

**D.A.T.A.'S**



# **TRANSISTOR**

**CHARACTERISTICS  
TABULATION**

**MARCH 1962**

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**12**

**VOL. XII No. I**

# HIGHLIGHTS

## OF D.A.T.A.'S TRANSISTOR TABULATION

### COMPLETE SEMIANNUAL REVIEW —

The only tabulation of its kind which regularly follows the growth of this dynamic field. Complete, superseding editions published semiannually.

### COVERAGE —

Worldwide, including American, British, Dutch, French, German, Italian, and Japanese manufacturers currently producing Transistors.

### ACCURACY OF DATA —

All data have been compiled from specification sheets and special information from the manufacturers. Before publication, the data are checked by the manufacturers for accuracy and completeness; therefore, in some instances, this Tabulation will contain more up-to-date information than is included in the manufacturers' regular releases.

### NOMENCLATURE —

The characteristic symbols used are consistent with those recommended by the IRE and AIEE.

### FEEDBACK —

In order to render a continually more valuable service, quite a number of our subscribers' suggestions have been incorporated in this Tabulation since its inception. Such suggestions are always welcomed and given serious consideration for future modifications.

*This listing includes currently manufactured types, with their major electrical characteristics. Complete specifications and evaluation information—as well as prices and availability—should be obtained direct from the manufacturers.*

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### SPECIAL NOTES

1. LIST OF MFRS. & ADDRESSES
  - a. Five new Mfrs: BRDB, CSC, NORC, RAU, SSE.
  - b. One deleted Mfr.: RHE.
2. INSIDE BACK FLAP
  - a. Following Type: E-Epitaxial Mesa changed to E-Epitaxial.
  - b. Following Max. BV<sub>CB</sub>, BV<sub>EB</sub>, BV<sub>CE</sub>  
§—Subscript R added.
3. This Edition reflects a 41% change from Sept. 1961 Edition, including new types, deleted types, & types with changed specs.
4. Stop in to see us at the IRE Show—Booth 4123.

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# HOW THIS TABULATION CAN WORK FOR YOU

TO ASSIST YOU IN MAKING MAXIMUM USE OF D.A.T.A.'s TRANSISTOR CHARACTERISTICS TABULATION, FOLLOWING ARE THE WAYS THIS TABULATION CAN SERVE YOU. CONTINUED REFERENCE TO THE TABULATION WILL SOON MAKE THESE PROCEDURES A MATTER OF SPEEDY ROUTINE, REDUCING YOUR RESEARCH TIME TO A MINIMUM.

## A. To Find a Transistor with Characteristics Meeting Your Design Requirements

### 1. Consult Technical Data Sections 1 and 2:

SECTION 1 — JUNCTION TRANSISTORS (Low Power) — is arranged first in order of increasing "Maximum Collector Dissipation in Free Air (mw)"; then in order of increasing " $f_{\alpha b}$  (Mc)" for those Transistors having the same max. coll. diss.; then in order of "Type No." for those Transistors having the same max. coll. diss. and the same  $f_{\alpha b}$ .

SECTION 2 — POWER TRANSISTORS — is arranged first in order of decreasing "Maximum Thermal Resistance (increasing power capability) in Free Air ( $^{\circ}\text{C}/\text{W}$ )"; then in order of "Type No." for those Transistors having the same max. therm. res.

NOTE: To make the Technical Data Sections more flexible and useful, symbols are utilized and are interpreted inside pull-out back cover flap. You will notice that there are 3 main categories of symbols: Those applicable both to Junction and Power Transistor Sections, those applicable to Junction Transistors Only, and those applicable to Power Transistors Only.

Please note especially under "Symbols Applicable Both to Junction and Power Transistor Sections: Under "Following Type", the last six symbols (Tetrode, Matched Pair-PNP & NPN, Switching Primarily, Switching plus its other uses, Pair, Photo-Transistor) represent non-standard Transistors, and by glancing down the "Type" column, you can pick out these non-standard types quickly, by the appropriate symbols.

2. Supporting OUTLINE DRAWINGS (Section 5 — In Order of Case No.) for most Transistors are referenced in the extreme right column of the Technical Data Section pages. Necessary explanations concerning the outline drawings are outlined on the first page of the Outline Drawing Section.
3. After you have selected one or more suitable Transistors, refer to Section 3 — TYPE NO. CROSS INDEX — which is arranged in type number sequence.

Opposite each type, you will see all the manufacturers (coded) of the type numbers you selected. Manufacturer codes are interpreted inside the back cover.

## B. To Find Characteristics and All Manufacturers of a Known Type Number

1. Consult Section 3 — TYPE NO. CROSS INDEX — which is arranged in type number sequence, and
  - a. Shows all manufacturers of each type (manufacturer code interpretation inside the back cover);
  - b. Indicates the Line Number in the Technical Data Sections (Section 1 and 2) where the characteristics of each type may be found, along with reference to the applicable dimensional drawing.

## C. To Find Similar or Equivalent Transistors to Replace a Known Type Number

1. Consult Section 3 — TYPE NO. CROSS INDEX — which is arranged in type number sequence. There you can determine the Line Number, in the Technical Data Section, of the known type number.
2. Above and/or below (as many as 25 types) that Line Number, you will quickly see any types which might serve as equivalents to the known type number.
3. Consult the Type No. Cross Index (Section 3) again for the manufacturers of the selected type numbers.

## D. To Determine Whether a Manufacturer Produces a Particular Type Number, or to Survey the Complete Transistor Line of Any of the Manufacturers

1. Consult Section 4 — MANUFACTURERS AND THEIR TYPE NUMBERS — which is arranged alphabetically by manufacturer.
2. All Transistors produced by each manufacturer are listed in type number sequence under the manufacturer's name.
3. Further details on individual type numbers of any manufacturer can be found by following the instructions in paragraph B. above.



# 1. JUNCTION TRANSISTORS

IN ORDER OF MAXIMUM COLLECTOR DISSIPATION,  $f_{\alpha b}$ , AND TYPE NO.



LINE No.	TYPE No.	Max. COLL. DISS. In Free Air (mw)	$f_{\alpha b}$ (Mc.)	ABSOLUTE MAX. RATINGS @ 25°C						TYPICAL PARAMETERS @ 25°C											DESCRIPTION					
				$V_{cb}$ (volt)	$I_c$ (ma)	$V_{eb}$ (volt)	De-rate Free Air PC/mw	Max. $I_{cbo}$ @ Max. $V_{cb}$ ( $\mu a$ )	BIAS		$h_{fe}$ or $h_{FE} - \uparrow$	CIRCUIT			Max. NF (db)	Gain (db)	$C_{ob}$ (pf)	$r_{bb} \times C_{ob}$ (nsec)	$t_r$ (sec)	Type P - NPN	Mat.	Max. Temp. (°C)	STATUS	Dwg. No.		
									$V_{cb}$ (volt)	$I_e$ (ma)		$h_i$ (ohm)	$h_o$ ( $\mu mho$ )	$h_r$ ( $\times 10^{-4}$ )												
1	2N232	9.0*	20.0*	4.5	3.0		1.1	6.0	3.0	.50	24	b	75	1.5						P-S	Ge	55J		TO24		
2♦#	2SB157	10†	.50	7.0	5.0	7.0	1.5	10∅	2.0	.25	35									P-A	Ge	55J		RO19		
3#	OC57	10	.50	7.0	10	7.0	1.5	1.5	2.0	.50	50	e	2900	60	17	10		60		P-A	Ge	55J	T	RO19		
4#	OC58	10	.65	7.0	10	7.0	1.5	1.5	2.0	.50	65	e	4000	80	17	10		60		P-A	Ge	55J	T	RO19		
5♦#	2SB158	10	.70	7.0	5.0	7.0	1.5	10∅	.50	.25	55									P-A	Ge	55J		RO19		
6♦#	2SB160	10	.70	7.0	5.0	7.0	1.5	10∅	2.0	3.75	75†									P-A	Ge	55J		RO19		
7♦#	2SB159	10	.90	7.0	5.0	7.0	1.5	10∅	.50	.25	80									P-A	Ge	55J		RO19		
8#	OC59	10	.90	7.0	10	7.0	1.5	1.5	2.0	.50	90	e	5700	100	17	10		60		P-A	Ge	55J	T	RO19		
9	SB100	10	45.0*	4.5∅				.50	3.0∅	.50∅	20	b	70					3.5	.80		P-S	Ge	55J		TO24	
10#	OC53	10		7.0	10	7.0		3.5	.50	.25	35									P-A	Ge	55J				
11#	OC54	10		7.0	10	7.0		3.5	.50	.25	55									P-A	Ge	55J				
12#	OC55	10		7.0	10	7.0		3.5	.50	.25	80									P-A	Ge	55J				
13#	OC56	10		7.0	10	7.0		3.5												P-A	Ge	55J				
14#	OC60	10		7.0	10	7.0		1.5	.50	.25	60									P-A	Ge	55J		RO19		
15#	OS13	15	8.00	30	2.0			40												P-∅	Ge	75J		X 1		
16	SO2	15	10.0*	3.0	5.0			10				b	100	6.0						P-A	Ge	65J		TO24		
17	2N1750	15*	50.0*	14	5.0	14	2.0	2.0	3.0∅	.50∅	30	b	60	3.0					6.0		P-S	Ge	75A		TO24	
18#	2SA19	15	50.0	12	2.0	.50		10∅	6.0	1.0	20	b	45	.30	2.0		36	1.5	.90		P-G	Ge	55J		TO 1	
19#	2SA20	15	55.0	12	2.0	.50		10∅	6.0	1.0	30	b	40	.20	2.0		39	1.5			P-G	Ge	55J		TO 1	
20#	2SA21	15	55.0	12	2.0	.50		10∅	6.0	1.0	50	b	40	.20	2.0		42	1.5			P-G	Ge	55J		TO 1	
21#	2SA121	15	100	15	2.0			8.0	6.0	1.0	24		50	.25	5.0		24	1.3			P-G	Ge	65J		RO14	
22#	2SA122	15	100	15	2.0			8.0	6.0	1.0	24		50	.25	5.0		30	1.3			P-G	Ge	65J		RO14	
23#	2SA123	15	100	15	2.0			8.0	6.0	1.0	24		50	.25	5.0		35	1.3			P-G	Ge	65J		RO14	
24#	2SA124	15	120	15	2.0			8.0	6.0	1.0	32		50	.25	5.0		31	1.3			P-G	Ge	65J		RO14	
25#	2SA125	15	120	15	2.0			2.0	6.0	1.0	49		40	.25	5.0		28	1.3			P-G	Ge	65J		RO14	
26♦#	2SA215	15	120	15	2.0	.50		5.0∅	6.0	1.0	40						24	1.0			P-G	Ge	65J		TO 1	
27♦#	2SA216	15	120	15	2.0	.50		5.0∅	6.0	1.0	40						27	1.0			P-G	Ge	65J		TO 1	
28♦#	2SA213	15	140	15	2.0	.50		5.0∅	6.0	1.0	25						7.0	1.0			P-G	Ge	65J		TO 1	
29♦#	2SA214	15	140	15	2.0	.50		5.0∅	6.0	1.0	25						29.5	1.0			P-G	Ge	65J		TO 1	
30▼#	ATZ10	17*		35	25				1.0	2.0	2.1Δ										PNPN†	Ge	55J	T		
31#	PD6	20	.04	50	2.0																∅	Ge				
32	MA2	20	20.0*	3.0	50			10	3.0	1.0∅	245	b	100	5.0				6.0	1.2		P-MA	Ge	75J		TO25	
33	SO1	20	20.0*	5.0	5.0			10	3.0∅	.50∅	10Δ	b	100	6.0				6.0			P-S	Ge	65J		TO24	
34	SO3	20	30.*Δ	5.0	5.0			10	3.0∅	.50∅	10Δ										P-S	Ge	65J			
35	2N344	20†	50.0*	5.0∅	5.0		.75	3.0	3.0∅	.50∅	22										P-SA	Ge	55J		TO24	
36	2N345	20†	50.0*	5.0∅	5.0		.75	3.0	3.0∅	.50∅	35										P-Δ	Ge	55J		TO24	
37#	2SA154	20	50.0	15	4.0	.50		5.0∅	6.0	1.0	20	b	45	.30	2.0		36	1.5			P-G	Ge	65J		TO 1	
38#	2SA155	20	55.0	15	4.0	.50		5.0∅	6.0	1.0	30	b	40	.20	2.0		39	1.5			P-G	Ge	65J		TO 1	
39#	2SA156	20	55.0	15	4.0	.50		5.0∅	6.0	1.0	50	b	40	.20	2.0		42	1.5			P-G	Ge	65J		TO 1	
40#	2SA159	20	55.0	15	4.0	.50		5.0∅	6.0	1.0	50	b	40	.20	2.0		36	1.5			P-G	Ge	65J		TO 1	
41#	2SA160	20	55.0	15	4.0	.50		5.0∅	6.0	1.0	60	b	40	.20	2.0		39	1.5			P-G	Ge	65J		TO 1	
42#	2SA153	20	60.0	15	4.0	.50		5.0∅	6.0	1.0	60	b	40	.20	2.0		28	1.5			P-G	Ge	65J		TO 1	
43#	2SA157	20	65.0	15	4.0	.50		5.0∅	6.0	1.0	50	b	40	.20	2.0			1.5			P-G	Ge	65J		TO 1	
44	2N346	20†	75.0*	5.0∅	5.0		.75	3.0	3.0∅	.50∅	35										P-Δ	Ge	55J		TO24	
45#	TF65	25	.70	16	15	16	.50	5.0	2.0	2.0∅	45	b	19	1.8	4.0				25	3.0		P-A	Ge	75J		

# 1. JUNCTION TRANSISTORS

IN ORDER OF MAXIMUM COLLECTOR DISSIPATION,  $f_{\alpha b}$ , AND TYPE NO.



LINE No.	TYPE No.	Max. COLL. DISS. in Free Air (mw)	$f_{\alpha b}$ (Mc.)	ABSOLUTE MAX. RATINGS @ 25°C					TYPICAL PARAMETERS @ 25°C										DESCRIPTION						
				$V_{cb}$ (volt)	$I_c$ (ma)	$V_{eb}$ (volt)	De-rate Free Air PC/mw	Max. $I_{cbo}$ @ Max. $V_{cb}$ ( $\mu A$ )	BIAS		$h_{fe}$ or $h_{FE} - \uparrow$	CIRCUIT			Max. NF (db)	Gain (db)	$C_{ob}$ (pf)	$r_{bb} \times C_{ob}$ (nsec)	$t_r$ (sec)	Type P - NPN N - NPN	Mat.	Max. Temp. (°C)	STATUS	Dwg. No.	
									$V_{cb}$ (volt)	$I_e$ (ma)		$h_i$ (ohm)	$h_o$ ( $\mu mho$ )	$h_r$ ( $\times 10^{-4}$ )											
46#	TF65/30	25	.70	32	15	32	.50	5.0	1.0	2.0	45	b	19	1.8	4.0						P-A	Ge	75J		
47	2N170	25	2.50	6.0	20		.91	3.0	5.0	1.0	20										N-G	Ge	50S		OV 5
48	2N166	25	5.00	6.0	20			5.0	6.0	1.0	32										N	Ge	50		
49#	2SA39	25	5.00	18	5.0	12	2.0	10	6.0	1.0	49										P-A	Ge	75J		TO 2
50#	2SA37	25	7.00	18	5.0	12	2.0	10	6.0	1.0	70										P-A	Ge	75J		TO 2
51#	2SA38	25	10.0	18	5.0	12	2.0	10	6.0	1.0	70										P-A	Ge	75J		TO 2
52	MA1	25	20.0*	6.0	50			10	3.0	1.0	245	b	100	2.5							P-MA	Ge	75J		TO24
53#	V15/20R	25	30.0	15	12		2.0		4.5	1.0	25										P-D	Ge	75J		
54	2N1122	25*	40.0	12	50		1.6	5.0	.25	10	25										P-MA	Ge	85J		TO24
55	2N1122A	25*	40.0	15	50		1.6	5.0	.25	10	25										P-MA	Ge	85J		TO24
56	MA28	25	40.0*	6.0	50			10	.50	50	50										P-MA	Ge	85J		TO24
57	2N393	25*	50.0	6.0	50		2.2	5.0	.50	50	50										P-MA	Ge	100J	M	TO24
58	2N128	25	60.0*	4.5	5.0	10		15	3.0	.50	40	b	75	1.5							P-S	Ge	85J	M	TO24
59	2N1411	25	70.0	5.0	50	5.0	1.6	5.0	1.0	50	75	b	55	1.0	20	20	25	3.0	.55	30n	P-MA	Ge	85J	A	TO24
60	2N1427	25	100	6.0	50	6.0	1.6	5.0	.25	10	25	b	55	1.0	20	20	25	3.5	.55	30n	P-MD	Ge	85J		TO24
61	2N503	25*	168	20	50	.50	1.6	100	10	2.0	45										P-MD	Ge	85J		TO 9
62#	GTA3	25	200	15	2.0			20			65										P-G4	Ge	75J		
63	2N534	25#		50	25		.70	15	5.0	1.0	100	b	35	.35							P-AD	Ge	65J		TO23
64	OCP70	25			20																P	Ge	65J		
65#	ES3110	27*	.30	30	10		.75	6.0	5.0	1.0	13										P-A	Ge	65J		TO23
66#	ES3111	27*	.40	30	10		.75	6.0	5.0	1.0	19										P-A	Ge	65J		TO23
67#	ES3112	27*	.60	30	10		.75	6.0	5.0	1.0	28										P-A	Ge	65J		TO23
68#	ES3113	27*	.80	30	10		.75	6.0	5.0	1.0	40	b	28	.75	2.3						P-A	Ge	65J		TO23
69#	ES3114	27*	1.00	30	10		.75	6.0	5.0	1.0	59										P-A	Ge	65J		TO23
70#	ES3115	27*	1.50	30	10		.75	6.0	5.0	1.0	86										P-A	Ge	65J		TO23
71#	ES3116	27*	2.00	30	10		.75	6.0	5.0	1.0	125										P-A	Ge	65J		TO23
72#	AC108	30	1.00	20	50		.50	5.0	5.0	1.0	30										P-A	Ge	75J		TO 1
73#	AC109	30	1.00	20	50		.50	5.0	5.0	1.0	50										P-A	Ge	75J		TO 1
74#	AC110	30	1.00	20	50		.50	5.0	5.0	1.0	75										P-A	Ge	75J		TO 1
75#	OC331	30*	1.00	7.0	30		1.0	1.5	2.0	.50	27	e	1700	22	4.0	12					P-A	Ge	75J		RO40
76#	OC341	30*	1.00	7.0	30		1.0	1.5	2.0	.50	40	e	2600	26	5.0	12					P-A	Ge	75J		RO40
77#	OC342	30*	1.00	7.0	30		1.0	1.5	2.0	.50	65	e	3800	30	7.0	12					P-A	Ge	75J		RO40
78#	OC361	30*	1.00	7.0	30		1.0	1.5	2.0	.50	40	e	2600	26	5.0	7.0					P-A	Ge	75J		RO40
79#	OC362	30*	1.00	7.0	30		1.0	1.5	2.0	.50	65	e	3800	30	7.0	7.0					P-A	Ge	75J		RO40
80#	R2	30	1.00	30	10	30		8.0	1.5	1.0	100	e	2000	30	8.0	10		20			P-A	Ge	100S		u 11
81#	OC343	30*	1.20	7.0	30		1.0	1.5	2.0	.50	100	e	6500	34	11	12					P-A	Ge	75J		RO40
82#	OC363	30*	1.20	7.0	30		1.0	1.5	2.0	.50	100	e	6500	34	11	7.0					P-A	Ge	75J		RO40
83#	OC351	30*	1.60	5.0	30		1.0	1.5	2.0	.50	160	e	1100	38	15	12					P-A	Ge	75J		RO40
84#	R3	30	2.00	30	10	30		5.0	1.5	1.0	100	e	2000	30	8.0	10		8.0			P-A	Ge	100S		u 12
85#	OC364	30*	2.50	7.0	30		1.0	1.5	2.0	.50	85	e	5200	32	9.0	5.0					P-A	Ge	75J		RO40
86	2N1249	30	5.00	6.0	5.0	2.0	4.0		3.0	.02	38										N	Si	150		
87#	2SA203	30	5.00	15	5.0	5.0		10	6.0	1.0	31										P-A	Ge	75J		
88#	OC612	30	6.00	17		10	1.0	20	6.0	.50	60										P-A	Ge	75J		
89#	2SA201	30	8.00	15	5.0	5.0		10	6.0	1.0	49	e	1050								P-A	Ge	75J		
90#	2SC75	30	10.0	15	5.0			8.0	6.0	1.0	24										N-G	Ge	75J		RO14

# 1. JUNCTION TRANSISTORS

IN ORDER OF MAXIMUM COLLECTOR DISSIPATION,  $f_{\alpha b}$ , AND TYPE NO.



LINE No.	TYPE No.	Max. COLL. DISS. in Free Air (mw)	$f_{\alpha b}$ (Mc.)	ABSOLUTE MAX. RATINGS @ 25°C					TYPICAL PARAMETERS @ 25°C										DESCRIPTION					
				$V_{cb}$ (volt)	$I_c$ (ma)	$V_{eb}$ (volt)	De-rate Free Air $^{\circ}C/mw$	Max. $I_{cbo}$ @ Max. $V_{cb}$ ( $\mu a$ )	BIAS		$h_{fe}$ or $h_{FE} - \dagger$	CIRCUIT			Max. NF (db)	Gain (db)	$C_{ob}$ (pf)	$r_{bb} \times C_{ob}$ (nsec)	$t_r$ (sec)	Type P - PNP N - NPN	Mat.	Max. Temp. ( $^{\circ}C$ )	STATUS	Dwg. No.
									$V_{cb}$ (volt)	$I_e$ (ma)		$h_i$ (ohm)	$h_o$ ( $\mu mho$ )	$h_r$ ( $\times 10^{-4}$ )										
91#	2SC76	30	10.0	15	5.0			8.0	6.0	1.0	24	38							N-G	Ge	75J		RO14	
92#	2SC77	30	10.0	15	5.0			8.0	6.0	1.0	24	38							N-G	Ge	75J		RO14	
93#	2SC175	30	10.0	15	5.0			8.0	6.0	1.0	24	38							N-G	Ge	75J		RO17	
94#	2SC176	30	10.0	15	5.0			8.0	6.0	1.0	24	38							N-G	Ge	75J		RO17	
95#	2SC177	30	10.0	15	5.0			8.0	6.0	1.0	24	38							N-G	Ge	75J		RO17	
96#	OC613	30	10.0	17		10	1.0	20	6.0	.50	60	e 400			10				P-A	Ge	75J			
97#	2SA202	30	12.0	15	5.0	5.0		10	6.0	1.0	70								P-A	Ge	75J			
98#	AF101	30	14.0	20		8.0	1.0	20	6.0	.50	50	e 1600			10				P-A	Ge	75J			
99#	2SC73	30	20.0	15	5.0			8.0	6.0	1.0	41								N-G	Ge	75J			
100#	2SC78	30	20.0	15	5.0			2.0	6.0	1.0	49	33	.20	2.0					N-G	Ge	75J		RO14	
101#	2SC173	30	20.0	15	5.0			8.0	6.0	1.0	41	35							N-G	Ge	75J		RO17	
102#	2SC178	30	20.0	15	5.0			2.0	6.0	1.0	49	33	.20	2.0					N-G	Ge	75J		RO17	
103#	26T1	30	25.0 $\Delta$	11	10			6.0	5.0 $\emptyset$	3.0 $\emptyset$	20 $\Delta$ †								P	Ge	85J			
104	2N129	30	30.0*	4.5 $\emptyset$	5.0	10	2.0	3.0	3.0 $\emptyset$	.50 $\emptyset$	20	b 70	2.0		20	20	4.0	1.0	P-S	Ge	85J	A	TO24	
105	2N1109	30 $\emptyset$	30.0	16	5.0			10			20db						1.5		P-GD	Ge	85J		TO22	
106	2N1108	30 $\emptyset$	35.0	16	5.0			10			33db						1.5		P-GD	Ge	85J		TO22	
107	2N1110	30 $\emptyset$	35.0	16	5.0			10			29db						1.5		P-GD	Ge	85J		TO22	
108	2N1111	30 $\emptyset$	35.0	20	5.0			10			25db						1.5		P-GD	Ge	85J		TO22	
109	2N1111A	30 $\emptyset$	35.0	20	5.0			10			25db						1.5		P-GD	Ge	85J		TO22	
110	2N1111B	30 $\emptyset$	35.0	27	5.0			10			25db						1.5		P-GD	Ge	85J		TO22	
111	2N1107	30 $\emptyset$	40.0	16	5.0			10			34db						1.5		P-GD	Ge	85J		TO22	
112#	25T1	30	40.0 $\Delta$	11	10			6.0	5.0 $\emptyset$	3.0 $\emptyset$	20 $\Delta$ †								P	Ge	85J			
113#	OC614	30	45.0	25		.80	1.0	50	6.0	.50	60	e 160			10				P-D	Ge	75J			
114	2N504	30	50.* $\Delta$	35	50	1.0	1.3	10	12	1.0	16					46			P-MD	Ge	85J		TO 1	
115	3N36	30	50.0	7.0	20	2.0	2.0	10	5.0	1.5	9.0	e 1111	1200	220	11	9	2.0	.10	N4	Ge	85J		TO12	
116#	T1691	30*	50.0 $\Delta$	20	50	.50		10 $\emptyset$	6.0	1.0	200 $\emptyset$	b 40				34	3.0		P	Ge	85J			
117#	AF105	30	55.0	25		.80	1.0	50	6.0	.50	45								P-D	Ge	75J			
118#	OC615	30	80.0	25		.80	1.0	50	6.0	.50	110	e 35			10				P-D	Ge	75J			
119	3N37	30	90.0	7.0	20	2.0	2.0	10	5.0	1.5	13	e 85	1400	180	11	9	1.5	.07	N4	Ge	85J		TO12	
120	2N499	30*	170 $\S$	30	50	.50	1.3	15	10	3.0	8.5				10	10	1.3	.05	P-MD $\Delta$	Ge	85J	A	TO 1	
121#	AF106	30*	220 $\emptyset$	25	10		.70	10	12	1.0 $\emptyset$	25	b			1.5	7.0			P-ME	Ge	75J		TO18	
122#	AFY12	30*	220 $\emptyset$	25	10		1.0	3.0	12	1.0 $\emptyset$	40				1.5	7.0			P-ME	Ge	75J		TO18	
123	2N588	30	250*	15	50	.50	1.3	15							3.8	10	1.5		P-MD	Ge	85J		TO 1	
124#	HF100	30	250	15	50	.50	1.3	15							15				P-MD	Ge	85J			
125#	HF200	30	320	30	50	.50	.80	15	10	3.0	8.5				10	10	1.3	.04	P-MD	Ge	85J			
126	2N240	30		6.0 $\emptyset$	15		2.4	10	3.0	.50 $\emptyset$	30	b 66	1.5				4.0	.62	P-S†	Ge	85J	M	TO24	
127†	2N252	30		16 $\emptyset$	5.0			10									1.0		P-GD	Ge	55A		OV 9	
128†	2N308	30		20	5.0			10									41	1.0	P-GD	Ge	55A		OV 9	
129†	2N309	30		20	5.0			10									43	1.0	P-GD	Ge	55A		OV 9	
130†	2N310	30		30	5.0			10									37	1.0	P-GD	Ge	55A		OV 9	
131#	ASZ30	30		50	250	.70	1.0	40									40		P-D	Ge	75J			
132▼	ST1543	30		6.0	5.0	1.0			3.0	.005	25†								N	Si	150		TO18	
133	2N77	35	.70	25	15			10	4.0 $\emptyset$	.70 $\emptyset$	55	e 2720	14	3.2	6.0				P-A	Ge	50A			
134#	2SA137	35	5.00	6.0	10			10	3.0	1.0 $\emptyset$	50								P-A	Ge	85S		RO16	
135#	2SA136	35	10.0	6.0	10			10	3.0	1.0 $\emptyset$	75								P-A	Ge	85S		RO18	

# 1. JUNCTION TRANSISTORS

IN ORDER OF MAXIMUM COLLECTOR DISSIPATION,  $f_{cb}$ , AND TYPE NO.



LINE No.	TYPE No.	Max. COLL. DISS. in Free Air (mw)	$f_{cb}$ (Mc.)	ABSOLUTE MAX. RATINGS @ 25°C					TYPICAL PARAMETERS @ 25°C										DESCRIPTION					
				BV <sub>cb</sub> (volt)	I <sub>c</sub> (ma)	BV <sub>eb</sub> (volt)	De-rate Free Air P/C/mw	Max. I <sub>cb</sub> @ Max. V <sub>cb</sub> (μa)	BIAS		h <sub>fe</sub> or h <sub>FE</sub> - †	CIRCUIT			Max. NF (db)	Gain (db)	C <sub>ob</sub> (pf)	r <sub>bb</sub> × C <sub>ob</sub> (nsec)	t <sub>r</sub> (sec)	Type P - PNP N - NPN	Mat.	Max. Temp. (°C)	STATUS	Dwg. No.
									V <sub>cb</sub> (volt)	I <sub>e</sub> (ma)		h <sub>i</sub> (ohm)	h <sub>o</sub> (μmho)	h <sub>r</sub> (×10 <sup>-4</sup> )										
136#	2SA107	35	20.0	6.0	10			10	3.0	1.0∅	40							P-D	Ge	85S				
137#	2SA106	35	30.0	6.0	10			10	3.0	1.0∅	50							P-D	Ge	85S				
138#	2SA105	35	75.0	6.0	10			10	3.0	1.0∅	50							P-D	Ge	85S				
139	2N768	35	175§	12	100	2.1		25	.20∅	2.0∅	40†							P-MD	Ge	100		TO18		
140	2N769	35	900§	12	100	2.0	2.1	3.0∅	.50∅	2.0∅	55†							P-MD	Ge	100J		TO18		
141	2N1398	35		5.0				10			2.4							P-ME	Ge			RO34		
142	2N1399	35		5.0				10			2.4							P-ME	Ge			RO34		
143	2N1400	35		5.0				10			1.6							P-ME	Ge			RO34		
144	2N1401	35		5.0				10			2.1							P-ME	Ge			RO34		
145	2N1401A	35		5.0				10			2.1							P-ME	Ge			RO34		
146	2N1402	35		5.0				10			1.7							P-ME	Ge			RO34		
147#	ES3120	36*	.30	30	10			6.0∅	5.0	1.0∅	13							P-A	Ge	65J		TO 5		
148#	ES3121	36*	.40	30	10			6.0∅	5.0	1.0∅	19							P-A	Ge	65J		TO 5		
149#	ES3122	36*	.60	30	10			6.0∅	5.0	1.0∅	28							P-A	Ge	65J		TO 5		
150#	ES3123	36*	.80	30	10			6.0∅	5.0	1.0∅	40	b	28	.75	2.3	10		P-A	Ge	65J		TO 5		
151#	ES3124	36*	1.00	30	10			6.0∅	5.0	1.0∅	59							P-A	Ge	65J		TO 5		
152#	ES3125	36*	1.50	30	10			6.0∅	5.0	1.0∅	86							P-A	Ge	65J		TO 5		
153#	ES3126	36*	2.00	30	10			6.0∅	5.0	1.0∅	125							P-A	Ge	65J		TO 5		
154#	ES3501	36*		10	10				5.0	1.0∅	50							P-A∅	Ge			X 2		
155#	2SA260	40	200§	20	5.0	.40		15	6.0∅	2.0∅	10							P-ME	Ge	85J		TO17		
156#	2SA261	40	400§	20	5.0	.40		15	6.0∅	2.0∅	10							P-ME	Ge	85J		TO17		
157#	2SA262	40	400§	20	5.0	.40		15	6.0∅	2.0∅	10							P-ME	Ge	85J		TO17		
158#	2SA263	40	400§	20	5.0	.40		15	6.0∅	2.0∅	10							P-ME	Ge	85J		TO17		
159#	2SA264	40	600§	20	5.0	.40		15	6.0∅	2.0∅	10							P-ME	Ge	85J		TO17		
160#	2SA265	40	600§	20	5.0	.40		15	6.0∅	2.0∅	10							P-ME	Ge	85J		TO17		
161#	2SB23	40		15	10	5.0		10	6.0∅	1.0								P-A	Ge	75J		TO 1		
162#	2SB24	40		15	10	5.0		10	6.0∅	1.0∅								P-A	Ge	75J		TO 1		
163#	2SB90	40		18	5.0	12	1.3	14	6.0	1.0	70	b	30	.20	2.5			P-A	Ge	75J		TO 2		
164#	2SB91	40		18	30	12	1.3	14	1.0	30	70†							P-A	Ge	75J		TO 2		
165#	2SB97	40		18	5.0	12	1.3	14	6.0	1.0	70							P-A	Ge	75J		TO 2		
166	CK891	40†		6.0	50			2.5∅	1.5	.50	100							P-A	Ge	60A	T			
167	CK892	40†		6.0	50			2.5∅	1.5	.50	100							P-A	Ge	60A	T			
168	2N1785	45	125*	10	50	1.0	1.3	10	6.0∅	1.0∅	60†	b	27	.15				P-MD	Ge	85A		TO 9		
169	2N1786	45	125*	10	50	.50	1.3	10	6.0∅	1.0∅	60†	b	27	.15				P-MD	Ge	85A		TO 9		
170	2N1787	45	125*	15	50	.50	1.3	10	6.0∅	1.0∅	60†	b	27	.15				P-MD	Ge	85A		TO 9		
171	2N124	50	.30	10	8.0	5.0	1.4	2.0	5.0	1.0∅	18	e	2200	23	9.0	15	45	N	Ge	75		OV 9		
172#	OC65	50	.45	10	10	10	.65	12	2.0	.50	30	e	800	80	5.0	15	40	P	Ge	75J				
173#	OC66	50	.47	10	10	10	.65	12	2.0	3.0	47	e	800	80	5.0	15	40	P	Ge	75J				
174#	2SB68	50	.50	105	100	50	1.2		.35	5.0	60†							P	Ge	85				
175#	2SB150	50	.50	105	40	50	1.0	50	1.5	5.0	60†							P-A	Ge	75J		TO 1		
176	2N34A	50	.60	25	8.0				6.0	1.0	60							P	Ge	75				
177	2N228	50	.60	40	100		1.0	100	6.0∅	1.0∅	60	e	2300			25		N-A	Ge	75J		TO22		
178	2N506	50	.60	40	100			15	1.0	10	40							P	Ge	85				
179▼	2N507	50	.60	40	100			15	.50	10	25Δ							N	Ge	85		TO22		
180	2N567	50	.60	40	100			15	1.0	10	40							N	Ge	85				



# 1. JUNCTION TRANSISTORS

IN ORDER OF MAXIMUM COLLECTOR DISSIPATION,  $f_{cb}$ , AND TYPE NO.



LINE No.	TYPE No.	Max. COLL. DISS. in Free Air (mw)	$f_{cb}$ (Mc.)	ABSOLUTE MAX. RATINGS @ 25°C					TYPICAL PARAMETERS @ 25°C										DESCRIPTION					
				$V_{cb}$ (volt)	$I_c$ (ma)	$V_{eb}$ (volt)	De-rate Free Air C/mw	Max. $I_{cbo}$ @ Max. $V_{cb}$ ( $\mu$ a)	BIAS		$h_{fe}$ or $h_{FE} - \dagger$	CIRCUIT			Max. NF (db)	Gain (db)	$C_{ob}$ (pf)	$r_{bb} \times C_{ob}$ (nsec)	$t_r$ (sec)	Type P - PNP N - NPN	Mat.	Max. Temp. (°C)	STATUS	Dwg. No.
									$V_{cb}$ (volt)	$I_e$ (ma)		$h_i$ (ohm)	$h_o$ ( $\mu$ mho)	$h_r$ ( $\times 10^{-4}$ )										
181	2N591	50	.70	32	40		.34	7.0	120	2.00	70							P-A	Ge	71A	T	TO 1		
182▼	2N591/5	50	.70	32	40		.34	7.0	120	2.00	70							P-A	Ge	71A		TO 5		
183#	2SB73	50	.70	10	2.0	10	1.2	10	4.0	.50	65	3900	11.8	3.8	4.0			P	Ge	85				
184#	2SB183	50	.70	12	20	10	1.2	10	4.0	.50	65	3900	11.8	3.8	4.0			P	Ge	85				
185	2N103	50	.75	35	10			50	4.5	1.0	4.0				22	20		N-G	Ge	75				
186	2N306	50	.75	20	100		.83	50	6.00	1.00	75							N-A	Ge	85J		TO22		
187	2N175	50	.85	10	2.0	10		12	4.00	5.00	65				6	43	36	P-A	Ge	71A		TO40		
188	2N220	50	.85	10	2.0	10		12	4.00	5.00	65				6.0	43	36	P-A	Ge	71A	M	TO44		
189#	2SB39	50	.85	100	2.0			120	4.0	.50	45				6.0	43	40	P-A	Ge	85S		RO16		
190	2N97	50	1.00	30	10			2.0	4.5	1.0	13				20	38	19	N-G†	Ge	75				
191	2N107	50	1.00	12	10		.50	10	5.0	1.0	19				22	28	40	P-D	Ge	60				
192	2N1265/5	50	1.00	10	100	10	1.2		6.00	1.0	75							P-A	Ge	85J		TO 5		
193	2N1392	50	1.00	20		10	1.3	25	5.0	1.0	40	1.8K	.50	4.0	16		30	P-A0	Ge	85S				
194	2N1394	50	1.00	10		10	1.3	25	5.0	1.0	50	2.5K	1.0	5.0	16		30	P-A0	Ge	85S				
195#	2SD64	50	1.00	25	50			15	1.00	10	100†		.25	1.2	15		35	N-A	Ge	85J		RO14		
196#	OC602	50	1.00	20	50	10	.60	20	1.0	2.0	40	e 750	75	5.5	10	40		P-A	Ge	75J				
197#	OC603	50	1.10	20	50	10	.60	20	1.0	2.0	50	e 900	86	6.0	6.0	40		P-A	Ge	75J				
198#	OC604	50	1.20	30	50	10	.60	20	1.0	2.0	65	e 1200	100	6.5	10	45		P-A	Ge	75J				
199	2N469A	50	1.80	20		10	1.3	25	5.0	1.0	75	2.8K	.50	4.0	16		30	P-A0	Ge	85S				
200	2N207	50	2.00	120	20	12	.80	15	5.00	1.00	100	b 33	.40		15			P-A	Ge	65J		TO23		
201	2N207A	50	2.00	120	20	12	.80	10	5.00	1.00	100	b 33	.40		10			P-A	Ge	65J		TO23		
202	2N207B	50	2.00	120	20	12	.80	10	5.00	1.00	100	b 33	.40		5.0			P-A	Ge	65J		TO23		
203	2N535	50	2.00	20	20	20	1.2	10	5.0	1.00	100	b 33	.40	4.0	10			P-AΔ	Ge	85J		TO23		
204	2N535A	50	2.00	20	20	20	1.2	10	5.0	1.00	100	b 33	.40	4.0	5.0			P-A	Ge	85J		TO23		
205	2N535B	50	2.00	20	20	20	1.2	10	5.0	1.00	100	b 33	.40	4.0				P-A	Ge	85J		TO23		
206	2N536	50	2.00	20	30	20	1.2	10	1.00	300	150Δ							P-A†	Ge	85J		TO23		
207	2N1010	50	2.00	10	2.0				3.50	.30	35					5.0		N-A	Ge	55A	T	TO 1		
208	2N98	50	2.50	40	10			2.0	4.5	1.0	40				20	47	14	N-G	Ge	75				
209	2N94	50	3.00	200	50		1.0	50	6.00	1.00	10					26	11	1.2	N-A	Ge	75J		TO22	
210	2N193	50	3.00	180	50		1.0	50			10						11	1.2	N	Ge	75J		TO22	
211	2N194	50	3.00	180	50		1.0	25	6.00	1.00	8.0					15	11	1.2	N-A	Ge	75J		TO22	
212	2N194A	50	3.00	180	50		1.0	50	6.00	1.00	8.0					23	11	1.2	N-A	Ge	75J		TO22	
213	2N211	50	3.00	100	50		1.0	20	6.00	1.00	10						10	1.2	N-A	Ge	75J		TO22	
214	2N216	50	3.00	180	50		1.0	50	6.00	1.00	7.5					26	11	1.2	N-A	Ge	75J		TO22	
215	2N229	50	3.00	100	40		1.0	100	6.00	1.00	75					37		N	Ge	75J		TO22		
216	2N233	50	3.00	100	50		1.0	50	6.00	1.0	5.0						12	1.2	N-A	Ge	75J			
217	2N233A	50	3.00	180	50		1.0	50	6.00	1.00	9.0					24	12	1.2	N-A	Ge	75J		TO22	
218	2N515	50	3.00	180	10		1.0	50	6.00	1.00	7.5					25	11	1.2	N-A	Ge	75J		TO22	
219	2N516	50	3.00	180	10		1.0	50	6.00	1.00	7.5					27	11	1.2	N-A	Ge	75J		TO22	
220	2N517	50	3.00	180	10		1.0	50	6.00	1.00	7.5					29	11	1.2	N-A	Ge	75J		TO22	
221	2N1264/13	50	3.00	20	10	.10	1.0	50	9.00	1.0	25					18	4.0		P-D	Ge	75J		TO13	
222	2N1393	50	3.40	20		10	1.3	25	5.0	1.0	160	5.0K	.50	4.0	16		30		P-A0	Ge	85S			
223	2N99	50	3.50	40	10			2.0	4.5	1.0	40				15	47	10		N-G†	Ge	75			
224#	BFZ10	50\$	3.50\$	15	10						30								P-AD	Si	150J	T		
225#	OC41	50*	4.00\$	16	50					50	35								P-†	Ge	75J			

# 1. JUNCTION TRANSISTORS

IN ORDER OF MAXIMUM COLLECTOR DISSIPATION,  $f_{\alpha b}$ , AND TYPE NO.



LINE No.	TYPE No.	Max. COLL. DISS. in Free Air (mw)	$f_{\alpha b}$ (Mc.)	ABSOLUTE MAX. RATINGS @ 25°C					TYPICAL PARAMETERS @ 25°C										DESCRIPTION					
				BV <sub>cb</sub> (volt)	I <sub>c</sub> (ma)	BV <sub>eb</sub> (volt)	De-rate Free Air P/C/mw	Max. I <sub>cb0</sub> @ Max. V <sub>cb</sub> (μa)	BIAS		h <sub>fe</sub> or hFE - †	CIRCUIT			Max. NF (db)	Gain (db)	C <sub>ob</sub> (pf)	r <sub>bb</sub> × C <sub>ob</sub> (nsec)	t <sub>r</sub> (sec)	Type P - NPN N - NPN	Mat.	Max. Temp. (°C)	S T A T U S	Dwg. No.
									V <sub>cb</sub> (volt)	I <sub>e</sub> (ma)		h <sub>i</sub> (ohm)	h <sub>o</sub> (μmho)	h <sub>r</sub> (×10 <sup>-4</sup> )										
226#	35T1	50	4.50	20	50			6.0	5.0	1.0	20	b							P	Ge	85S		RO26	
227	2N125	50	5.00	10	8.0	5.0	.70	2.0	5.0	1.0	36	b	62	.23	3.0			N	Ge	75J		OV 9		
228	2N126	50	5.00	10	8.0	5.0	.70	2.0	5.0	1.0	74	b	58	.28	4.4			N	Ge	75J		OV 9		
229#	2SA182	50	5.00	15	10	15		10	6.0	1.0	27							P-A	Ge	75J				
230	2N94A	50	6.00	20	50			50	6.0	1.0	25							N-A	Ge	75J		TO22		
231	2N212	50	6.00	18	50			50	6.0	1.0	20							N-A	Ge	75J		TO22		
232	2N1058	50	6.00	20	50			50	6.0	1.0	17							N-A	Ge	75J		TO22		
233#	36T1	50	6.50	10	50			6.0	5.0	1.0	40	b			70			P	Ge	85S		RO26		
234#	OC42	50*	7.00§	16	50						50							P-†	Ge	75J				
235#	2SA181	50	8.00	15	10	15		10	6.0	1.0	47							P-A	Ge	75J		TO 1		
236#	37T1	50	10.0	10	50			6.0	5.0	1.0	60	b						P	Ge	85S		RO26		
237#	GFT43A	50	10.0	15	10	.80	1.0	10	6.0	1.0	35		30	30				P-MD	Ge	75J		RO36		
238#	GFT44/15E	50	10.0	15			1.0											P-D	Ge					
239#	2SA180	50	12.0	15	10	15		10	6.0	1.0	70							P-A	Ge	75J		TO 1		
240#	2SA183	50	16.0	15	10	15		10	6.0	1.0	30							P-A	Ge	75J		TO 1		
241#	OC43	50*	18.0§	15	50					50	100							P-†	Ge	75J	†			
242#	2SA113	50	20.0	34	10			7.0	12	1.0	45							P-A	Ge	85S				
243#	2SA114	50	20.0	34	10			7.0	12	1.0	40							P-A	Ge	85S				
244#	2SA218	50	25.0	20	10	.50		12	6.0	1.0	48							P-D	Ge	75J		TO44		
245▼	GT5148	50	25.0	3.0		1.0	.83	10	.30	1.0	25†							P-MA	Ge			TO24		
246#	2SA115	50	30.0	34	10			7.0	12	1.0	60							P-A	Ge	85S				
247#	GFT43B	50	30.0	15	10	.80	1.0	10	6.0	1.0	70		30	30				P-MD	Ge	75J		RO36		
248#	2SA219	50	40.0	20	10	.50		12	6.0	1.0	50							P-D	Ge	75J		TO44		
249#	2SA285	50	40.0	18	5.0	.50		15	6.0	1.0	70							P-D	Ge	75J		TO 1		
250#	GFT43	50	40.0	15	10	.80	1.0	10		1.0	50							P-D	Ge	75	T	RO36		
251#	2SA221	50	50.0	20	10	.50		12	6.0	1.0	75							P-D	Ge	75J		TO44		
252#	2SA251	50	50.0	15	50	15		5.0	6.0	1.0	50							P-MA	Ge	80J				
253#	2SA286	50	50.0	18	5.0	.50		15	6.0	1.0	70							P-D	Ge	75J		TO 1		
254#	2SA287	50	60.0	18	5.0	.50		15	6.0	1.0	70							P-D	Ge	75J		TO 1		
255#	2SA223	50	64.0	20	10	.50		12	6.0	1.0	50							P-D	Ge	75J		TO44		
256#	OC169	50	70.0	20	10	.50	.60	13	6.0	1.0	100							P-AD	Ge	75J		TO 7		
257#	OC170	50	70.0	20	10	.50	.60	13	6.0	1.0	100							P-AD	Ge	75J		TO 7		
258#	OC171	50	70.0	20	10	.50	.60	13	6.0	1.0	100							P-AD	Ge	75J		TO 7		
259	2N1754	50	75.0§	13	100		1.2	100	.50	40	50†							P-MD	Ge	85A		TO 9		
260#	AF114	50	75.0	20	10		.60	8.0	6.0	1.0	150							P-AD	Ge	75J		TO 7		
261#	AF115	50	75.0	20	10		.60	8.0	6.0	1.0	150							P-AD	Ge	75J		TO 7		
262#	AF116	50	75.0	20	10		.60	8.0	6.0	1.0	150							P-AD	Ge	75J		TO 7		
263#	AF117	50	75.0	20	10		.60	8.0	6.0	1.0	150							P-AD	Ge	75J		TO 7		
264▼#	AF131	50	75.0	20	10	1.0	1.0	8.0	6.0	1.0	75							P-AD	Ge	75J		TO18		
265▼#	AF132	50	75.0	20	10	1.0	1.0	8.0	6.0	1.0	75							P-AD	Ge	75J		TO18		
266#	2SA224	50	80.0	20	10	.50		12	6.0	1.0	80							P-D	Ge	75J		TO44		
267#	2SA252	50	80.0	15	50	15		5.0	6.0	1.0	150							P-MA	Ge	80J				
268#	GFT42B	50	80.0	15			1.0											P-D	Ge					
269#	GFT42A	50	90.0	15			1.0											P-D	Ge					
270#	2SA226	50	95.0	20	10	.50		12	6.0	1.0	120							P-D	Ge	75J		TO44		

# 1. JUNCTION TRANSISTORS

IN ORDER OF MAXIMUM COLLECTOR DISSIPATION,  $f_{\alpha b}$ , AND TYPE NO.



LINE No.	TYPE No.	Max. COLL. DISS. in Free Air (mw)	$f_{\alpha b}$ (Mc.)	ABSOLUTE MAX. RATINGS @ 25°C					TYPICAL PARAMETERS @ 25°C										DESCRIPTION					
				BV <sub>cb</sub> (volt)	I <sub>c</sub> (ma)	BV <sub>eb</sub> (volt)	De-rate Free Air P/cm <sup>2</sup>	Max. I <sub>cb0</sub> @ Max. V <sub>cb</sub> (μa)	BIAS		h <sub>fe</sub> or h <sub>FE</sub> - †	CIRCUIT			Max. NF (db)	Gain (db)	C <sub>ob</sub> (pf)	r <sub>bb</sub> × C <sub>ob</sub> (nsec)	t <sub>r</sub> (sec)	Type P - PNP N - NPN	Mat.	Max. Temp. (°C)	STATUS	Dwg. No.
									V <sub>cb</sub> (volt)	I <sub>e</sub> (ma)		h <sub>i</sub> (ohm)	h <sub>o</sub> (μmho)	h <sub>r</sub> (×10 <sup>-4</sup> )										
271#	2SA118	50	100	30	10			12	12	1.5∅	60								P-D	Ge	85S			
272▼#	2SA291	50	100	20	50			5.0∅	5.0∅	4.0	40								P-MD	Ge	85J		RO48	
273▼#	AF133	50	100	20	10	1.0	1.0	8.0∅	6.0∅	1.0	35								P-AD	Ge	75J		TO18	
274▼#	AFZ11	50*	100	10	10														P-†	Ge	75J	T		
275▼	GT5149	50	100	10		1.0	.83	10	.30∅	10	25†								P-MA	Ge			TO24	
276#	2SA117	50	110	30	10			12	12	1.5∅	40								P-D	Ge	85S			
277#	2SA116	50	120	30	10			12	12	1.5∅	60								P-D	Ge	85S			
278▼#	AF129	50	150	20	10	1.0	1.0	8.0∅	6.0∅	1.0	50								P-AD	Ge	75J		TO18	
279▼#	AF130	50	150	20	10	1.0	1.0	8.0∅	6.0∅	1.0	60								P-AD	Ge	75J		TO18	
280#	GFT41	50	150	8.0			1.0												P-D	Ge				
281#	AF102	50	180∅	25	10		.60	10	12∅	1.0	20Δ								P-AD	Ge	75J		TO 7	
282▼#	2SA241	50	200§	20	5.0	.40	1.0	13∅	6.0	1.0	100								P-AD	Ge	75J		TO 7	
283#	AFZ12	50	200∅	25	10		.60	10	12∅	1.0	50								P-AD	Ge	75J		TO18	
284▼#	2SA242	50	250∅	20	5.0	.40	1.0	13∅	6.0	1.0	100								P-AD	Ge	75J		TO 7	
285▼#	2SA243	50	300§	20	5.0	.40	1.0	13∅	6.0	1.0	100								P-AD	Ge	75J		TO 7	
286♦	TIK895	50	1200§	5.0	50	.50		100	.50∅	10∅	20†Δ								P-ME	Ge	100S	D	TO50	
287	2N36	50		20	8.0				6.0	1.0	45								P	Ge	75			
288	2N37	50		20	8.0				6.0	1.0	30								P	Ge	75			
289	2N38	50		20	8.0				6.0	1.0	15								P	Ge	75			
290	2N108	50		20	15				6.0	1.0									P	Ge	75			
291	2N398	50		105	100	50		14	.35∅	5.0∅	60								P-A†	Ge	55A	N	TO 5	
292#	2SA161	50		20	15			5.0	6.0	2.0	13								P-ME	Ge	85J			
293#	2SA162	50		20	15			5.0	6.0	2.0	25								P-ME	Ge	85J			
294#	2SA163	50		20	15			5.0	6.0	2.0	66								P-ME	Ge	85J			
295#	2SA164	50		20	15			5.0	6.0	2.0	13								P-ME	Ge	85J			
296#	2SA165	50		20	15			5.0	6.0	2.0	25								P-ME	Ge	85J			
297#	2SA166	50		20	15			5.0	6.0	2.0	66								P-ME	Ge	85J			
298#	2SB120	50		32	20				12	2.0∅	70								P-A	Ge	85S		RO16	
299#	2SB121	50		105	100	50		14	.35∅	5.0∅	60†								P-A†	Ge	85S		RO16	
300#	2SB168	50		9.0	100	2.5		14	3.0	1.0∅	60								P-A	Ge	85S		RO16	
301#	2SB169	50		9.0	100	2.5		14	1.0∅	50	80†								P-A	Ge	85S		RO16	
302#	2SB184	50		12	20	2.5	1.2	12	2.0∅	5.0∅	100								P-PA	Ge	85J			
303#	2T3	50		50			3.3												FET	Ge	85J			
304#	4T3	50		50			3.3												FET	Ge	85J			
305	2N165	55	5.00	1.0∅	20		1.1		5.0	1.0	72								N	Ge	75J			
306▼#	2SA255	55	5.00	12	10	.50		10	6.0	1.0	50								P-A	Ge	85J		RO18	
307#	2SC11	55	6.00	18	24	12		9.0	6.0	1.0									N-A	Ge	75J		TO 1	
308▼#	2SA254	55	10.0	12	10	.50		10	6.0	1.0	80								P-A	Ge	85J		RO18	
309#	2SA50	55	14.0	18	24	12	.90	15	6.0	1.0	70								P-A	Ge	75J		TO 1	
310▼#	2SA259	55	30.0	20	10	.50		10∅	6.0	1.0	45								P-D	Ge	85J		RO18	
311#	2SA73	55	35.0	18	5.0	.50	.90	10	6.0	1.0	49								P-D	Ge	75J		TO44	
312#	2SA236	55	35.0	18	5.0	.50	.90	12	6.0	1.0	50								P-D	Ge	75J		TO44	
313#	2SA237	55	35.0	18	5.0	.50	.90	12	6.0	1.0	50								P-D	Ge	75J		TO44	
314#	2SA72	55	40.0	18	5.0	.50	.90	10	6.0	1.0	49								P-D	Ge	75J		TO44	
315▼#	2SA258	55	40.0	20	10	.50		10∅	6.0	1.0	45								P-D	Ge	85J		RO18	

# 1. JUNCTION TRANSISTORS

IN ORDER OF MAXIMUM COLLECTOR DISSIPATION,  $f_{\alpha b}$ , AND TYPE NO.



LINE No.	TYPE No.	Max. COLL. DISS. in Free Air (mw)	$f_{\alpha b}$ (Mc.)	ABSOLUTE MAX. RATINGS @ 25°C					TYPICAL PARAMETERS @ 25°C										DESCRIPTION					
				BV <sub>cb</sub> (volt)	I <sub>c</sub> (ma)	BV <sub>eb</sub> (volt)	De-rate Free Air C/mw	Max. I <sub>cb0</sub> @ Max. V <sub>cb</sub> (μa)	BIAS		h <sub>fe</sub> or h <sub>FE</sub> - †	CIRCUIT			Max. NF (db)	Gain (db)	C <sub>ob</sub> (pf)	r <sub>bb</sub> × C <sub>ob</sub> (nsec)	t <sub>r</sub> (sec)	Type P - PNP N - NPN	Mat.	Max. Temp. (°C)	STATUS	Dwg. No.
									V <sub>cb</sub> (volt)	I <sub>e</sub> (ma)		h <sub>i</sub> (ohm)	h <sub>o</sub> (μmho)	h <sub>r</sub> (×10 <sup>-4</sup> )										
316#	2SA93	55	45.0	18	5.0	.50	.90	10	4.5	1.0	49								P-D	Ge	75J		TO44	
317#	2SA92	55	50.0	18	5.0	.50	.90	10	4.5	1.0	70								P-D	Ge	75J		TO44	
318#	2SA257	55	50.0	20	10	.50		10	6.0	1.0	60								P-D	Ge	85J		RO18	
319#	2SA60	55	55.0	18	5.0	.50	.90	10	6.0	1.0	70								P-D	Ge	75J		TO44	
320#	2SA256	55	60.0	20	10	.50		10	6.0	1.0	75								P-D	Ge	85J		RO18	
321#	2SA58	55	75.0	18	5.0	.50	.90	10	9.0	1.0	80								P-D	Ge	75J		TO44	
322#	2SA57	55	85.0	18	5.0	.50	.90	10	9.0	1.0	80								P-D	Ge	75J		TO44	
323#	2SA175	55	85.0	18	5.0	.50	.90	10	9.0	1.0	80								P-D	Ge	75J		TO44	
324#	2SA77	55	110	18	5.0	.50	.90	10	6.0	1.0	70								P-D	Ge	75J		TO44	
325#	2SA76	55	130	18	5.0	.50	.90	10	6.0	1.0	70								P-D	Ge	75J		TO44	
326	2N105	60	.75	25	15			5.0	4.0	.70	55	e 2880	16	5.5	17	33	17		P-A	Ge	71A		TO 2	
327#	989T1	60	.80	24	50			40	5.0	1.0	24	b 29	1.0	4.0		37	35		P	Ge	60A		RO26	
328#	987T1	60	1.00	24	200	5.0		40	1.0	100	36Δ	e 2.0				22	35		P	Ge	60A		RO26	
329#	990T1	60	1.00	24	50			40	5.0	1.0	36	b 29	.80	4.0		39	35		P	Ge	60A		RO26	
330#	988T1	60	1.20	24	200	5.0		40	1.0	100	54Δ	e 2.6				24	35		P	Ge	60A		RO26	
331#	991T1	60	1.20	24	50			40	5.0	1.0	54	b 29	.60	4.0		41	35		P	Ge	60A		RO26	
332#	AC122	60	1.20	30	50	12		15	6.0	2.0	90	e 2800	22	4.5	10		21		P-A	Ge	75J			
333#	941T1	60	1.50	24	200	5.0		40	1.0	100	73Δ	e 4.0				26	35		P	Ge	60A			
334#	965T1	60	1.50	24	50			40	5.0	1.0	110	e 29	.50	4.0		45	35		P	Ge	60A			
335#	992T1	60	1.50	24	50			40	5.0	1.0	75	b 29	.50	4.0		43	35		P	Ge	60A		RO26	
336#	2SA53	60	5.00	18	5.0	12	.80	15	6.0	1.0	49						11	.77	P-A	Ge	75J		TO 1	
337#	2SA52	60	7.00	18	5.0	12	.80	15	6.0	1.0	70						11	.88	P-A	Ge	75J		TO 1	
338#	2SA49	60	10.0	18	5.0	12	.80	15	6.0	1.0	70						11	.94	P-A	Ge	75J		TO 1	
339#	2SA51	60	14.0	18	5.0	12	.80	15	6.0	1.0	70						11	.88	P-A	Ge	75J		TO 1	
340#	2SA101	60	15.0	40	10	.50	.83	16	6.0	1.0	30						4.0		P-D	Ge	75J			
341#	2SA102	60	25.0	40	10	.50	.83	16	6.0	1.0	40						4.0		P-D	Ge	75J			
342#	2SA103	60	35.0	40	10	.50	.83	16	6.0	1.0	50						4.0		P-D	Ge	75J			
343#	2SA313	60	40.0	18	5.0	.50		6.0	6.0	1.0	60						2.0	.08	P-D	Ge	75J		TO 9	
344#	2SA314	60	40.0	18	5.0	.50		6.0	6.0	1.0	100						2.0	.08	P-D	Ge	75J		TO 9	
345#	2SA104	60	50.0	40	10	.50	.83	16	6.0	1.0	100						4.0		P-D	Ge	75J			
346#	2SA315	60	55.0	18	5.0	.50		6.0	6.0	1.0	110						2.0	.08	P-D	Ge	75J		TO 9	
347#	2SA316	60	75.0	18	5.0	.50		6.0	6.0	1.0	110						2.0	.08	P-D	Ge	75J		TO 9	
348	2N979	60	100Δ§	20	100	2.0	1.25	3.0	.50	40	50†						1.5		PMD†	Ge	100S		TO18	
349	2N1752	60	106*	12	50	2.0	1.3	10	6.0	1.0	250	b 27	.15				1.0		P-MD	Ge	100A		TO 9	
350	2N1499A	60	110§	20	50	2.0	1.3	3.0	.50	40	50†						1.5		P-MD	Ge	100S	A	TO 9	
351	2N1748	60	115§	25	50	1.0	1.3	10	6.0	1.0	45	b 26	.13				1.3		P-MD	Ge	100A		TO 9	
352	2N1864	60	125*	20	50	.50	1.3	10	6.0	1.0	70	b 27	.15				1.5	.07	P-MD	Ge	100A		TO 9	
353	2N1748A	60	132§	25	50	1.0	1.3	10	6.0	1.0	70	b 26	.13				1.3		P-MD	Ge	100A		TO 9	
354	2N1726	60	150*	20	50	1.0	1.3		6.0	1.0	120†	b 27	.15				33	1.5	P-MD	Ge	100		TO 9	
355	2N1727	60	150*	20	50	.50	1.3		6.0	1.0	150†	b 27	.15				35	1.5	P-MD	Ge	100		TO 9	
356	2N1728	60	150*	20	50	.50	1.3		6.0	1.0	100†	b 27	.15				40	1.5	P-MD	Ge	100		TO 9	
357	2N1788	60	150*	35	50	1.0	1.3	10	12	1.0	60†	b 27	.15				1.5	.07	P-MD	Ge	100A		TO 9	
358	2N1789	60	150*	35	50	.50	1.3	10	12	1.0	60†	b 27	.15				1.5	.07	P-MD	Ge	100		TO 9	
359	2N1790	60	150*	35	50	.50	1.3	7.0	12	1.0	60†	b 27	.15				1.5	.07	P-MD	Ge	100A		TO 9	
360	2N501	60	175§	15	50	2.0	2.5	5.0	.50	10	70†						1.8		PMD†	Ge	100		TO 1	



# 1. JUNCTION TRANSISTORS

IN ORDER OF MAXIMUM COLLECTOR DISSIPATION,  $f_{cb}$ , AND TYPE NO.



LINE No.	TYPE No.	Max. COLL. DISS. in Free Air (mw)	$f_{cb}$ (Mc.)	ABSOLUTE MAX. RATINGS @ 25°C					TYPICAL PARAMETERS @ 25°C										DESCRIPTION					
				BV <sub>cb</sub> (volt)	I <sub>c</sub> (ma)	BV <sub>eb</sub> (volt)	De-rate Free Air P/cm <sup>2</sup>	Max. I <sub>cb0</sub> @ Max. V <sub>cb</sub> (μA)	BIAS		h <sub>fe</sub> or hFE - †	CIRCUIT			Max. NF (db)	Gain (db)	C <sub>qb</sub> (pf)	r <sub>bb</sub> × C <sub>ob</sub> (nsec)	t <sub>r</sub> (sec)	Type P - NPN N - NPN	Mat.	Max. Temp. (°C)	STATUS	Dwg. No.
									V <sub>cb</sub> (volt)	I <sub>e</sub> (ma)		h <sub>i</sub> (ohm)	h <sub>o</sub> (μmho)	h <sub>r</sub> (×10 <sup>-4</sup> )										
361▼	2N501/18	60	175\$	15	50	2.0	2.5	5.0	.50∅	10∅	70†						1.8		13n	P-MD†	Ge	100J		TO18
362	2N501A	60	175\$	15	50	2.0	1.3	5.0	.50∅	10∅	95†						1.1		10n	P-MD	Ge	100J	M	TO 1
363	2N1500	60	175\$	15	50	2.0	1.3	1.5	.50∅	10∅	70†						1.5		13n	PMD†	Ge	100S	A	TO 9
364▼	2N1500/18	60	175\$	15	50	2.0	1.3	1.5	.50∅	10∅	70†						1.5		13n	PMD†	Ge	100S		TO18
365	2N1747	60	200∅	20	50	.50	1.3	10	6.0∅	1.0∅	60†						1.8			P-MD	Ge	100A		TO 9
366	2N1865	60	200∅	20	50	.50	1.3	10	6.0∅	1.0∅	25Δ						1.8			P-MD	Ge	100A		TO 9
367	2N1866	60	200∅	35	50	.50	1.3	10	12∅	1.0∅	25Δ						1.8			P-MD	Ge	100A		TO 9
368	2N1867	60	200∅	35	50	.50	1.3	10	12∅	1.0∅	10Δ						1.8			P-MD	Ge	100A		TO 9
369	2N1746	60	235*	20	50	1.0	1.3	10	6.0∅	1.0∅	60†						1.8			P-MD	Ge	100A		TO 9
370	2N502	60	260\$	20	50	.50	1.6	100	10∅	2.0	45				12		1.0	.02		P-MD	Ge	85J		TO 9
371	2N984	60	350\$	15	100	2.0	1.255	0∅	.50∅	10∅	70†						1.9		11n	PMD†	Ge	100S		TO18
372	2N2170	60	350\$	15	100	2.0	1.255	0∅	.50∅	10∅	70†						1.9		11n	P-MD†	Ge	100S		TO 9
373#	2G101	60	450\$	15	10	.50	1.0	20	6.0∅	2.0∅	20				15					P-ME	Ge	85J		
374#	2G102	60	450\$	15	10	.50	1.0	20	6.0∅	2.0∅	20				15					P-ME	Ge	85J		
375	2N846	60	450\$	15	50		1.3	25	.50∅	50∅	35†						1.9		13n	P-MD	Ge	100S		TO18
376	2N779A	60	450\$	15	100		1.3	3.0	.50∅	50	60†						1.9		13n	P-MD	Ge	100		TO18
377	2N846A	60	450\$	15	100		1.3	3.0	.50∅	50	35†						1.9		13n	P-MD	Ge	100		TO18
378	2N982	60	450\$	20	100	2.0	1.253	0∅	.50∅	10∅	100†						1.9		11n	PMD†	Ge	100S		TO18
379	2N983	60	450\$	15	100	2.0	1.253	0∅	.50∅	10∅	85†						1.9		11n	PMD†	Ge	100S		TO18
380	2N2168	60	450\$	20	100	2.0	1.253	0∅	.50∅	10∅	100†						1.9		11n	PMD†	Ge	100S		TO 9
381	2N2169	60	450\$	15	100	2.0	1.253	0∅	.50∅	10∅	85†						1.9		11n	PMD†	Ge	100S		TO 9
382	2N779	60	480\$	15	50		1.3	25	.50∅	10∅	90†						1.9		13n	P-MD	Ge	100		TO18
383	2N1745	60	850∅	20	50	.50	1.3	10	10∅	2.0∅	33†						1.5			P-MD	Ge	100A		TO 9
384	2N1868	60	850∅	20	50	.50	1.3	10	10∅	2.0∅	33†						1.5			P-MD	Ge	100A		TO 9
385	2N1742	60	1200∅	20	50	.50	1.3	10	10∅	2.0∅	33†						1.5			P-MD	Ge	100A		TO 9
386	2N1743	60	1200∅	20	50	.50	1.3	10	10∅	2.0∅	33†						1.5			P-MD	Ge	100A		TO 9
387	2N1744	60	1200∅	20	50	.20	1.3	10	10∅	2.0∅	33†						1.5			P-MD	Ge	100A		TO 9
388▼	T2028	60	1600*	20		.50	1.3	10∅	10∅	2.0∅	33†				4.5	18				P-MD	Ge	100S	T	RO49
389▼	T2029	60	1600*	20		.50	1.3	10∅	10∅	2.0∅	33†				9.0	19				P-MD	Ge	100S	T	RO49
390▼	T2030	60	1600*	20		.20	1.3	10∅	10∅	2.0∅	33†									P-MD	Ge	100S	T	RO49
391	2N1158	60		20	100	.50	1.3	10	3.0	50	6.0Δ									P-MD	Ge	100S		TO 9
392#	2SB257	60		18	5.0	12		10	6.0∅	1.0∅	125†	e 2500								P-A	Ge	75J		TO 1
393#	GTA1	63	3.00Δ	15		10	.80	20	6.0	.50	40									P-A	Ge	75J		
394#	GTA2	63	7.00Δ	15		10	.80	20	6.0	.50	100									P-A	Ge	65J		
395▼#	AF124	63	75.0∅	20	10		.80	8.0	6.0∅	1.0∅	150				8.0					P-AD	Ge	75J		TO18
396▼#	AF125	63	75.0∅	20	10		.80	8.0	6.0∅	1.0∅	150				9.5					P-AD	Ge	75J		TO18
397▼#	AF126	63	75.0∅	20	10		.80	8.0	6.0∅	1.0∅	150				3.0					P-AD	Ge	75J		TO18
398▼#	AF127	63	75.0∅	20	10		.80	8.0	6.0∅	1.0∅	150				1.5					P-AD	Ge	75J		TO18
399#	2SB290	65	1.00	18	40	12		4.0	6.0∅	1.0∅	125	2500					9.5			P-A	Ge	75J		TO 9
400#	2SA304	65	4.50	18	40	12		4.0	6.0	1.0	70						11	.88		P-A	Ge	75J		TO 9
401#	OC390	65*	4.50	15	40		.46	10∅	5.0∅	.50	40	e 800								P-A	Ge	75J		RO42
402	2N78	65	5.00Δ	20	25	5.0		3.0	1.0	1.0	90									N-G	Ge	95	F	OV 5
403	2N448	65	5.00	15∅	20			5.0		1.0∅	8.0†									N	Ge	85J		
404	2N1198	65	5.00Δ	25∅	75					8.0∅	17†									N	Ge	85J		
405	2N292	65	6.00	15	20		.91	5.0	5.0	1.0	25	b								N-G	Ge	85S		OV 5

# 1. JUNCTION TRANSISTORS

IN ORDER OF MAXIMUM COLLECTOR DISSIPATION,  $f_{\alpha b}$ , AND TYPE NO.



LINE No.	TYPE No.	Max. COLL. DISS. in Free Air (mw)	$f_{\alpha b}$ (Mc.)	ABSOLUTE MAX. RATINGS @ 25°C					TYPICAL PARAMETERS @ 25°C										DESCRIPTION					
				BV <sub>cb</sub> (volt)	I <sub>c</sub> (ma)	BV <sub>eb</sub> (volt)	De-rate Free Air C/mw	Max. I <sub>cb0</sub> @ Max. V <sub>cb</sub> (μa)	BIAS		h <sub>fe</sub> or hFE - †	CIRCUIT			Max. NF (db)	Gain (db)	C <sub>ob</sub> (pf)	r <sub>bb</sub> × C <sub>ob</sub> (nsec)	t <sub>r</sub> (sec)	Type P - NPN N - NPN	Mat.	Max. Temp. (°C)	STATUS	Dwg. No.
									V <sub>cb</sub> (volt)	I <sub>e</sub> (ma)		h <sub>i</sub> (ohm)	h <sub>o</sub> (μmho)	h <sub>r</sub> (×10 <sup>-4</sup> )										
406	2N293	65	7.00	15	20		.91	5.0	5.0	1.0	25	b							N-G	Ge	85S	T	OV 5	
407#	OC400	65*	7.00	15	40		.46	10∅	5.0∅	.50	75	e	1500						P-A	Ge	75J		RO42	
408	2N164A	65	8.00	1.0∅	20		1.1		5.0	1.0	40								N	Ge	85J			
409	2N168A	65	8.00	15	20		.91	5.0	5.0∅	1.0	40								N-G	Ge	85S		OV 5	
410	2N449	65	8.00	15∅	20			5.0		1.0∅	72†								N	Ge	85J			
411	2N1086	65	8.00Δ	9.0∅	20					1.0∅	17†								N	Ge	85J			
412	2N1086A	65	8.00Δ	9.0∅	20					1.0∅	17†								N	Ge	85J			
413	2N1087	65	8.00Δ	9.0∅	20					1.0∅	17†								N	Ge	85J			
414	2N1121	65	8.00	15∅	20			5.0		1.0∅	34†								N	Ge	85J			
415	2N78A	65	9.00	20	20	5.0							55	.20	2.0	12	31	3.0	N-G	Ge	85	F		
416	2N167	65	9.00	30	75	5.0	.91	1.5	5.0	1.0	30	b	55	.20	1.5				N	Ge	85S	F	OV 5	
417	2N169	65	9.00	15	20		.91	5.0	5.0∅	1.0	72								N-G	Ge	85J		OV 5	
418	2N169A	65	9.00	25	20		.91	5.0	5.0∅	1.0	72								N-G	Ge	85J		OV 5	
419#	2SA305	65	10.0	18	40	12		4.0	6.0	1.0	70								P-A	Ge	75J		TO 9	
420#	OC410	65*	12.0	15	40		.46	10∅	5.0∅	.50	110	e	2500						P-A	Ge	75J		RO42	
421†	2N145	65		20	5.0		.70	3.0	9.0	1.0∅									N-G	Ge	75J		OV 9	
422†	2N146	65		20	5.0		.70	3.0	9.0	1.0∅									N-G	Ge	75J		OV 9	
423†	2N147	65		20	5.0		.70	3.0	9.0	1.0∅									N-G	Ge	75J		OV 9	
424†	2N172	65		16	5.0		.70	3.0	9.0	1.0∅									N-G	Ge	75J		OV 9	
425†	2N253	65		12	5.0			3.0											N	Ge			OV 9	
426†	2N254	65		20	5.0			3.0											N	Ge			OV 9	
427	2N773	65§		20	100	2.0	.83		10∅	2.0∅	11								N-D	Si	150		TO18	
428	2N1267	65§		20	100	2.0	1.3	.70	10∅	2.0∅	11								N-D	Si	150S		TO 9	
429#	2SA277	65		18	40	12		10	1.0∅	24∅	50†								P-A†	Ge	75J		TO 9	
430#	2SA278	65		18	40	12		10	1.0∅	24∅	100†								P-A†	Ge	75J		TO 9	
431▼#	2SB261	65		20	30	2.5		12∅	6.0	1.0	45	e	2000						P-A	Ge	85J		RO18	
432▼#	2SB262	65		20	30	2.5		12∅	9.0∅	1.5∅	60†								P-A	Ge	85J		RO18	
433#	2SC13	65		18	40	12		13	1.0∅	24∅	50†								N-A†	Ge	75J		TO 9	
434#	2SC14	65		18	40	12		13	1.0∅	24∅	100†								N-A†	Ge	75J		TO 9	
435#	OC303	67*	.70	15∅	50		.45	10∅	5.0∅	1.0	26	e	1000						P-A	Ge	75J		RO41	
436#	OC304/1	67*	.80	15∅	50		.45	10∅	5.0∅	1.0	40	e	1200						P-A	Ge	75J		RO41	
437#	OC306/1	67*	.80	15∅	50		.45	10∅	5.0∅	1.0	40	e	1200						P-A	Ge	75J		RO41	
438#	OC304/2	67*	.90	15∅	50		.45	10∅	5.0∅	1.0	65	e	1650						P-A	Ge	75J		RO41	
439#	OC306/2	67*	.90	15∅	50		.45	10∅	5.0∅	1.0	65	e	1650						P-A	Ge	75J		RO41	
440#	OC304/3	67*	1.10	15∅	50		.45	10∅	5.0∅	1.0	100	e	2800						P-A	Ge	75J		RO41	
441#	OC306/3	67*	1.10	15∅	50		.45	10∅	5.0∅	1.0	100	e	2800						P-A	Ge	75J		RO41	
442#	OC305/1	67*	1.50	8.0∅	50		.45	10∅	5.0∅	1.0	150	e	4500						P-A	Ge	75J		RO41	
443#	OC305/2	67*	2.10	8.0∅	50		.45	10∅	5.0∅	1.0	230	e	6800						P-A	Ge	75J		RO41	
444#	2SB110	70	1.00	25	50	10	.70	10∅	6.0∅	1.0	30	b	30	.50	2.5	15	32	15	P-A	Ge	75J		TO 1	
445#	2SB111	70	1.00	25	50	10	.70	10∅	6.0∅	1.0	45	b	30	.50	2.5	15	35	15	P-A	Ge	75J		TO 1	
446#	2SB112	70	1.00	25	50	10	.70	10∅	6.0∅	1.0	60	b	30	.50	2.5	15	37	15	P-A	Ge	75J		TO 1	
447#	2SB113	70	1.00	25	50	10	.70	10∅	6.0∅	1.0	80	b	30	.50	2.5	15	38	15	P-A	Ge	75J		TO 1	
448#	2SB264	70	1.00	30	50			5.0∅	1.5	.50	70	b	57	1.5	4.0	5.0			P-A	Ge	75J		TO 1	
449#	2SB114	70	1.50	25	50	10	.70	10∅	1.0∅	20∅	65†								P-A	Ge	75J		TO 1	
450#	2SB115	70	1.50	25	50	10	.70	10∅	1.0∅	20∅	85†								P-A	Ge	75J		TO 1	

# 1. JUNCTION TRANSISTORS

IN ORDER OF MAXIMUM COLLECTOR DISSIPATION,  $f_{\alpha b}$ , AND TYPE NO.



LINE No.	TYPE No.	Max. COLL. DISS. in Free Air (mw)	$f_{\alpha b}$ (Mc.)	ABSOLUTE MAX. RATINGS @ 25°C						TYPICAL PARAMETERS @ 25°C										DESCRIPTION						
				BV <sub>cb</sub> (volt)	I <sub>c</sub> (ma)	BV <sub>eb</sub> (volt)	De-rate Free Air C/mw	Max. Icbo @ Max. V <sub>cb</sub> (μa)	BIAS		h <sub>fe</sub> or hFE - †	CIRCUIT			Max. NF (db)	Gain (db)	C <sub>ob</sub> (pf)	r <sub>bb</sub> × C <sub>ob</sub> (nsec)	t <sub>r</sub> (sec)	Type P - PNP N - NPN	Mat.	Max. Temp. (°C)	S T A T U S	Dwg. No.		
									V <sub>cb</sub> (volt)	I <sub>e</sub> (ma)		h <sub>i</sub> (ohm)	h <sub>o</sub> (μmho)	h <sub>r</sub> (×10 <sup>-4</sup> )												
451#	2SB116	70	1.50	25	50	10	.70	100	1.00	200	110†											P-A	Ge	75J		TO 1
452#	2SB117	70	1.50	25	50	10	.70	100	1.00	200	140†											P-A	Ge	75J		TO 1
453	2N206	75	.78	30	50	12	.30	10	5.0	1.0	47	b	33	.55	3.2							P-A	Ge	85S	F	
454	2N189	75	.80	250	50			16	5.0	1.0	24	b	29	1.0	4.0	15						P-A	Ge	85S		RO32
455	2N190	75	1.00	250	50			16	5.0	1.0	36	b	29	.80	4.0	15						P-A	Ge	85S		RO32
456	2N191	75	1.20	250	50			16	5.0	1.0	54	b	29	.60	4.0	15						P-A	Ge	85S		RO32
457	CK261	75	1.20	35	100	20	.80	10	6.0	1.0	75	e		36	7.0							N-A	Ge	85J		u 8
458	CK262	75	1.20	35	100	20	.80	10	6.0	1.0	75	e		36	7.0							N-A	Ge	85J		u 8
459	2N192	75	1.50	250	50			16	5.0	1.0	75	b	29	.50	4.0	15						P-A	Ge	85S		RO32
460	2N265	75	1.50	250	50		.50	16	5.0	1.0	110	b	29	.50	4.0	15						P-A	Ge	85S		RO32
461	2N817	75	2.50Δ	30	400	25	.80	100	1.00	500	25											N-FAΔ	Ge	85J		u 8
462	2N818	75	2.50Δ	30	400	25	.80	100	1.00	500	25											N-FAΔ	Ge	85J		u 9
463#	NKT123	75	3.00	20	500		.66	40	4.5	500	80†											P	Ge	75		TO 5
464#	NKT126	75	3.00	20	500		.66	40	4.5	25	120†											P	Ge	75		TO 5
465#	NKT129	75	3.00	20	500		.66	40	4.5	1.0	80†											P	Ge	75		TO 5
466#	V6/2R	75	3.00	6.0	30	6.0	.67		4.5	1.0	30											P-A	Ge	75J		TO22
467#	V6/2RJ	75	3.00	6.0	30		.40		4.5	1.0	30											P-A	Ge	75J		TO 5
468	2N167A	75	5.00	30	25	5.0		1.5	1.0	8.0	30											N-G	Ge		F	
469	2N819	75	5.00Δ	30	400	25	.80	100	1.00	500	30											N-FAΔ	Ge	85J		u 8
470	2N820	75	5.00Δ	30	400	25	.80	100	1.00	500	30											N-FAΔ	Ge	85J		u 9
471#	V6/4R	75	5.00	6.0	30	6.0	.67		4.5	1.0	50											P-A	Ge	75J		TO22
472	CK83	75	5.50	12	20		.80	10	6.00	1.0	60											P-FA	Ge	85J		u 11
473#	V6/4RJ	75	5.50	6.0	30		.40		4.5	1.0	50											P-A	Ge	75J		TO 5
474	2N801	75	6.00	30	400	20	.80	25	.250	1.0Δ	60											PFA†	Ge	85J		u 8
475	2N802	75	6.00	30	400	20	.80	25	.250	1.0Δ	60											PFA†	Ge	85J		u 9
476#	GET871	75	6.00	15	150	10	.65	5.0	1.00	250	45†											P-A	Ge	85J		RO11
477#	GET873	75	6.00	15	10		.65	5.0	6.0	1.0	50	b	27	.60	6.0	10						P-A	Ge	85J		RO11
478	2N809	75	7.00	30	200	20	.80	5.00	6.0	1.0	60	b	25	.62	5.0							P-FAΔ	Ge	85J		u 8
479	2N810	75	7.00	30	200	20	.80	5.00	6.0	1.0	60	b	25	.62	5.0							P-FAΔ	Ge	85J		u 9
480#	NKT122	75	7.00	20	500		.66	40	4.5	500	80†											P	Ge	75		TO 5
481#	NKT125	75	7.00	20	500		.66	40	4.5	25	120†											P	Ge	75		TO 5
482#	NKT128	75	7.00	20	500		.66	40	4.5	1.0	80†											P	Ge	75		TO 5
483#	2G301	75	7.20	15	50	10	.80	10	6.0	1.0	60											P-A	Ge	85J		
484#	2G303	75	7.20	15	100	10	.80	10	6.0	1.0	40											P-A	Ge	85J		
485#	GET870	75	7.50	15	10	10	.65	5.0	6.0	1.0	75											P-A	Ge	85J	T	RO11
486	2N815	75	8.00	25	200	15	.80	10	.750	2000	80†											N-FAΔ	Ge	100J		u 8
487	2N816	75	8.00	25	200	15	.80	10	.750	2000	80†											N-FAΔ	Ge	100J		u 9
488	2N825	75	8.00	30	200	20	.80	6.00	1.00	100	150Z	b			100							PFA†	Ge	85J		u 8
489	2N826	75	8.00	30	200	20	.80	6.00	1.00	100	150Z	b			100							PFA†	Ge	85J		u 9
490	2N1217	75	9.00	20	25	5.0	1.3	1.5			60†											N	Ge	85S		
491	2N1694	75	9.00§	20	25	10	1.3	1.50			30†											N†	Ge	85S		TO 5
492	2N811	75	10.0	30	200	20	.80	5.00	6.00		80	b	25	.65	7.0							P-FAΔ	Ge	85J		u 8
493	2N812	75	10.0	30	200	20	.80	5.00	6.00		80	b	25	.65	7.0							P-FAΔ	Ge	85J		u 9
494	2N821	75	10.0Δ	30	400	25	.80	100	1.00	500	70†											NFA†	Ge	85J		u 8
495	2N822	75	10.0Δ	30	400	25	.80	100	1.00	500	70†											NFA†	Ge	85J		u 9

# 1. JUNCTION TRANSISTORS

IN ORDER OF MAXIMUM COLLECTOR DISSIPATION,  $f_{\alpha b}$ , AND TYPE NO.



LINE No.	TYPE No.	Max. COLL. DISS. in Free Air (mw)	$f_{\alpha b}$ (Mc.)	ABSOLUTE MAX. RATINGS @ 25°C					TYPICAL PARAMETERS @ 25°C										DESCRIPTION						
				$V_{cb}$ (volt)	$I_c$ (ma)	$V_{eb}$ (volt)	De-rate Free Air C/mw	Max. $I_{cbo}$ @ Max. $V_{cb}$ ( $\mu$ a)	BIAS		$h_{fe}$ or $h_{FE} - \dagger$	CIRCUIT			Max. NF (db)	Gain (db)	$C_{ob}$ (pf)	$r_{bb} \times C_{ob}$ (nsec)	$t_r$ (sec)	Type P - PNP N - NPN	Mat.	Max. Temp. (°C)	S T A T U S	Dwg. No.	
									$V_{cb}$ (volt)	$I_e$ (ma)		$h_i$ (ohm)	$h_o$ ( $\mu$ mho)	$h_r$ ( $\times 10^{-4}$ )											
496#	V6/8R	75	10.0	6.0	30	6.0	.67		4.5	1.0	80						25			P-A	Ge	75J		TO22	
497#	V6/8RJ	75	10.0	6.0	30		.40		4.5	1.0	80						25			P-A	Ge	75J		TO 5	
498	2N803	75	11.0	30	400	20	.80	25	.25 $\emptyset$	1.0 $\Delta$	80						12		.40u	PFA $\dagger$	Ge	85J		u 8	
499	2N804	75	11.0	30	400	20	.80	25	.25 $\emptyset$	1.0 $\Delta$	80						12		.40u	PFA $\dagger$	Ge	85J		u 9	
500	2N799	75	12.0	25	100	12	.80	5.0 $\emptyset$	.15 $\emptyset$	.40 $\Delta$	60 $\dagger$						12			PFA $\dagger$	Ge	85J		u 8	
501	2N800	75	12.0	25	100	12	.80	5.0 $\emptyset$	.15 $\emptyset$	.40 $\Delta$	60 $\dagger$						12			PFA $\dagger$	Ge	85J		u 9	
502	2N823	75	12.0	25	400	12	.80	5.0 $\emptyset$	.25 $\emptyset$	20 $\emptyset$	40						20			NFA $\dagger$	Ge	85J		u 8	
503	2N824	75	12.0	25	400	12	.80	5.0 $\emptyset$	.25 $\emptyset$	20 $\emptyset$	40						20			NFA $\dagger$	Ge	85J		u 9	
504	CK86	75	12.0	12	10		.80	10	6.0 $\emptyset$	1.0	200						10			P-FA	Ge	85J		u 11	
505#	2G302	75	14.4	15	50	10	.80	10	6.0	1.0	130						8.5	.76	30n	P-A	Ge	85J			
506#	2G304	75	14.4	15	100	10	.80	10	6.0	1.0	50						8.5	.76	30n	P-A	Ge	85J			
507#	GET872	75	15.0	15	150	10	.65	5.0	1.0 $\emptyset$	25 $\emptyset$	65 $\dagger$							.14u	P-A	Ge	85J		RO11		
508#	GET874	75	15.0	15	10		.65	5.0	6.0	1.0	70	b	27	.65	6.0	10	40	8.5	.75	P-A	Ge	85J		RO11	
509#	NKT121	75	15.0	20	500		.66	40	4.5	500	80 $\dagger$						20		.50u	P	Ge	75		TO 5	
510#	NKT124	75	15.0	20	500		.66	40	4.5	25	120 $\dagger$						20		.50u	P	Ge	75		TO 5	
511#	NKT127	75	15.0	20	500		.66	40	4.5	1.0	80 $\dagger$						20		.50u	P	Ge	75		TO 5	
512	2N805	75	17.0	30	400	20	.80	25	.25 $\emptyset$	1.0 $\Delta$	80						12		.40u	PFA $\dagger$	Ge	85J		u 8	
513	2N806	75	17.0	30	400	20	.80	25	.25 $\emptyset$	1.0 $\Delta$	80						12		.40u	PFA $\dagger$	Ge	85J		u 9	
514	2N807	75	18.0	25	100	12	.80	5.0 $\emptyset$	.20 $\emptyset$	20 $\emptyset$	60									PFA $\dagger$	Ge	85J		u 8	
515	2N808	75	18.0	25	100	12	.80	5.0 $\emptyset$	.20 $\emptyset$	20 $\emptyset$	60									PFA $\dagger$	Ge	85J		u 9	
516	2N813	75	20.0	30	200	20	.80	5.0 $\emptyset$	6.0 $\emptyset$		140	b	26	.77	11		27	12		P-FA	Ge	85J		u 8	
517	2N814	75	20.0	30	200	20	.80	5.0 $\emptyset$	6.0 $\emptyset$		140	b	26	.77	11		27	12		P-FA	Ge	85J		u 9	
518#	GET875	75	20.0	15	150	10	.65	5.0	1.0 $\emptyset$	25 $\emptyset$	90 $\dagger$							.12u	P-A	Ge	85J		RO11		
519#	GET931	75	28.0	20	100	2.0	.65	50	6.0 $\emptyset$	1.0 $\emptyset$	20						3.0	.15		P	Ge	75J	T		
520#	GET691	75	30.0	20	10	1.0	.65	30	6.0 $\emptyset$	1.0 $\emptyset$	60						20	40	2.0	.04	P-D	Ge	75J		RO11
521#	GET692	75	40.0	20	10	1.0	.65	30	6.0 $\emptyset$	1.0 $\emptyset$	60						20	40	2.0	.03	P-D	Ge	75J		RO11
522#	GET693	75	50.0	20	10	1.0	.65	30	6.0 $\emptyset$	1.0 $\emptyset$	60						20	40	2.0	.02	P-D	Ge	75J		RO11
523	2N1749	75	115 $\S$	40	50	1.0	1.0	10	6.0 $\emptyset$	1.0 $\emptyset$	45	b	26	.13				1.3		P-MD	Ge	100A		TO 9	
524	2N502A	75	220 $\S$	30	50	.50	1.0	5.0	10 $\emptyset$	2.0	65						7.0	12	1.0	.014	P-MD	Ge	100J	A	TO 9
525	2N700A	75	300	25			1.0		6.0	2.0							29			P	Ge	100J	A	TO17	
526#	2SA239	75	300	20	5.0	.20	.80		6.0	2.0	10						24	1.5	.05	P-ME	Ge	85J		TO17	
527#	2SA240	75	300	20	5.0	.20	.80		6.0	2.0	20						24	1.5	.05	P-ME	Ge	85J		TO17	
528	2N695	75	350 $\S$	15	50	3.5	1.0		.30 $\emptyset$	10 $\emptyset$	40 $\dagger$							3.5		P-ME $\Delta$	Ge	100J	N	TO17	
529 $\nabla$ #	2SA54	75	400 $\S$	20	10	.20		10 $\emptyset$	6.0 $\emptyset$	2.0	12						12	1.2		P-ME	Ge	100J		TO17	
530	2N700	75	500 $\S$	25	50	.20	1.0		6.0 $\emptyset$	2.0	10	b	17				10	23	1.1	.06	P-ME	Ge	100J		TO17
531	2N1407	75	650*	30	50	.50	1.0		6.0 $\emptyset$	2.0 $\emptyset$	7.5db						10		2.0	25	P-ME	Ge	100J		TO17
532	2N1406	75	750*	30	50	.50	1.0		6.0 $\emptyset$	2.0 $\emptyset$	10db						8.0		2.0	25	P-ME	Ge	100J		TO17
533#	2SA229	75	750	20	5.0	.20	.80		6.0	2.0	10							19	1.0	.05	P-ME	Ge	85J		TO17
534#	2SA230	75	750	20	5.0	.20	.80		6.0	2.0	10							23	1.0	.05	P-ME	Ge	85J		TO17
535	2N1405	75	1100*	30	50	.50	1.0		6.0 $\emptyset$	2.0 $\emptyset$	10db						5.0		2.0	12	P-ME	Ge	100J		TO17
536	2N701	75		30		1.0					25						12	3.0	1.2		M-E $\Delta$	Ge	100J		
537	2N1158A	75		20	100	.50	1.0	5.0	10	3.0	50								.05	P-MD	Ge	100A	A	TO 9	
538	2N1213	75		25	100	1.0		5.0	12	10										P- $\dagger$	Ge	85A			
539	2N1214	75		25	100	1.0		5.0	12	10										P- $\dagger$	Ge	85A			
540	2N1215	75		25	100	1.0		5.0	12	10										P- $\dagger$	Ge	85A			



# 1. JUNCTION TRANSISTORS

IN ORDER OF MAXIMUM COLLECTOR DISSIPATION,  $f_{\alpha b}$ , AND TYPE NO.



LINE No.	TYPE No.	Max. COLL. DISS. in Free Air (mw)	$f_{\alpha b}$ (Mc.)	ABSOLUTE MAX. RATINGS @ 25°C					TYPICAL PARAMETERS @ 25°C										DESCRIPTION					
				BV <sub>cb</sub> (volt)	I <sub>c</sub> (ma)	BV <sub>eb</sub> (volt)	De-rate Free Air °C/mw	Max. I <sub>cb0</sub> @ Max. V <sub>cb</sub> (μa)	BIAS		h <sub>fe</sub> or hFE - †	CIRCUIT			Max. NF (db)	Gain (db)	C <sub>ob</sub> (pf)	r <sub>bb</sub> × C <sub>ob</sub> (nsec)	t <sub>r</sub> (sec)	Type P - PNP N - NPN	Mat.	Max. Temp. (°C)	STATUS	Dwg. No.
									V <sub>cb</sub> (volt)	I <sub>e</sub> (ma)		h <sub>i</sub> (ohm)	h <sub>o</sub> (μmho)	h <sub>r</sub> (×10 <sup>-4</sup> )										
541	2N1216	75		25	100	1.0		5.0	12	10								20u	P-†	Ge	85A			
542	2N1510	75		75	20	8.0	1.3	5.0											N	Ge	85S		OV 5	
543#	2SA276	75		15	20	2.0		5.0∅	.50∅	10∅									P-ME†	Ge	75J		TO17	
544#	V10/1S	75		10	500	20	.40		.35	400									P-A	Ge	75J			
545#	V10/1SJ	75		10	500		.40		.35	400									P-A	Ge	75J		TO 5	
546#	V10/2S	75		10	500	20	.40		.35	400									P-A	Ge	75J			
547#	V10/2SJ	75		10	500		.40		.35	400									P-A	Ge	75J		TO 5	
548#	GFT20/15	80	.60	15	50	10	.60	20	3.0	1.0				10	35				P-A	Ge	75J		TO 5	
549#	GFT20/30	80	.60	30	50	10	.60	20	3.0	1.0				10	35				P-AΔ	Ge	75J		TO 5	
550#	2SD66	80	.80	25	50			15	1.0∅	10									N-A	Ge	85J		RO14	
551	CK64	80	.80	29∅	100	12	.75	5.0	6.0	1.0		e 900	18	.35	22	40			P-A	Ge	85J		u 11	
552	CK64A	80	.80	45			.75		6.0∅	1.0∅					12	40			P-A	Ge	85A		u 12	
553	CK64B	80	.80	45			.75		6.0∅	1.0∅					12	40			P-A	Ge	85A		u 8	
554	CK64C	80	.80	45			.75		6.0∅	1.0∅					12	40			P-A	Ge	85A		u 9	
555#	GFT25/15	80	.85	15	50	10	.60	20	3.0	2.0				10	40				P-A	Ge	75J		TO 5	
556#	GFT25/30	80	.85	30	50	10	.60	20	3.0	2.0				10	40				P-AΔ	Ge	75J		TO 5	
557	2N1266	80	1.00	10∅											20				P	Ge			TO22	
558#	2SB40	80	1.00	40	100	12	.60		1.0	100									P-A	Ge	75J		TO 1	
559#	2SB46	80	1.00	25	50	12	.60	14	6.0	1.0		b 30	.20	2.5			35		P-A	Ge	75J		TO 1	
560#	2SB47	80	1.00	25	50	12	.60	14	6.0	1.0		b 30	.20	2.5			35		P-A	Ge	75J		TO 1	
561#	2SD65	80	1.00	25	50			15	1.0∅	10		e 28	.25	1.2	15		35		N-A	Ge	85J		RO14	
562	CK65	80	1.00	24∅	100	12	.75	5.0	6.0	1.0		e 1800	25	.50	22	42			P-A	Ge	85J		u 11	
563	CK65A	80	1.00	45			.75		6.0∅	1.0∅					12	42			P-A	Ge	85A		u 12	
564	CK65B	80	1.00	45			.75		6.0∅	1.0∅					12	42			P-A	Ge	85A		u 8	
565	CK65C	80	1.00	45			.75		6.0∅	1.0∅					12	42			P-A	Ge	85A		u 9	
566#	GFT21/15	80	1.10	15	50	10	.60	20	3.0	3.0					10	44			P-A	Ge	75J		TO 5	
567#	GFT21/30	80	1.10	30	50	10	.60	20	3.0	3.0					10	44			P-AΔ	Ge	75J		TO 5	
568	CK22	80	1.20	20∅	100	12	.75	5.0	6.0	1.0		e 3600	36	.70	7.0	44			P-A	Ge	85J		u 11	
569	CK22A	80	1.20	35			.75		6.0∅	1.0∅					9.0	44			P-A	Ge	85A		u 12	
570	CK22B	80	1.20	35			.75		6.0∅	1.0∅					6.5	44			P-A	Ge	85A		u 8	
571	CK22C	80	1.20	35			.75		6.0∅	1.0∅					6.5	44			P-A	Ge	85A		u 9	
572	CK66	80	1.20	20∅	100	12	.75	5.0	6.0	1.0		e 3600	36	.70	22	44			P-A	Ge	85J		u 11	
573	CK66A	80	1.20	35			.75		6.0∅	1.0∅					12	44			P-A	Ge	85A		u 12	
574	CK66B	80	1.20	35			.75		6.0∅	1.0∅					12	44			P-A	Ge	85A		u 8	
575	CK66C	80	1.20	35			.75		6.0∅	1.0∅					12	44			P-A	Ge	85A		u 9	
576	CK67	80	1.20	15∅	400	12	.75		6.0	1.0					45				P-A	Ge	85J		u 11	
577	CK67A	80	1.50	35			.75		6.0∅	1.0∅					12	45			P-A	Ge	85A		u 12	
578	CK67B	80	1.50	35			.75		6.0∅	1.0∅					12	45			P-A	Ge	85A		u 8	
579	CK67C	80	1.50	35			.75		6.0∅	1.0∅					12	45			P-A	Ge	85A		u 9	
580	CK13	80	2.50	18∅	200	20	.75	5.0	6.0	1.0		b 25	.60	.30	7.0	10	12	.48		P-A	Ge	85J		u 11
581	CK13A	80	2.50	30			.75		6.0∅	1.0∅									P-A	Ge	85A		u 12	
582#	2SA14	80	4.00	16	15	.50		10	6.0∅	1.0					26	10			P-A	Ge	85J			
583	CK4	80	4.00	25	100	12	.75	5.0	1.0Δ	.20∅									P-A	Ge	85J		u 11	
584	CK25	80	4.00	20∅	400	20	.75	25	.25∅	1.0Δ									P-A†	Ge	85J		u 11	
585	CK25A	80	4.00	30			.75		.25∅	1.0Δ									P-A†	Ge	85A		u 12	

# 1. JUNCTION TRANSISTORS

IN ORDER OF MAXIMUM COLLECTOR DISSIPATION,  $f_{\alpha b}$ , AND TYPE NO.



LINE No.	TYPE No.	Max. COLL. DISS. in Free Air (mw)	$f_{\alpha b}$ (Mc.)	ABSOLUTE MAX. RATINGS @ 25°C					TYPICAL PARAMETERS @ 25°C										DESCRIPTION							
				BV <sub>cb</sub> (volt)	I <sub>c</sub> (ma)	BV <sub>eb</sub> (volt)	De-rate Free Air P/C/mw	Max. I <sub>cbo</sub> @ Max. V <sub>cb</sub> (μa)	BIAS		h <sub>fe</sub> or hFE - †	CIRCUIT			Max. NF (db)	Gain (db)	C <sub>ob</sub> (pf)	r <sub>bb</sub> × C <sub>ob</sub> (nsec)	t <sub>r</sub> (sec)	Type P - PNP N - NPN	Mat.	Max. Temp. (°C)	STATUS	Dwg. No.		
									V <sub>cb</sub> (volt)	I <sub>e</sub> (ma)		h <sub>i</sub> (ohm)	h <sub>o</sub> (μmho)	h <sub>r</sub> (×10 <sup>-4</sup> )												
586	2N1673	80	5.00	35	10	.50	.75	40	9.0	1.0	100											P-D	Ge	85		TO33
587#	2SA31	80	5.00	12	10			10∅	9.0	1.0∅	50											P-A	Ge	85S		RO16
588#	2SA36	80	5.00	16	15			6.0∅	9.0	1.0∅	50											P-A	Ge	85S		RO16
589#	2SA40	80	5.00	25	50	9.0		6.0∅	6.0	1.0∅	65											P-A†	Ge	85S		RO16
590#	2SA42	80	6.00	45	15	20	.10		6.0	1.0	45	1350	7.5	2.7	7.5							P	Ge	70		
591#	2SA151	80	6.00	9.0	15	.50		.10	3.0∅	1.0	50											P-A	Ge	85J		
592#	2SA189	80	6.00	12	15	.50		10	6.0	1.0	65											P-A	Ge	85J		TO 1
593	CK26	80	6.00	18∅	400	20	.75	25	.25∅	1.0Δ	40†											P-A†	Ge	85J		u 11
594	CK26A	80	6.00	30			.75		.25∅	1.0Δ	40†											P-A†	Ge	85A		u 12
595	2N139	80	6.80	16	15	.50		10	9.0∅	1.0∅	48											P-A†	Ge	71A		TO40
596	2N218	80	6.80	16	15	.50		10	9.0∅	1.0∅	48											P-A†	Ge	71A		TO44
597	2N409	80	6.80	13	15	.50		10	9.0∅	1.0∅	48											P-A	Ge	71A		TO40
598	2N410	80	6.80	13	15	.50		10	9.0	1.0∅	48											P-A	Ge	71A		TO 1
599#	2SA12	80	7.00	16	15	.50	.75	10	6.0∅	1.0	60											P-A	Ge	85J		
600#	2SA13	80	7.00	12	15	.50		10	6.0∅	1.0	60											P-A	Ge	85J		
601	CK14	80	7.00	30	200	20	.75	5.0	6.0∅	1.0	60	b	25	.62	.50							P-A	Ge	85J		u 11
602	CK14A	80	7.00	30	200	20	.75	5.0	6.0∅	1.0	60	b	25	.62	.50							P-A	Ge	85J		u 12
603	2N581	80	8.00	18	100	10		20	.30∅	20∅	30											P-A†	Ge	71A		TO 5
604	2N583	80	8.00	18	100	10		6.0	.30∅	20∅	30											P-A†	Ge	71A		
605▼#	2SA139	80	8.00	30	50	10		5.0	1.0∅	10∅	70†											P-AΔ	Ge	85J		TO 1
606	2N140	80	10.0	7.0	15	.50		10	9.0∅	.60∅	75											P-A†	Ge	71A		TO40
607	2N219	80	10.0	7.0	15	.50		10	9.0∅	.60∅	75											P-A†	Ge	71A		TO44
608	2N411	80	10.0	13	15	.50		10	9.0∅	.60∅	75											P-A	Ge	71A		TO40
609	2N412	80	10.0	13	15	.50		10	9.0∅	.60∅	75											P-A	Ge	71A		TO 1
610#	2SA30	80	10.0	12	10			10∅	9.0	.60∅	75											P-A	Ge	85S		RO16
611#	2SA35	80	10.0	16	15			6.0∅	9.0	.60∅	75											P-A	Ge	85S		RO16
612#	2SA152	80	10.0	9.0	15	.50		.10	3.0∅	1.0	55											P-A	Ge	85J		
613#	2SA188	80	10.0	12	15	.50		10	6.0	1.0	65											P-A	Ge	85J		TO 1
614	CK16	80	10.0	12∅	200	20	.75	5.0	6.0	1.0	80	b	25	.65	.70							P-A	Ge	85J		u 11
615	CK16A	80	10.0	30			.75		6.0∅	1.0∅	80†											P-A	Ge	85A		u 12
616	CK27	80	11.0	15∅	400	20	.75	25	.25∅	1.0Δ	55†											P†	Ge	85J		u 11
617	CK27A	80	11.0	30			.75		.25∅	1.0Δ	55†											P-A†	Ge	85A		u 12
618#	2SA15	80	12.0	16	15	.50	.75		6.0∅	1.0	60											P-A	Ge	85J		
619#	2SA16	80	12.0	12	15	.50		10	6.0∅	.60	70											P-A	Ge	85J		
620	CK4A	80	12.0	30			.75		.15∅	.40Δ	60†											P-A†	Ge	85A		u 12
621#	2SA64	80	15.0	16	20	9.0		6.0∅	6.0	1.0∅	65											P-A†	Ge	85S		RO16
622♦#	2SA138	80	15.0	20	25	10		5.0	1.0∅	10∅	70†											P-AΔ	Ge	85J		TO 1
623	CK28	80	17.0	12∅	400	20	.75	25	.25∅	1.0Δ	80†											P†	Ge	85J		u 11
624	CK28A	80	17.0	30			.75		.25∅	1.0Δ	80†											P-A†	Ge	85A		u 12
625	CK17	80	18.0	10∅	200	20	.75	5.0	6.0	1.0	140	b	26	.77	1.1							P-A	Ge	85J		u 11
626	CK17A	80	18.0	30			.75		6.0∅	1.0∅	140†											P-A	Ge	85A		u 12
627#	2SA17	80	19.0	12	15	.50		6.0	6.0∅	1.0	100											P-A	Ge	85J		
628#	2SA18	80	19.0	21	15	12	.75		6.0∅	1.0	150											P-A	Ge	70J		
629#	2SA111	80	20.0	20	10			20∅	9.0	1.0∅	40											P-D	Ge	85S		
630#	2SA112	80	20.0	20	10			20∅	9.0	1.0∅	45											P-D	Ge	85S		

# 1. JUNCTION TRANSISTORS

IN ORDER OF MAXIMUM COLLECTOR DISSIPATION,  $f_{\alpha b}$ , AND TYPE NO.



LINE No.	TYPE No.	Max. COLL. DISS. in Free Air (mw)	$f_{\alpha b}$ (Mc.)	ABSOLUTE MAX. RATINGS @ 25°C					TYPICAL PARAMETERS @ 25°C										DESCRIPTION						
				$V_{cb}$ (volt)	$I_c$ (ma)	$V_{eb}$ (volt)	De-rate Free Air $^{\circ}C/mw$	Max. $I_{cbo}$ @ Max. $V_{cb}$ ( $\mu A$ )	BIAS		$h_{fe}$ or $h_{FE} - \dagger$	CIRCUIT			Max. NF (db)	Gain (db)	$C_{ob}$ (pf)	$r_{bb} \times C_{ob}$ (nsec)	$t_r$ (sec)	Type P - PNP N - NPN	Mat.	Max. Temp. ( $^{\circ}C$ )	S T A T U S	Dwg. No.	
									$V_{cb}$ (volt)	$I_e$ (ma)		$h_i$ (ohm)	$h_o$ ( $\mu mho$ )	$h_r$ ( $\times 10^{-4}$ )											
631▼#	2SA272	80	20.0	9.0	10	.50		100	3.0	1.0	45										P-D	Ge	85J		TO 1
632	2N247	80	30.0	35	10	1.0		16	9.0	1.0	60										P-D†	Ge	71A	F	TO 7
633	2N274	80	30.0	35	10	.50		10	9.0	1.0	60										P-AD	Ge	71A	A	TO 44
634	2N370	80	30.0	20	10	1.5		20	12	1.0	60										P-D	Ge	71A		TO 7
635	2N371	80	30.0	20	10	.50		20	12	1.0	60										P-D	Ge	71A		TO 7
636	2N372	80	30.0	20	10	.50		20	12	1.0	60										P-D	Ge	71A		TO 7
637	2N373	80	30.0	25	10	.50	.75	8.0	12	1.0	60	e 2200	1.5								P-D	Ge	71A		TO 7
638	2N374	80	30.0	25	10	.50	.75	8.0	12	1.0	60	e 2600	1.0								P-D	Ge	71A		TO 7
639	2N544	80	30.0	18	10	1.0	1.0	4.0	12	.50	60										P-D	Ge	71A		TO 7
640#	2SA43	80	30.0	35	10			16	9.0	1.0	60										P-D	Ge	85S		
641#	2SA83	80	30.0	25	10	.50	.75		9.0	1.0	60										P-D	Ge	85J		
642#	2SA109	80	30.0	20	10			20	9.0	1.0	60										P-D	Ge	85S		
643#	2SA110	80	30.0	20	10			20	9.0	1.0	60										P-D	Ge	85S		RO15
644▼#	2SA269	80	30.0	20	10	.50		10	6.0	1.0	45										P-D	Ge	85J		TO 1
645▼#	2SA271	80	30.0	9.0	10	.50		10	3.0	1.0	60										P-D	Ge	85J		TO 1
646▼#	2SA274	80	30.0	34	10	1.0		7.0	12	1.0	40										P-D	Ge	85J		TO 1
647	2N1425	80	33.0	24	10				12	1.0	49										P-D	Ge			TO 7
648	2N1426	80	33.0	24	10				12	1.0	120										P-D	Ge			TO 7
649	2N1524	80	33.0	24	10	.50	.40	16	12	1.0	60										P-A	Ge	85A		
650	2N1525	80	33.0	24	10	.50	.40	16	12	1.0	60										P-A	Ge	85A		
651	2N1526	80	33.0	24	10	.50	.40	16	12	1.0	130										P-A	Ge	85A		
652	2N1527	80	33.0	24	10	.50	.40	16	12	1.0	130										P-A	Ge	85A		
653	2N1633	80	40.0	34	10	.50	.40	16	12	1.0	75										P-A	Ge	85A		
654	2N1634	80	40.0	34	10	.50	.40	16	12	1.0	75										P-A	Ge	85A		
655	2N1638	80	40.0	34	10	.50	.40	7.0	12	1.0	75										P-A	Ge	85A		
656#	2SA81	80	40.0	20	10	.50	.75		9.0	1.0	80										P-D	Ge	85J		
657#	2SA84	80	40.0	25	10	.50	.75		9.0	1.0	80										P-D	Ge	85J		
658▼#	2SA268	80	40.0	20	10	.50		10	6.0	1.0	45										P-D	Ge	85J		TO 1
659▼#	2SA273	80	40.0	34	10	1.0		7.0	12	1.0	45										P-D	Ge	85J		TO 1
660	2N640	80	42.0	34	10	1.0	.75		12	1.0	60										P-D	Ge	71A		TO 7
661	2N641	80	42.0	34	10	1.0	.75		12	1.0	60										P-D	Ge	71A		TO 7
662	2N642	80	42.0	34	10	1.0	.75		12	1.0	60										P-D	Ge	71A		TO 7
663	2N1631	80	45.0	34	10	.50	.40	16	12	1.0	80										P-A	Ge	85A		
664	2N1632	80	45.0	34	10	.50	.40	16	12	1.0	80										P-A	Ge	85A		
665	2N1635	80	45.0	34	10	.50	.40	16	12	1.0	75										P-A	Ge	85A		
666	2N1636	80	45.0	34	10	.50	.40	16	12	1.0	75										P-A	Ge	85A		
667	2N1637	80	45.0	34	10	1.5	.40	5.0	12	1.0	80										P-A	Ge	85A		
668	2N1639	80	45.0	34	10	.50	.40	7.0	12	1.0	75										P-A	Ge	85A		
669#	2SA94	80	45.0	9.0	10		.75														P-D	Ge			
670#	2SA108	80	45.0	20	10			20	9.0	1.0	70										P-D	Ge	85S		
671#	2SA133	80	45.0	9.0	10	.50		.30	3.0	1.0	50										P-ME	Ge	85J		
672▼#	2SA275	80	45.0	34	10	1.0		5.0	12	1.0	60										P-D	Ge	85J		TO 1
673#	2SA80	80	50.0	20	10	.50	.75		9.0	1.0	100										P	Ge	85		
674#	2SA82	80	50.0	20	10	.50	.75		9.0	1.0	85										P-D	Ge	85J		
675#	2SA85	80	50.0	25	10	1.0	.75		9.0	1.0	85										P-D	Ge	85J		

# 1. JUNCTION TRANSISTORS

IN ORDER OF MAXIMUM COLLECTOR DISSIPATION,  $f_{cb}$ , AND TYPE NO.



LINE No.	TYPE No.	Max. COLL. DISS. in Free Air (mw)	$f_{cb}$ (Mc.)	ABSOLUTE MAX. RATINGS @ 25°C					TYPICAL PARAMETERS @ 25°C										DESCRIPTION					
				$V_{cb}$ (volt)	$I_c$ (ma)	$V_{eb}$ (volt)	De-rate Free Air $P_C$ /mw	Max. $I_{cbo}$ @ Max. $V_{cb}$ ( $\mu$ a)	BIAS		$h_{fe}$ or $h_{FE} - \dagger$	CIRCUIT			Max. NF (db)	Gain (db)	$C_{ob}$ (pf)	$r_{bb} \times C_{ob}$ (nsec)	$t_r$ (sec)	Type P - PNP N - NPN	Mat.	Max. Temp. (°C)	STATUS	Dwg. No.
									$V_{cb}$ (volt)	$I_e$ (ma)		$h_i$ (ohm)	$h_o$ ( $\mu$ mho)	$h_r$ ( $\times 10^{-4}$ )										
676#	2SA131	80	50.0	9.0	10	.50		.30	3.0	1.0	40							P-ME	Ge	85J				
677#	2SA267	80	50.0	20	10	.50		10	6.0	1.0	60							P-D	Ge	85J		TO 1		
678#	2SA270	80	50.0	9.0	10	.50		10	3.0	1.0	75							P-D	Ge	85J		TO 1		
679#	2SA132	80	60.0	9.0	10	.50		.30	3.0	1.0	80							P-ME	Ge	85J				
680#	2SA266	80	60.0	20	10	.50		10	6.0	1.0	75							P-D	Ge	85J		TO 1		
681#	2SA130	80	75.0	9.0	10	.50		.30	3.0	1.0	80							P-ME	Ge	85J				
682#	2SA88	80	90.0	25	10	.50		.50	9.0	1.5	50							P-D	Ge	85J				
683#	2SA89	80	90.0	25	10	.50		.50	9.0	1.5	70							P-D	Ge	85J				
684#	2SA233	80	90.0	20	10	.50	.75	30	6.0	1.0	50							P-ME	Ge	85J				
685	2N1180	80	100	30	10	.50		50	12	1.0	80							P-D	Ge	85		TO45		
686#	ASZ20	80	100	40	15	.50	.60		6.0	1.0	45 $\Delta$							P-AD	Ge	75J		TO 7		
687#	1T3	80	110	80			3.3											FET	Ge	85J				
688#	2SA234	80	110	20	10	.50	.75	30	6.0	1.0	70							P-ME	Ge	85J				
689#	3T3	80	110	80			3.3											FET	Ge	85J				
690#	2SA235	80	125	20	10	.50	.75	30	6.0	1.0	80							P-ME	Ge	85J				
691#	2SA87	80	130	25	10	.50		.50	9.0	1.5	100							P-D	Ge	85J				
692	2N1177	80	140	30	10	1.0		50	12	1.0	100							P-D	Ge	85		TO45		
693	2N1178	80	140	30	10	1.0		50	12	1.0	40							P-D	Ge	85		TO45		
694	2N1179	80	140	30	10	1.0		50	12	1.0	80							P-D	Ge	85		TO45		
695#	2SA134	80	140	20	10	.50		.30	6.0	1.0	70							P-ME	Ge	85J				
696#	2SA135	80	150	20	10	.50		.30	6.0	1.0	70							P-ME	Ge	85J				
697#	2SA290	80	700	20	10	.50	.75	30	6.0	3.0	120							P	Ge	85				
698	2N774	80		20	100	2.0	.83		10	2.0	20							N-D	Si	150		TO18		
699	2N1268	80		20	100	2.0	1.3	.70	10	2.0	20							N-D	Si	150S		TO 9		
700	2N1432	80		35	10	.50	.75		15	2.0	30 $\Delta$							P-D	Ge	85J		TO33		
701#	2SB74	80		16	15	.50		10	6.0	1.0	48							P-A	Ge	85J				
702#	2SD44	80		25	50	12		14	6.0	1.0	85							N-A	Ge	75J		TO 1		
703#	AC107	83	2.00	15	10	5.0	.60	.50	6.0	1.0	70	e 2500	30	5.0	25			P-A	Ge	75J				
704#	OC46	83	3.00	20	125	15		3.0	5.0	3.0	80							P-A	Ge	75J				
705#	OC47	83	5.50	20	125	15		3.0	5.0	3.0	200							P-A	Ge	75J				
706#	2SA145	83	6.00	15	10	12	.60	12	6.0	1.0	50							P-A	Ge	75J				
707#	OC45	83	6.00	15	10	12	.60	10	2.0	1.0	50							P	Ge	75J				
708#	2SA144	83	12.0	15	10	12	.60	12	6.0	1.0	100							P-A	Ge	75J				
709#	OC44	83	15.0	15	10	12	.60	10	2.0	1.0	100							P	Ge	75J				
710	2N1516	83	70.0	20	10		.60	13	6.0	1.0	80							P-AD	Ge	75J	T			
711	PADT20	83	70.0	20	10	1.0	.60	10	6.0	1.0	150							P	Ge	85				
712	PADT21	83	70.0	20	10	1.0	.60	8.0	6.0	1.0	150							P	Ge	85				
713	PADT22	83	70.0	20	10	1.0	.60	8.0	6.0	1.0	150							P	Ge	85				
714	2N2089	83	75.0	20	10	1.0	.59	8.0	6.0	1.0	150							P-A	Ge	75J	T	TO 7		
715	2N2090	83	75.0	20	10	1.0	.59	8.0	6.0	1.0	150							P-A	Ge	75J	T	TO 7		
716	2N2091	83	75.0	20	10	1.0	.59	8.0	6.0	1.0	150							P-A	Ge	75J	T	TO 7		
717#	2SA308	83	450	20	5.0	.30	.60	13	12	1.0	250							P-AD	Ge	75J		TO 7		
718#	2SA309	83	600	20	5.0	.30	.60	13	12	1.0	250							P-AD	Ge	75J		TO 7		
719	2N1515	83		20	10		.60	13	6.0	1.0	100							P-AD	Ge	75J	T			
720	2N1517	83		20	10		.60	13	6.0	1.0	100							P-AD	Ge	75J	T			



# 1. JUNCTION TRANSISTORS

IN ORDER OF MAXIMUM COLLECTOR DISSIPATION,  $f_{cb}$ , AND TYPE NO.



LINE No.	TYPE No.	Max. COLL. DISS. in Free Air (mw)	$f_{cb}$ (Mc.)	ABSOLUTE MAX. RATINGS @ 25°C					TYPICAL PARAMETERS @ 25°C											DESCRIPTION				
				BV <sub>cb</sub> (volt)	I <sub>c</sub> (ma)	BV <sub>eb</sub> (volt)	De-rate Free Air C/mw	Max. I <sub>cb0</sub> @ Max. V <sub>cb</sub> (μA)	BIAS		h <sub>fe</sub> or h <sub>FE</sub> - †	CIRCUIT			Max. NF (db)	Gain (db)	C <sub>ob</sub> (pf)	r <sub>bb</sub> × C <sub>ob</sub> (nsec)	t <sub>r</sub> (sec)	Type P - NPN N - NPN	Mat.	Max. Temp. (°C)	STATUS	Dwg. No.
									V <sub>cb</sub> (volt)	I <sub>e</sub> (ma)		h <sub>i</sub> (ohm)	h <sub>o</sub> (μmho)	h <sub>r</sub> (×10 <sup>-4</sup> )										
721♦#	ASZ23	83		20	100	2.0	.60	8.0									1.0n	P-AD	Ge	75J		TO 7		
722	PADT51	83			7.5	2.0	.60										5.0u	P	Ge	75		TO 7		
723	PADT60	83		35	25			50	12	10								P	Ge	75		TO 1		
724♦	2N990	85	70.0\$	20		1.0					140							P-AD	Ge			TO18		
725♦	2N991	85	70.0\$	20		1.0					140							P-AD	Ge			TO18		
726♦	2N992	85	70.0\$	20		1.0					140							P-AD	Ge			TO18		
727♦	2N993	85	70.0\$	20		1.0					140							P-AD	Ge			TO18		
728♦	2N987	85	100\$	40		1.0					100							P	Ge			TO18		
729	GT1604	90	.50	10			.56	6.0	5.0∅	1.0∅	15			24		16		P-A	Ge	85S		TO 9		
730	GT1605	90	6.50	15		1.0	.56	25	9.0∅	1.0∅	30Δ	3.0∇	29∇		18∇		P-A	Ge	85S		TO 9			
731#	38T1	90	10.0	20	50		.66				50†							P	Ge	85J				
732	GT1606	90	10.0	15		1.0	.56	25	9.0∅	.60∅	50Δ	3.0∇	29∇		18∇		P-A	Ge	85S		TO 9			
733#	39T1	90	15.0	14	50		.66				100†							P	Ge	85J				
734#	ASZ21	94	300∅	20	30	2.5	.50	55∇	.50∅	15	30Δ							P-AD	Ge	75J		TO18		
735	PADT40	94	300	20	50	2.5	.18		.90	30	50					5.0	20n	P	Ge	75		TO18		
736#	PD3L	100	.02	50	5.0													∅	Ge					
737	TI320	100	.40Δ	30	50			20	5.0∅	1.0	34†	b 38	.85	5.4				P-A	Ge			RO44		
738	GT758	100	.50	20	200	15	.50	25	4.5	1.0	15	b 30	.70	3.0	20	14		P-A	Ge	85S				
739	TI321	100	.50Δ	30	50			20	5.0∅	1.0	95†	b 38	.83	8.0				P-A	Ge			RO44		
740	2N63	100	.60	22∅	10	12	.59	20	6.0	1.0	22			25	39			P-F	Ge	85J		OV 3		
741	2N130A	100	.70	40∅	100	12	.59	15	6.0	1.0	26	e 900	17	.35	22	40		P-A	Ge	85J				
742	2N64	100	.80	15∅	10	12	.59	20	6.0	1.0	45			22	41			P-F	Ge	85J	A	OV 3		
743	2N106	100	.80	15	10		.59		1.5	.50	45			5.0	36			P-F	Ge	85J		OV 4		
744	2N131A	100	.80	30∅	100	12	.59	15	6.0	1.0	45	e 1400	18	.43	22	42		P-A	Ge	85J				
745	2N133A	100	.80	20∅	100	12	.59	15	6.0	1.0	50	e 2500	19	.55	7.0	38		P-A	Ge	85J				
746	2N186	100	.80	25	200	5.0	.33	16	5.0	1.0	24	e 1200			28	40		P-A	Ge	85S		RO32		
747	2N132A	100	1.00	20∅	100	12	.59	15	6.0	1.0	90	e30000	20	.56	22	44		P-A	Ge	85J				
748	2N187	100	1.00	25	200	5.0	.33	16	5.0	1.0	36	e 2000			30	40		P-A	Ge	85S		RO32		
749#	2SB57	100	1.00	30	50	10		15	6.0	1.0	65	b 30	.30	3.0	20			P-A	Ge	70J				
750#	2SD61	100	1.00	30	100	10		10	1.0∅	10	50†	28	.25	1.2	8.0		35	N-A	Ge	85J		RO14		
751#	2SD62	100	1.00	30	100	10		10	1.0∅	10	50†	28	.25	1.2			35	N-A	Ge	85J		RO14		
752#	2SD63	100	1.00	25	100			10	1.0∅	10	50†						35	N-A	Ge	85J		RO14		
753#	OC203	100\$	1.00	60	50						15							P	Si	150J				
754	2N188	100	1.20	25	200	5.0	.33	16	5.0	1.0	54	e 2600					32	P-A	Ge	85S		RO32		
755#	2SB100	100	1.20	30	50	10	.40	10	6.0∅	1.0	60	b 30	.30	2.5	5.0			P-A	Ge	75J		TO 5		
756	2N241	100	1.30	25	200			16	1.0	100	73							P	Ge	85		RO32		
757#	2SD75	100	2.00	25	70	12	.60	14	6.0	1.0	40							N	Ge	85				
758#	2SD77	100	2.00	25	70	12	.60	14	1.5	50	70†	1200	20	3.2	4.5			N	Ge	85				
759#	GT40	100	2.50	15	100	15	.50	15	4.5	1.0	30			3.0				P-ΔΔ	Ge	75J		RO12		
760#	GT44	100	2.50	25	100	15	.50	15	4.5	1.0	30	e		3.0				P-ΔΔ	Ge	75J		RO12		
761#	GET881	100	3.50	15	150	10	.60	5.0	1.0	25	45†						.18u	P-A	Ge	85J	T	TO 5		
762#	GET883	100	3.50	15	10	10	.60	5.0	6.0	1.0	50							P-A	Ge	85J	T	TO 5		
763#	GET887	100	3.50	15	10	10	.60	10	6.0	1.0	75							P-A	Ge	85J	T	TO 5		
764#	GET888	100	3.50	15	10	10	.60	10	6.0	1.0	150							P-A	Ge	85J	T	TO 5		
765#	GET891	100	3.50	20	150	10	.60	5.0	1.0	25	45†						.18u	P-A	Ge	85J	T	TO 5		



# 1. JUNCTION TRANSISTORS

IN ORDER OF MAXIMUM COLLECTOR DISSIPATION,  $f_{\alpha b}$ , AND TYPE NO.



LINE No.	TYPE No.	Max. COLL. DISS. in Free Air (mw)	$f_{\alpha b}$ (Mc.)	ABSOLUTE MAX. RATINGS @ 25°C					TYPICAL PARAMETERS @ 25°C										DESCRIPTION						
				$V_{cb}$ (volt)	$I_c$ (ma)	$V_{eb}$ (volt)	De-rate Free Air $P_C/mw$	Max. $I_{cbo}$ @ Max. $V_{cb}$ ( $\mu A$ )	BIAS		$h_{fe}$ or $h_{FE} - \dagger$	CIRCUIT			Max. NF (db)	Gain (db)	$C_{ob}$ (pf)	$r_{bb} \times C_{ob}$ (nsec)	$t_r$ (sec)	Type P - NPN N - PNP	Mat.	Max. Temp. (°C)	STATUS	Dwg. No.	
									$V_{cb}$ (volt)	$I_e$ (ma)		$h_i$ (ohm)	$h_o$ ( $\mu mho$ )	$h_r$ ( $\times 10^{-4}$ )											
811	2N1428	100	18.0*	6.0	50		1.2	.10	.50	5.0	12†	b	35	1.7							P-AD	Si	140J		TO 1
812	2N1429	100	18.0*	6.0	50		1.2	.10	.50	5.0	12†	b	35	1.7							P-AD	Si	140J		TO 5
813	GT1607	100	18.0	10			.59	25	5.0	1.0	60Δ										P-A	Ge	85S		TO 9
814▼#	GET895	100	20.0	20	150	10	.60	5.0	1.0	25	90†										P-A	Ge	85J	T	TO 5
815#	2SA228	100	30.0	80	10	.50		50	6.0	1.0	70										P-D	Ge	75J		TO44
816	2N1676	100	36.0\$	4.5	50		1.2	.10	3.0	1.0	45										P	Si	140		TO 5
817	2N1677	100	36.0\$	4.5	50		1.2	.10	3.0	1.0	45										P	Si	140		TO 1
818	2N1517A	100	70.0	40	10	1.0	.60	8.0	6.0	1.0	150										P	Ge	75		TO 7
819♦#	2SA69	100	70.0	20	10	.50	.50	13	6.0	1.0	150										P-AD	Ge	75J		TO 7
820♦#	2SA70	100	70.0	20	10	.50	.50	13	6.0	1.0	150										P-AD	Ge	75J		TO 7
821	PADT23	100	70.0	35	10	1.0	.60	8.0	6.0	1.0	150										P	Ge	85		
822	PADT24	100	70.0	35	10	1.0	.60	8.0	6.0	1.0	150										P	Ge	85		
823	PADT25	100	70.0	35	10	1.0	.60	8.0	6.0	1.0	150										P	Ge	85		
824	PADT26	100	70.0	35	10	1.0	.60	8.0	6.0	1.0	150										P	Ge	85		
825	PADT27	100	70.0	35	10	1.0	.60	8.0	6.0	1.0	150										P	Ge	85		
826	PADT31	100	70.0	35	10	1.0	.60	8.0	6.0	1.0	150										P	Ge	85		
827	2N2092	100	75.0\$	25	10	1.0	.59	8.0	6.0	1.0	150										P-A	Ge	85J	T	TO 7
828	2N2093	100	75.0\$	25	10	2.0	.59	8.0	6.0	1.0	150										P-A	Ge	85J	T	TO 7
829#	2G401	100	80.0\$	20	10	1.0		50	6.0	1.0	100†										P-AD	Ge	75A		TO 5
830#	2G402	100	80.0\$	20	10	1.0		50	6.0	1.0	100†										P-AD	Ge	75A		TO 5
831	2N1699	100	100	40			.75		12	1.5	100										P	Ge			
832♦#	2SA71	100	100	20	10	.50	.50	13	6.0	1.0	150										P-AD	Ge	75J		TO 7
833#	2G403	100	130\$	40	25	1.0		10	6.0	2.0	100†										P-AD	Ge	75A		TO 5
834	PADT28	100	220	35	10	1.0	.60	10	12	2.0	120										P	Ge	85		
835	PADT30	100	220	25	10	1.0	.60	10	12	1.0	120										P	Ge	85		
836	2N976	100	900	15			.75		5.0	20	80†										P-MD	Ge			TO18
837	2N556	100		25	200	15	.60		.30	10Δ	50†										N-A†	Ge	85J		TO 5
838	2N557	100		20	200	10	.60	10	.30	10Δ	30†										N-A†	Ge	85J		TO 5
839	2N558	100		15	200	15	.60	10	.30	10Δ	75†										N-A†	Ge	85J		TO 5
840	2N647	100		25	100			14	1.0	50	70										N-A	Ge	71A		TO 1
841	2N649	100		20	50	2.5			1.0	50	65†										P-A	Ge	71A		TO 1
842▼	2N649/5	100		20	50	2.5			1.0	50	65†										P-A	Ge	71A		TO 5
843▼	2N2175	100		6.0	50	6.0	1.5	.001	1.5	.02	50†	e	60K								P-A	Si	175		TO 5
844▼	2N2176	100		6.0	50	6.0	1.5	.001	1.5	.02	50†	e	60K								P-A	Si	175		TO18
845	PMT011	100		30		4.0		10	10	150	15Δ†											Si	150J		u 7
846	PMT012	100		30		4.0		10	10	150	30Δ†											Si	150J		u 7
847	PMT013	100		60		5.0		1.0	10	150	20Δ†											Si	150J		u 7
848	PMT014	100		60		5.0		1.0	10	150	40Δ†											Si	150J		u 7
849	PMT015	100		80		8.0	.80	.50	40	150	40†										N-ME	Si	150J		u 7
850	PMT016	100		25		3.0	.80	.50	20	10	20†										N-ME	Si	150J		u 7
851	PMT018	100		40		5.0		1.0	5.0	5.0	10Δ†											Si	150J		u 7
852	PMT019	100		40		5.0		1.0	5.0	5.0	30Δ†											Si	150J		u 7
853	PMT020	100		45		5.0	.80	2.0	5.0	1.0	37†										N-ME	Si			u 7
854	PMT111	100		30		4.0		10	10	150	15Δ†											Si	150J		u 6
855	PMT112	100		30		4.0		10	10	150	30Δ†											Si	150J		u 6

# 1. JUNCTION TRANSISTORS

IN ORDER OF MAXIMUM COLLECTOR DISSIPATION,  $f_{\alpha b}$ , AND TYPE NO.



LINE No.	TYPE No.	Max. COLL. DISS. In Free Air (mw)	$f_{\alpha b}$ (Mc.)	ABSOLUTE MAX. RATINGS @ 25°C					TYPICAL PARAMETERS @ 25°C										DESCRIPTION					
				$V_{cb}$ (volt)	$I_c$ (ma)	$V_{eb}$ (volt)	De-rate Free Air $P_{c/mw}$	Max. $I_{cbo}$ @ Max. $V_{cb}$ ( $\mu A$ )	BIAS		$h_{fe}$ or $h_{FE} - \dagger$	CIRCUIT			Max. NF (db)	Gain (db)	$C_{ob}$ (pf)	$r_{bb} \times C_{ob}$ (nsec)	$t_r$ (sec)	Type P - PNP N - NPN	Mat.	Max. Temp. (°C)	STATUS	Dwg. No.
									$V_{cb}$ (volt)	$I_e$ (ma)		$h_i$ (ohm)	$h_o$ ( $\mu mho$ )	$h_r$ ( $\times 10^{-4}$ )										
856	PMT113	100		60		5.0		1.0	10	150	20						20		80n		Si	150J		u 6
857	PMT114	100		60		5.0		1.0	10	150	40						20		50n		Si	150J		u 6
858	PMT115	100		80		8.0	.80	.50	40	150	40						20			N-ME	Si	150J		u 6
859	PMT116	100		25		3.0	.80	.50	20	10	20						6.0			N-ME	Si	150J		u 6
860	PMT118	100		40		5.0		1.0	5.0	5.0	10						20		50n		Si	150J		u 6
861	PMT119	100		40		5.0		1.0	5.0	5.0	30						20		50n		Si	150J		u 6
862	PMT120	100		45		5.0	.80	2.0	5.0	1.0	37									N-ME	Si	150J		u 6
863	SYL2120	100		15	50	3.5		3.0	.30	10	15							60		PME	Ge	100J	T	u 1
864#	TK49C	100		20		2.0	.50	8.0*	0	5.0	15									N-A	Ge	75		RO47a
865	2N776	110		20	100	2.0	.83		10	2.0	11						25	1.5	.17	N-D	Si	150		TO18
866	2N1270	110		20	100	2.0	1.3	.70	10	2.0	11						25	1.5	.16	N-D	Si	150S		TO 9
867#	2SC29	115	100	40	25			1.0	10	10	30							4.0	.20	N-ME	Si	150J		TO 5
868	2N1310	120	1.00	90		2.0	.50	25	5.0	1.0	35	b	35	1.0	5.0	10		11		N	Ge	85S	N	TO 9
869	2N1311	120	1.50	75		2.0	.50	25	5.0	1.0	30	b	35	1.0	5.0	10		11		N	Ge	85S		TO 9
870	TR34	120	1.60	40	150	1.0	.50	20	6.0	1.0	15							15		P-A	Ge	85J		TO 5
871	2N1312	120	2.00	50		2.0	.50	25	5.0	1.0	40	b	35	1.0	5.0	10		11		N	Ge	85S		TO 9
872	2N1672	120	2.00	40		1.0	.50	25	5.0	1.0	50	e	2.0K							N-A	Ge			TO 5
873	2N1672A	120	2.00	40		1.0	.50	25	5.0	1.0	20	e	2400							N	Ge	85S		TO 5
874#	2SA208	120	3.00	20	400	12	.50	20	.30	200	40								.90u	P-A	Ge	85J		
875#	2SA211	120	4.00	18	100	10	.50	20	.30	100	50								.25u	P-A	Ge	85J		
876#	2SA212	120	4.00	25	100	15	.50	20	.30	100	50								.22u	P-A	Ge	85J		
877	SYL1697	120	4.00	18	100	8.0	.50	5.0	.30	1.0	30						20			P-A	Ge	85S		
878	2N578	120	5.00	20	400	12		20	.30	400	15								.90u	P-A	Ge	71A		TO 5
879	2N585	120	5.00	25	200	20		6.0	.20	200	40						12			P-A	Ge	71A		TO 5
880#	2SA209	120	5.00	20	400	12	.50	20	.30	200	60								.40u	P-A	Ge	85J		
881#	2SC89	120	5.00	15			.35		.30	200	40									N-A	Ge			
882	2N1319	120	6.00	20	400	20		6.0	.30	400	30						20		.55u	P	Ge	85		TO 5
883	2N1090	120	7.00	25	400	20		25	.20	20	50								.25u	N-A	Ge	85A		TO 5
884	2N1169	120	7.00	25	400	25		50	.30	200	40								.40n	N-B	Ge	85		TO 5
885	2N1170	120	7.00	40	400	40		50	.30	200	40								.40n	N-B	Ge	85		TO 5
886#	2SC90	120	7.00	25	400	20		.25	6.0	1.0									.30u	N-A	Ge	95J		
887	SYL1690	120	7.00	25	200	15	.50	30	.20	200	110									P-A	Ge	85J		
888	SYL1717	120	7.00	25	200	15		20			100									P-A	Ge	85J		
889	2N579	120	8.00	20	400	12		20	.30	400	30								.40u	P-A	Ge	71A		TO 9
890	2N1670	120	10.0	100		1.5	.50	7.0	.50	100	15						5.0			P-D	Ge	85S		TO 9
891#	2SA210	120	10.0	20	400	12	.50	5.0	.30	200	150									P-A	Ge	85J		
892#	2SC91	120	10.0	25	400	20	.50		.30	200	100								.25u	N	Ge	85		
893	2N269	120	12.0	25	100	12		20	.30	200	40									P-A	Ge	71A		TO 1
894	2N404	120	12.0	25	100	12		5.0	.30	200	40									P-A	Ge	71A	F	TO 5
895	2N1091	120	13.0	25	400	20		25	.20	20	70								.20u	N-A	Ge	85A		TO 5
896	2N580	120	15.0	20	400	12		20	.30	400	45									P-A	Ge	71A		TO 5
897	2N582	120	18.0	25	100	12		5.0	.20	200	60									P-A	Ge	71A		TO 5
898	2N584	120	18.0	25	100	12		5.0	.20	200	60									P-A	Ge	71A		TO 5
899#	2SA217	120	18.0	25	100	12	.50	5.0	.30	200	150								2.0	P	Ge	85		
900	2N602	120	20.0*	20		1.0	.50	25	1.0	50	50	b	33	.50	3.0	24			4.0	P-D	Ge	85S		TO 9

# 1. JUNCTION TRANSISTORS

IN ORDER OF MAXIMUM COLLECTOR DISSIPATION,  $f_{cb}$ , AND TYPE NO.



LINE No.	TYPE No.	Max. COLL. DISS. in Free Air (mw)	$f_{cb}$ (Mc.)	ABSOLUTE MAX. RATINGS @ 25°C					TYPICAL PARAMETERS @ 25°C										DESCRIPTION						
				BV <sub>cb</sub> (volt)	I <sub>c</sub> (ma)	BV <sub>eb</sub> (volt)	De-rate Free Air P (mw)	Max. I <sub>cb0</sub> @ Max. V <sub>cb</sub> (μa)	BIAS		h <sub>fe</sub> or hFE - †	CIRCUIT			Max. NF (db)	Gain (db)	C <sub>ob</sub> (pf)	r <sub>bb</sub> × C <sub>ob</sub> (nsec)	t <sub>r</sub> (sec)	Type P - PNP N - NPN	Mat.	Max. Temp. (°C)	STATUS	Dwg. No.	
									V <sub>cb</sub> (volt)	I <sub>e</sub> (ma)		h <sub>i</sub> (ohm)	h <sub>o</sub> (μmho)	h <sub>r</sub> (×10 <sup>-4</sup> )											
901	2N1065	120	20.0Δ	40		1.0	.50	50	1.0∅	.50Δ	50†	b	33	.50	3.0	24		4.0		.10u	P-D†	Ge	85S		TO 9
902▼	GT5116	120	20.0§	15		2.0	.50	10	1.0∅	.40	20†							8.0			P-D	Ge			TO 9
903	2N1678	120	25.0Δ	60		4.0	.50	25	5.0∅	1.0∅	25	b		20				5.0			P-D	Ge	71A		TO 9
904	2N643	120	30.0§	30	100	2.0			7.0∅	5.0∅	45†						45	2.0			P-D	Ge	100A		TO 9
905	2N1395	120	30.0	40	10	.50	.62	50	12	1.5	90							2.0			P-D	Ge			TO33
906	2N603	120	40.0*	30		1.0	.50	25	1.0∅	.50Δ	63†	b	30	.40	4.0	24		3.0		.06u	P-D†	Ge	85S		TO 9
907▼	GT5117	120	40.0§	20		2.0	.50	10	1.0∅	.40	20†							8.0			P-D	Ge			TO 9
908	2N644	120	50.0§	30	100	2.0			7.0∅	5.0∅	45†							2.0			P-D	Ge	71A		TO33
909◆#	SFT316	120	50.0§	20	10	.50	.50	15	9.0∅	1.0∅	120							2.0	.04		P-D	Ge	85J		TO44
910◆#	SFT354	120	55.0§	20	10	.50	.50	15	9.0∅	1.0∅	100							2.0	.04		P-D	Ge	85J		TO44
911	2N604	120	60.0*	30		2.0	.50	25	1.0∅	.50Δ	90†	b	27	.25	3.0	24		3.0		.04u	P-D†	Ge	85S		TO 9
912	2N1224	120	60.0	40	10	.50	.62	50	12	1.5	60						45	2.0			P-D	Ge	100A	A	TO33
913	2N1226	120	60.0	60	10	.50	.62	50	12	1.5	60						45	2.0			P-D	Ge	100A		TO33
914◆#	SFT357	120	70.0§	20	10	.50	.50	15	9.0∅	1.0∅	120							2.0	.04		P-D	Ge	85J		TO44
915◆#	SFT358	120	70.0§	20	10	.50	.50	15	9.0∅	1.0∅	150							2.0	.04		P-D	Ge	85J		TO44
916	2N645	120	75.0§	30	100	2.0			7.0∅	5.0∅	45†							2.0			P-D	Ge	71A		TO33
917▼#	2SA279	120*	80.0	30	30	.50	.25	6.0∅	2.0∅	1.0∅	100†							3.5			P-AD	Ge	75J		TO 7
918▼#	SFT357P	120	80.0§	30	10	.50	.50	20	9.0∅	1.0∅	180							2.0	.04		P-D	Ge	85J		TO44
919	2N384	120	100	30	10	.50			12∅	1.5∅	60	e	400				34	1.3			P-D	Ge	71A	M	TO44
920	2N1225	120	100	40	10	.50	.62	50	12	1.5	60						32	2.0			P-D	Ge	100A	A	TO33
921	2N1285	120	100	40	10	2.5		12∅	12∅	1.5∅	100∇						22	3.0∇			P-D	Ge	100S		TO33
922	2N1396	120	100	40	10	.50	.62	50	12	1.5	90						28	2.0			P-D	Ge	100A		TO33
923	2N1023	120	120	40	10	.50	.62	50	12	1.5	60						23	2.0			P-D	Ge	100A		TO44
924	2N1066	120	120	40	10	.50	.62	50	12	1.5	60						23	2.0			P-D	Ge	100A		TO33
925	2N1397	120	120	40	10	.50	.62	50	12	1.5	90						23	2.0			P-D	Ge	100A		TO33
926	2N602A	120		35		1.5		5.0∅	1.0∅	.50Δ	50†	b		2.0			24	7.0∇		.4u∇	P-D†	Ge		T	TO 9
927	2N603A	120		30		2.0		5.0∅	1.0∅	.50Δ	65†	b		2.0			24	5.0∇		.3u∇	P-D†	Ge		T	TO 9
928	2N604A	120		30		2.5		5.0∅	1.0∅	.50Δ	80†	b		2.0			24	5.0∇		.2u∇	P-D†	Ge		T	TO 9
929	2N1450	120		30	100	1.0	.50	100	1.0∅	1.0∅	20†Δ									.1p∇	P-AD	Ge	85S		TO 5
930	2N279	125	.30	30	10	.40		12	2.0	.50∅	30	e	2200	23	9.0	15					P-A	Ge	75J		
931	2N280	125	.30	30	10	.40		12	2.0	3.0∅	47	e	800	80	5.0	15	40				P-A†	Ge	75J		
932◆#	2SB170	125	.30	30	10	.40		12∅	2.0	.50	30	e	1800	15	4.5	16					P-A	Ge	75J		TO 1
933#	GTE1	125	.30	30	10	.40		12	2.0	3.0∅	47	e	800	80	5.0	15	40				P-A	Ge	75J		
934#	GTE2	125	.30	30	250	10	.40	10	6.0∅		22						15				P-A	Ge	75J		
935#	GTV	125	.30	30	10	.40		12	2.0	.50∅	30	e	2200	23	9.0	15					P-A	Ge	75J		
936	2N284	125	.35	32	250	10	.40	10	6.0∅		22						15				P-A†	Ge	75J		
937	2N284A	125	.35	60	250		.40	10	6.0∅		22						15				P-A†	Ge	75J		
938#	OC70	125	.45	30	10	.40		5.0	2.0	.50	30	e	2300	23	9.0	15					P-A	Ge	75J		RO 9
939	2N283	125	.50	32	10	30	.40	4.5	10∅	.50∅	40						15				P-A†	Ge	75J		
940◆#	2SB171	125	.50	30	10	.40		12∅	2.0	3.0	50	e	800	75	4.5	16					P-A	Ge	75J		TO 1
941▼#	2SB173	125	.50	20	10	.40		12∅	6.0∅	1.0	50					6.0					P-A	Ge	75J		TO 1
942#	GFT32/15	125	.50	15	300	10	.40	20	3.0	50	50										P-A	Ge	75J		RO21
943#	GFT32/30	125	.50	30		10	.40	20	3.0	50	50										P-AD	Ge	75J		RO21
944#	GFT32/60	125	.50	60		10	.40	20	3.0	50	50										P-AD	Ge	75J		RO21
945#	OC71	125	.50	30	10	.40		5.0	2.0	3.0	47	e	800	80	5.4	15					P-A	Ge	75J		RO 9

# 1. JUNCTION TRANSISTORS

IN ORDER OF MAXIMUM COLLECTOR DISSIPATION,  $f_{\alpha b}$ , AND TYPE NO.



LINE No.	TYPE No.	Max. COLL. DISS. in Free Air (mw)	$f_{\alpha b}$ (Mc.)	ABSOLUTE MAX. RATINGS @ 25°C					TYPICAL PARAMETERS @ 25°C										DESCRIPTION								
				BV <sub>cb</sub> (volt)	I <sub>c</sub> (ma)	BV <sub>eb</sub> (volt)	De-rate Free Air P/C/mw	Max. I <sub>cb0</sub> @ Max. V <sub>cb</sub> (μa)	BIAS		h <sub>fe</sub> or hFE - †	CIRCUIT			Max. NF (db)	Gain (db)	C <sub>ob</sub> (pf)	r <sub>bb</sub> × C <sub>ob</sub> (nsec)	t <sub>r</sub> (sec)	Type P - PNP N - NPN	Mat.	Max. Temp. (°C)	STATUS	Dwg. No.			
									V <sub>cb</sub> (volt)	I <sub>e</sub> (ma)		h <sub>i</sub> (ohm)	h <sub>o</sub> (μmho)	h <sub>r</sub> (×10 <sup>-4</sup> )													
946♦#	2SB175	125	.60	30	10		.40	12∅	2.0	3.0	90	e	1300	80	5.5	16							P-A	Ge	75J		TO 1
947#	GFT34/15	125	.60	15	300	10	.40	20	3.0	75	75											P-A	Ge	75J		RO21	
948#	GFT34/30	125	.60	30		10	.40	20	3.0	75	75											P-Δ	Ge	75J		RO21	
949#	GFT34/60	125	.60	60		10	.40	20	3.0	75	75											P-Δ	Ge	75J		R 21	
950#	V10/15A	125	.60	10	30	10	.25		4.5	1.0	20		45	1.33	7.7	30	29	35	1.1			P-A	Ge	75J			
951#	2SB161	125	.65	30	100	10	.40	10∅	1.0∅	50∅	50†											P-A	Ge	75J		TO 5	
952#	V10/30A	125	.70	10	30	10	.25		4.5	1.0	40		59	1.0	9.7	30	31	35	1.2			P-A	Ge	75J			
953	OC75	125	.75		50			5.0	2.0	3.0	90											P-A	Ge	75J		RO 9	
954	TS13	125	.75	30	25		.40	10	9.0	1.0	52	e	1800	12		25						P-A	Ge	75J			
955	TS14	125	.75	30	25		.40	10	9.0	1.0	32	e	1300	12		25						P-A	Ge	75J			
956#	2SB163	125	.80	30	100	10	.40	10∅	1.0∅	50∅	70†											P-A	Ge	75J		TO 5	
957#	GT31	125	.80	15	100	15	.40		4.5	1.0	20	e	1100	18	3.5							P-Δ	Ge	75J		RO12	
958▼#	2SB177	125	.90	60	125	10	.40	12∅														P-A	Ge	75J		TO 1	
959#	2xOC308	125	.90	Pair of OC308																							
960♦#	ASY14	125	.90	80	250		.40	10∅	.70∅	125∅	25†Δ								1.5u			P-Δ	Ge	75J		RO43	
961#	GT32	125	.90	15	100	15	.40		4.5	1.0	40	e	1800	20	4.0							P-Δ	Ge	75J		RO12	
962#	OC72	125	.90	32	125	10	.40	10	.70	80	50†					15						P-A	Ge	75J		RO 8	
963#	OC76	125	.90	32	125	10	.40	10	1.0	250	45†					15						P†	Ge	75J		RO 8	
964#	OC77	125	.90	60	125	10	.40	10	1.0	250	52†					15						PΔ	Ge	75J		RO 8	
965#	OC307	125	.90	32	250		.40	15∅	.70∅	125∅	25†Δ											P-Δ	Ge	75J		RO43	
966#	OC308	125	.90	35	250		.40	10∅	.70∅	80∅	50†											P-A	Ge	75J		RO43	
967#	OC309	125	.90	60	250		.40	10∅	.70∅	125∅	25†Δ											P-Δ	Ge	75J		RO43	
968	2SB54	125	1.00	20	50	12	.60	14	6.0	1.0	150	b	30	.20	2.5							P-A	Ge	75J		TO 1	
969#	2SB165	125	1.00	30	100	10	.40	10∅	1.0∅	50∅	100†						36	30				P-A	Ge	75J		TO 5	
970♦#	2SB172	125	1.00	32	125	10	.40	12∅	1.0∅	100∅	50†					16						P-A	Ge	75J		TO 1	
971#	GT33	125	1.00	15	100	15	.40		4.5	1.0	60	e	2500	25	5.0							P-Δ	Ge	75J		RO12	
972#	2SB101	125	1.20	30	50	10	.40	10	6.0∅	1.0	60	b	30	.30	2.5							P-A	Ge	75J		TO 5	
973#	2SB103	125	1.20	30	100	10	.40	10	1.0∅	50∅	70†											P-A	Ge	75J		TO 5	
974#	V10/50A	125	1.20	10	30	10	.25		4.5	1.0	75		65	.77	11	30	33	35	1.2			P-A	Ge	75J			
975♦#	2SB176	125	1.40	32	125	10	.40	12∅	1.0∅	100∅	100†											P-A	Ge	75J		TO 1	
976#	2SB98	125	1.50	30	50			10∅	6.0∅	1.0	40	b	30	.30	2.5	10		30				P-A	Ge	75J		TO 5	
977#	2SB99	125	1.50	30	50			10∅	6.0∅	1.0	120	b	30	.30	2.5	10		30				P-A	Ge	75J		TO 5	
978#	OC204	125\$	1.50\$	32	250						30											P	Si	150J			
979#	OC205	125\$	1.50\$	60	250						30											P	Si	150J			
980#	OC206	125\$	1.50\$	32	250						30											P	Si	150J			
981#	2SD11	125	2.50	25	300	15	.40	10∅	1.0∅	20∅	70†											N-A	Ge	75J		TO 5	
982#	NKT143	125	3.00	15	500		.40	40	4.5	1.0	80							20				P	Ge	75			
983#	NKT144	125	3.00	15	500		.40	40	4.5	1.0	80							20				P	Ge	75			
984#	2SA173	125	4.00	20	50	10	.40	8.0	1.0∅	10	60†							13		.50u		P-A	Ge	75J		TO 5	
985▼#	ASY26	125	4.00Δ	30	200	20	.40	3.0∅	0	20	31Δ							15		2.2u		P-A†	Ge	75J		TO 5	
986	GT1608	125	4.50				.50		5.0∅	1.0∅							25	14				N-A	Ge	85S		TO 9	
987	GT1609	125	5.00Δ				.50		5.0∅	1.0∅							30	14				N-A	Ge	85S		TO 9	
988#	2SA26	125	6.00	20	50			12∅	6.0	1.0	60							15				P-A	Ge	75J		TO 5	
989▼#	ASY27	125	6.00Δ	25	200	20	.40	3.0∅	0	20	62Δ							15		2.2u		P-A†	Ge	75J		TO 5	
990	2N617	125	7.50	15	150	10	.48	6.0	9.0	.50	15						30	7.0	.70			P-F	Ge	85J		TO 5	

# 1. JUNCTION TRANSISTORS

IN ORDER OF MAXIMUM COLLECTOR DISSIPATION,  $f_{\alpha b}$ , AND TYPE NO.



LINE No.	TYPE No.	Max. COLL. DISS. in Free Air (mw)	$f_{\alpha b}$ (Mc.)	ABSOLUTE MAX. RATINGS @ 25°C					TYPICAL PARAMETERS @ 25°C										DESCRIPTION								
				$V_{cb}$ (volt)	$I_c$ (ma)	$V_{eb}$ (volt)	De-rate Free Air $^{\circ}C/mw$	Max. $I_{cbo}$ @ Max. $V_{cb}$ ( $\mu a$ )	BIAS		$h_{fe}$ or $h_{FE} - \dagger$	CIRCUIT			Max. NF (db)	Gain (db)	$C_{ob}$ (pf)	$r_{bb} \times C_{ob}$ (nsec)	$t_r$ (sec)	Type P - PNP N - NPN	Mat.	Max. Temp. ( $^{\circ}C$ )	S T A T U S	Dwg. No.			
									$V_{cb}$ (volt)	$I_e$ (ma)		$h_i$ (ohm)	$h_o$ ( $\mu mho$ )	$h_r$ ( $\times 10^{-4}$ )													
991	2N505	125	8.00	40	250	40	.50		1.0 $\emptyset$	1.0 $\emptyset$	40						18		10		.10u	P	Ge	85J			
992#	2SA171	125	8.00	20	50	10	.40	8.0	1.0 $\emptyset$	1.0	60 $\dagger$								12		.40u	P-A	Ge	75J		TO 5	
993#	NKT142	125	8.00	15	500		.40	40	4.5	1.0	100								20			P	Ge	75			
994#	2SA167	125	9.00	20	50	10	.40	8.0	6.0 $\emptyset$	1.0	60	b	28	.80	13	18			13			P-A	Ge	75J		TO 5	
995#	10T2	125	10.0	30	25		.94			1.0 $\emptyset$	31 $\dagger$											N	Si	165J			
996#	11T2	125	10.0	30	25		.94			1.0 $\emptyset$	63 $\dagger$											N	Si	165J			
997#	12T2	125	10.0	30	25		.94			1.0 $\emptyset$	100 $\dagger$											N	Si	165J			
998#	2SA169	125	15.0	20	50	10	.40	8.0	1.0 $\emptyset$	1.0	70 $\dagger$								11		.25u	P-A	Ge	75J		TO 5	
999#	NKT141	125	15.0	15	500		.40	40	4.5	1.0	150								20			P	Ge	75			
1000	2N337	125	20.0	45	20	1.0			20	1.0	22	b	50	.20	2.0				2.0		.05u	N-GD	Si	150J	N	TO 5	
1001#	2S014	125	20.0	40	20	1.0	1.0		20	1.0	65	b	50	.20	3.0				1.6		.05u	N-GD	Si	150J		RO30	
1002	TI493	125	20.0	40	20	1.0	.80	2.0	5.0 $\emptyset$	10 $\emptyset$	15 $\Delta$ $\dagger$	b	30	.20	2.0				2.0			N-G	Si	125J		TO 5	
1003	TI494	125	20.0	40	20	1.0	.80	2.0	5.0 $\emptyset$	10 $\emptyset$	40 $\Delta$ $\dagger$	b	30	.20	2.0				2.0			N-G	Si	125J		TO 5	
1004	TI495	125	20.0	40	20	1.0	.80	2.0	5.0 $\emptyset$	10 $\emptyset$	120 $\Delta$ $\dagger$	b	30	.20	2.0				2.0			N-G	Si	125J		TO 5	
1005#	2SA78	125	25.0	40	400	2.0	.40	12	6.0	1.0	70											P-D	Ge	75J		TO44	
1006#	2SA248	125	25.0	40	200	2.0		12	1.0	200	50 $\dagger$											P-D $\dagger$	Ge	75J		TO44	
1007	2N338	125	30.0	45	20	1.0			20	1.0	24	b	50	.20	3.0							N-GD	Si	150J	N	TO 5	
1008#	2SA75	125	30.0	20	50	.50	.40	50	3.0	20	70											P-D	Ge	75J		TO44	
1009#	2S005	125	30.0	40	20	1.0	1.0		20	1.0	100	b	50	.20	2.0							N-GD	Si	150J		TO 5	
1010#	2SC160	125	100	20	20	1.0	1.2		6.0	2.0	60											N	Si	175			
1011#	2SA74	125	70.0	50	50	.50	.40	50	6.0	5.0	70											P-D	Ge	70		TO44	
1012	2N2084	125	100	40	10	1.0	.52	.0 $\emptyset$	6.0	1.0	100	b	65	650					9.5	14	2.0	P-A	Ge	90J	T	TO33	
1013	3N34	125	100	30	20	1.0	1.0		20	1.3	25								20	22	1.5	N-D4	Si	150J		TO12	
1014#	3S002	125	100	30	20	1.0	1.0	10	20 $\emptyset$	1.0	25											N-D4	Si	150J		TO 5	
1015	2N2188	125	125	40	50	2.0	.48	3.0	6.0	2.0	90	e	1800	18	1.9	2.0	40					P	Ge	100			
1016	2N2190	125	125	60	50	2.0	.48	3.0	6.0	2.0	90	e	1800	18	1.9	2.0	40					P	Ge	100			
1017	2N2189	125	150	40	50	2.0	.48	3.0	6.0	2.0	135	e	1800	18	1.9	2.0	40					P	Ge	100			
1018	2N2191	125	150	60	50	2.0	.48	3.0	6.0	2.0	135	e	1800	18	1.9	2.0	40					P	Ge	100			
1019#	3S004	125	150	30	20	1.0	1.0	10	20 $\emptyset$	1.0	25											N-D4	Si	150J		TO 5	
1020	3N35	125	200	30	20	1.0	1.0		20	1.3	25								14	20	1.5	N-D4	Si	150J	M	TO12	
1021	4D24	125		15	25	1.0	.80	1.0 $\emptyset$	5.0 $\emptyset$	10 $\emptyset$	33 $\dagger$	b	50	.20	2.0							4.0 $\emptyset$	N- $\Delta$	Si	125J	T	TO 5
1022	4D25	125		15	25	1.0	.80	1.0 $\emptyset$	5.0 $\emptyset$	10 $\emptyset$	88 $\dagger$	b	50	.20	2.0							4.0 $\emptyset$	N- $\Delta$	Si	125J	T	TO 5
1023	4D26	125		15	25	1.0	.80	1.0 $\emptyset$	5.0 $\emptyset$	10 $\emptyset$	133 $\dagger$	b	50	.20	2.0							4.0 $\emptyset$	N- $\Delta$	Si	125J	T	TO 5
1024	2N111	130	3.00	30	200	20	.40		6.0	1.0	25								33	12	.90	P-F	Ge	85J		OV 4	
1025	2N111A	130	3.00	30	200	20	.40		6.0	1.0	25								33	12 $\pm$ 2.90		P-F	Ge	85J			
1026	2N112	130	5.00	30	200	20	.40		6.0	1.0	30								35	12	.90	P-F	Ge	85J		OV 4	
1027	2N112A	130	5.00	30	200	20	.40		6.0	1.0	30								35	12 $\pm$ 2.90		P-F	Ge	85J			
1028	2N113	130	10.0	30	200	20	.40		6.0	1.0	45								36	12	.90	P-F	Ge	85J		OV 4	
1029	2N271	130	10.0	30	200	20	.40		6.0	1.0	45								29	12		P-F	Ge	85J			
1030	2N271A	130	10.0	30	200	20	.40		6.0	1.0	45								29	12		P-F	Ge	85J			
1031	2N114	130	20.0	30	200	20	.40		6.0	1.0	75								36	12	.90	P-F	Ge	85J		OV 4	
1032#	2SA247	130	200	10	30	1.2	.46	5.0	3.0	20	125											4.0	P	Ge	85		
1033#	2SA246	130	270	30	30	.50	.46	30	6.0	5.0	70											6.0	P	Ge	85		
1034	2N777	130 $\S$		20	100	2.0	.83		10 $\emptyset$	2.0 $\emptyset$	20								25	1.5	.17	N-D	Si	150		TO18	
1035	2N1271	130 $\S$		20	100	2.0	1.3	.70	10 $\emptyset$	2.0 $\emptyset$	20								25	1.5	.16	N-D	Si	150S		TO 9	



# 1. JUNCTION TRANSISTORS

IN ORDER OF MAXIMUM COLLECTOR DISSIPATION,  $f_{\alpha b}$ , AND TYPE NO.



LINE No.	TYPE No.	Max. COLL. DISS. in Free Air (mw)	$f_{\alpha b}$ (Mc.)	ABSOLUTE MAX. RATINGS @ 25°C					TYPICAL PARAMETERS @ 25°C										DESCRIPTION					
				$V_{cb}$ (volt)	$I_c$ (ma)	$V_{eb}$ (volt)	De-rate Free Air $^{\circ}C/mw$	Max. $I_{cbo}$ @ Max. $V_{cb}$ ( $\mu A$ )	BIAS		$h_{fe}$ or $h_{FE} - \dagger$	CIRCUIT			Max. NF (db)	Gain (db)	$C_{ob}$ (pf)	$r_{bb} \times C_{ob}$ (nsec)	$t_r$ (sec)	Type P - NPN N - NPN	Mat.	Max. Temp. ( $^{\circ}C$ )	STATUS	Dwg. No.
									$V_{cb}$ (volt)	$I_e$ (ma)		$h_i$ (ohm)	$h_o$ ( $\mu mho$ )	$h_r$ ( $\times 10^{-4}$ )										
1036#	2G322	140	2.00	16 $\emptyset$	100		.25	16	5.0	1.0	50 $\dagger$	e 2200							P-A	Ge	85S			
1037	2N322	140	2.00	16 $\emptyset$	100		.25	16	5.0 $\emptyset$		42								P-A	Ge	60J	T	TO 5	
1038#	2G108	140	2.50	16 $\emptyset$	100		.25	16	5.0	1.0	60 $\dagger$	e 2400		15	40	25			P-A	Ge	85S			
1039#	2G323	140	2.50	16 $\emptyset$	100		.25	16	5.0	1.0	75 $\dagger$	e 2600				25			P-A	Ge	85S			
1040	2N323	140	2.50	16 $\emptyset$	100		.25	16	5.0 $\emptyset$		70					22			P-A	Ge	60J	T	TO 5	
1041#	2SB48	140	2.50	16	100			16	1.0 $\emptyset$	20	43 $\dagger$		.60	8.0	12	25			P-A	Ge	65J		TO 5	
1042#	2G109	140	3.00	16 $\emptyset$	100		.25	16	5.0	1.0	95 $\dagger$	e 3300		15	43	25			P-A	Ge	85S			
1043#	2G324	140	3.00	16 $\emptyset$	100		.25	16	5.0	1.0	95 $\dagger$	e 3300				25			P-A	Ge	85S			
1044	2N324	140	3.00	16 $\emptyset$	100		.25	16	5.0 $\emptyset$		80					22			P-A	Ge	60J	T	TO 5	
1045#	2SB49	140	3.00	16	100			16	1.0 $\emptyset$	20	83 $\dagger$		.60	8.0	12	25			P-A	Ge	65J		TO 5	
1046#	2G508	140	3.50	16 $\emptyset$	100		.25	16	5.0	1.0	125 $\dagger$	e 3000				24			P-A	Ge	85S			
1047	2N508	140	3.50	16 $\emptyset$	100		.25	16	5.0 $\emptyset$		112					22			P-A	Ge	60J	T	TO 5	
1048#	2SB50	140	3.50	16	100			16	1.0 $\emptyset$	20	131 $\dagger$		.60	8.0	12	25			P-A	Ge	65J		TO 5	
1049	2N1097	140		16 $\emptyset$	100			16		20 $\emptyset$	34 $\dagger$								P	Ge	85J		TO 5	
1050	2N1098	140		16 $\emptyset$	100			16		20 $\emptyset$	34 $\dagger$								P	Ge	85J		TO 5	
1051	2N1144	140		16 $\emptyset$	100			16		20 $\emptyset$	34 $\dagger$								P	Ge	85J			
1052	2N1145	140		16 $\emptyset$	100			16		20 $\emptyset$	34 $\dagger$								P	Ge	85J			
1052a $\nabla$ #	AC130	145	2.00	20	100	20	.45		0	10	25 $\Delta$					10			N-AB	Ge	90		TO 7	
1053	2N213A	150	.15	40			.40									40			N-A	Ge				
1054	2N34	150	.40	40	100		.33	50	6.0 $\emptyset$	1.0 $\emptyset$	75	e 2500	30	6.0		37			P-A	Ge	75J		TO22	
1055 $\nabla$	2N34/5	150	.40	40	100		.33	50	6.0 $\emptyset$	1.0 $\emptyset$	75	e 2500	30	6.0		37			P-A	Ge	75J		TO 5	
1056	2N592	150	.40	20		20	.50	25	5.0 $\emptyset$	1.0	40	b 30	.50	5.0		35			P-B $\dagger$	Ge	85S		TO 9	
1057	2N237	150	.50	45	20			10	6.0	1.0	50				42				P	Ge	85			
1058	2N444	150	.50 $\Delta$	15		10	.60	25	4.5 $\emptyset$	1.0	15	b 30	.50	1.6		16	2.2		N-A	Ge	85S		TO 5	
1059	2N444A	150	.50 $\Delta$	40		10	.50	25	.25 $\emptyset$	20 $\emptyset$	30 $\dagger$	b 30	.50	1.6		14	1.0	2.5u	N- $\Delta$	Ge	100S		TO 5	
1060	2N462	150	.50 $\Delta$	40	200	40	.30	35	.50 $\emptyset$	200 $\emptyset$	45 $\Delta$								P- $\Delta$	Ge	75J			
1061	2N519	150	.50 $\Delta$	15		10	.60	25	4.5 $\emptyset$	1.0	25	b 30	.70	3.0		14	1.0		P-A	Ge	85S		TO 5	
1062	2N519A	150	.50 $\Delta$	25		10	.50	25	.25 $\emptyset$	20 $\emptyset$	35 $\dagger$	b 30	.70	3.0		14	1.0	1.5u	P- $\Delta$	Ge	100S		TO 5	
1063	2N1009	150	.50	25 $\emptyset$	20			800	10 $\emptyset$	10 $\emptyset$	40 $\Delta$								P-A	Ge	85A			
1064	T1796	150	.50 $\Delta$	35	200	35	.40	35	.50 $\emptyset$	200	45 $\dagger$								P	Ge	85J			
1065#	TK44C	150	.50 $\Delta$	60		40	.30 $\emptyset$		.30 $\emptyset$	10 $\emptyset$	30 $\dagger$								P-A	Ge	75		RO47	
1066#	TK48C	150	.50 $\Delta$	60		40	.30	1.7*	.30 $\emptyset$										P-A	Ge	75		RO47	
1067	2N593	150	.60	40		40	.50	25	5.0 $\emptyset$	1.0	80	b 30	.50	6.0		35			P-B $\dagger$	Ge	85S		TO 9	
1068	2N1251	150	.60	20	100	10	.40	50	6.0 $\emptyset$	1.0	150					40			N-A	Ge	85J		TO22	
1069	2N405	150	.65	12	70	2.5		14	6.0 $\emptyset$	1.0 $\emptyset$	35					43			P-A	Ge	71A		TO44	
1070	2N406	150	.65	12	70	2.5		14	6.0 $\emptyset$	1.0 $\emptyset$	35					43			P-A	Ge	71A		TO 1	
1071	2N104	150	.70	30	50	12	.40	20	6.0 $\emptyset$	1.0 $\emptyset$	44	e 1667	23	5.0	12	41	40		P-A	Ge	71A		TO40	
1072	2N180	150	.70	30		30	.33	10	6.0	1.0	60					12	43	25	P-A	Ge	75			
1073	2N215	150	.70	30	50	12	.40	20	6.0 $\emptyset$	1.0 $\emptyset$	44	e 1667	23	5.0	12	41	40		P-A	Ge	71A		TO44	
1074 $\dagger$	2N367	150	.70	30	50	10			5.0	1.0	15								P-A	Ge	75S		TO 9	
1075	2N464	150	.70	40 $\emptyset$	100	12	.40	15	6.0	1.0	26	e 900	17	.35	22	40			P-A	Ge	85J	A	TO 5	
1076#	2SB75	150	.70	25	70	12	.40	14	6.0	1.0	45		18000	21.5	3.0	7.0			P	Ge	85			
1077	GT949	150	.70 $\Delta$	30			.50	25	1.0 $\emptyset$	1.0 $\Delta$	30	b	.50				16		N-A	Ge	100S			
1078	2N1129	150	.75	25	250		.40	25	.60 $\emptyset$	100 $\emptyset$	165 $\dagger$	b 10	1.6	5.5			125		P- $\Delta$	Ge	85J		RO 2	
1079	2N1130	150	.75	30	250		.40	25	.60 $\emptyset$	100 $\emptyset$	110 $\dagger$	b 10	1.6	5.5			125		P- $\Delta$	Ge	85J		RO 2	

# 1. JUNCTION TRANSISTORS

IN ORDER OF MAXIMUM COLLECTOR DISSIPATION,  $f_{cb}$ , AND TYPE NO.



LINE No.	TYPE No.	Max. COLL. DISS. in Free Air (mw)	$f_{cb}$ (Mc.)	ABSOLUTE MAX. RATINGS @ 25°C					TYPICAL PARAMETERS @ 25°C										DESCRIPTION					
				BV <sub>cb</sub> (volt)	I <sub>c</sub> (ma)	BV <sub>eb</sub> (volt)	De-rate Free Air P/C/mw	Max. I <sub>cb0</sub> @ Max. V <sub>cb</sub> (μa)	BIAS		h <sub>fe</sub> or hFE - †	CIRCUIT			Max. NF (db)	Gain (db)	C <sub>ob</sub> (pf)	r <sub>bb</sub> × C <sub>ob</sub> (nsec)	t <sub>r</sub> (sec)	Type P - PNP N - NPN	Mat.	Max. Temp. (°C)	STATUS	Dwg. No.
									V <sub>cb</sub> (volt)	I <sub>e</sub> (ma)		h <sub>i</sub> (ohm)	h <sub>o</sub> (μmho)	h <sub>r</sub> (×10 <sup>-4</sup> )										
1080	2N35	150	.80	40	100		.40	50	6.0	1.0	75	e 2500	30	6.0		37			N-A	Ge	75J		TO22	
1081▼	2N35/5	150	.80	40	100		.40	50	6.0	1.0	75	e 2500	30	6.0		37			N-A	Ge	75J		TO 5	
1082	2N422	150	.80	35	100	12	.35	15	6.0	1.0	50	e 2500	19	.55	7	38			P-A	Ge	85J	N	TO 5	
1083	2N465	150	.80	45	100	12	.35	15	6.0	1.0	45	e 1400	18	.43	22	42			P-A	Ge	85J		TO 5	
1084	2N563	150	.80	30		10	.40	25	5.0	1.0	25	b 35	.70	2.5	16		30		P	Ge	85S			
1085	2N564	150	.80	30		10	.50	25	5.0	1.0	25	b 35	.70	2.5	16		30		P	Ge	85S		TO 5	
1086	2N633	150	.80	30	50	6.0	.40	25	6.0	1.0	60					25			P-A	Ge	85J		TO 9	
1087	2N923	150	.80	40	50	40	1.2	.025	6.0	1.0	21	b 2100	70	75		25			P	Si	200		TO18	
1088	2N924	150	.80	40	50	40	1.2	.025	6.0	1.0	47	b 2100	70	75		25			P	Si	200		TO18	
1089	2N925	150	.80	50	50	50	1.2	.025	6.0	1.0	17	b 2100	70	75		25			P	Si	200		TO18	
1090	2N926	150	.80	50	50	50	1.2	.025	6.0	1.0	38	b 2100	70	75		25			P	Si	200		TO18	
1091	2N927	150	.80	70	50	70	1.2	.025	6.0	1.0	15	b 2100	70	75		25			P	Si	200		TO18	
1092	2N928	150	.80	70	50	70	1.2	.025	6.0	1.0	37	b 2100	70	75		25			P	Si	200		TO18	
1093#	2SB66	150	.90	30	70	12	.40	14	6.0	1.0	75				7.5	27			P	Ge	85			
1094	2N45	150	1.00	45	50	15	.50	10	5.0	1.0	12				22	33	40		P-A	Ge	100			
1095	2N361	150	1.00	20	400	6.0	.35	10	6.0	1.0	75					34			P-A	Ge	85		TO 5	
1096	2N368	150	1.00	30	50	10			5.0	1.0	34								P-A	Ge	75S		OV 9	
1097	2N398A	150	1.00	105			.50		.35	5.0	20								P	Ge	100J		TO 5	
1098	2N466	150	1.00	35	100	12	.35	15	6.0	1.0	90	e 3000	20	.65	22	44			P-A	Ge	85J	M	TO 5	
1099	2N565	150	1.00	30		10	.40	25	5.0	1.0	55	b 30	.55	3.5	16		30		P	Ge	85S			
1100	2N566	150	1.00	30		10	.50	25	5.0	1.0	55	b 30	.55	3.5	16		30		P	Ge	85S		TO 5	
1101	2N632	150	1.00	24	50	6.0	.40	25	6.0	1.0	100					25			P-A	Ge	85J		TO 9	
1102#	2SB55	150	1.00	60	50	12	.33	20	1.0	50	80†								P-A	Ge	75J		TO 1	
1103#	2SB56	150	1.00	25	50	12	.33	14	1.0	50	80†								P-A	Ge	75J		TO 1	
1104♦#	2SB59	150	1.00	30	100	10		15	1.0	50	70†								P-AΔ	Ge	85J		TO 1	
1105♦#	2SB60	150	1.00	20	50	2.5		14	6.0	1.0	65					40			P-A	Ge	85J		TO 1	
1106♦#	2SB60A	150	1.00	20	50	2.5		14	1.0	50	70†					30			P-A	Ge	85J		TO 1	
1107#	2SB61	150	1.00	30	50			10	6.0	1.0	50						50		P-A	Ge	85S		RO16	
1108#	2SB65	150	1.00	30	100	12		15	6.0	1.0	65					35		3.0u	P-A†	Ge	85S		RO16	
1109#	2SB77	150	1.00	25	70	12	.40	14	1.5	50	70†								P	Ge	85			
1110#	2SB94	150	1.00	25	50	12	.33	14	6.0	1.0	150	b 30	.20	2.5					P-A	Ge	75J		TO 1	
1111#	2SB291	150	1.00	30	150	12		10	1.0	50	80†					35			P-A	Ge	75J		TO 9	
1112	GT364	150	1.00	30		2.0	.50	10	5.0	1.0	20	b 50	.50	3.5		18			N-A	Ge	100S		TO 5	
1113	GT365	150	1.00	30		2.0	.50	10	5.0	1.0	40	b 50	.50	3.5		18			N-A	Ge	100S		TO 5	
1114	GT366	150	1.00	30		2.0	.50	10	5.0	1.0	100	b 50	.50	3.5		18			N-A	Ge	100S		TO 5	
1115#	TF66	150	1.00	16	300	10	.30	18	.50	5.0	45								P	Ge	75J			
1116#	TF66/30	150	1.00	32	300	10	.30	18	.50	5.0	45								P	Ge	75J			
1117#	TF66/60	150	1.00	64	300		.30	18	.50	5.0	45								P	Ge	75J			
1118	TS605	150	1.00	12	400	5.0		10	1.0	.25	45†								P	Ge	100		TO 9	
1119	TS606	150	1.00	20	400	5.0		10	1.0	.25	45†								P	Ge	100		TO 9	
1120	2N360	150	1.20	20	400	6.0	.35	10	6.0	1.0	150								P-A	Ge	85	A	TO 5	
1121	2N467	150	1.20	35	100	12	.35	15	6.0	1.0	180	e 5500	22	.62	22	45			P-A	Ge	85		TO 5	
1122	2N631	150	1.20	25	50	6.0	.35	25	6.0	1.0	150					35			P-A	Ge	85		TO 9	
1123#	AC116	150	1.20	30	100	12	.20	15	6.0	4.0	90								P-A	Ge	75J			
1124#	AC123	150	1.20	45	100	12	.20	15	6.0	4.0	90								P-A	Ge	75J			

# 1. JUNCTION TRANSISTORS

IN ORDER OF MAXIMUM COLLECTOR DISSIPATION,  $f_{cb}$ , AND TYPE NO.



LINE No.	TYPE No.	Max. COLL. DISS. in Free Air (mw)	$f_{cb}$ (Mc.)	ABSOLUTE MAX. RATINGS @ 25°C					TYPICAL PARAMETERS @ 25°C										DESCRIPTION						
				BV <sub>cb</sub> (volt)	I <sub>c</sub> (ma)	BV <sub>eb</sub> (volt)	De-rate Free Air P/C/mw	Max. I <sub>cb0</sub> @ Max. V <sub>cb</sub> (μa)	BIAS		h <sub>fe</sub> or hFE - †	CIRCUIT			Max. NF (db)	Gain (db)	C <sub>ob</sub> (pf)	r <sub>bb</sub> × C <sub>ob</sub> (nsec)	t <sub>r</sub> (sec)	Type P - PNP N - NPN	Mat.	Max. Temp. (°C)	STATUS	Dwg. No.	
									V <sub>cb</sub> (volt)	I <sub>e</sub> (ma)		h <sub>i</sub> (ohm)	h <sub>o</sub> (μmho)	h <sub>r</sub> (×10 <sup>-4</sup> )											
1125#	BCY17	150	1.20	30	50		.60	5.0*	6.0	1.0	20Δ	e	1400	35	4.0	4.0		45			P-A	Si	150J		TO 5
1126	2N1128	150	1.25	25	250		.40	20	10	2.0	120	b	14	.50	1.8		45			P-A	Ge	85J		RO 2	
1127	2N369	150	1.30	30	50	10			5.0	1.0	95									P-A	Ge	75S		OV 9	
1128#	2G398	150	1.40	105	200	40	.40	30	5.0	1.0	79		34	.53	5.0	15		30		P-A†	Ge	85S		TO 5	
1129	2N359	150	1.50	20	400	6.0	.35	10	6.0	1.0	300						40			P-A	Ge	85		TO 5	
1130	2N363	150	1.50	32	100	6.0	.35	15	6.0	1.0	50							39		P-A	Ge	85		TO 5	
1131	2N568	150	1.50	30		10	.50	25	5.0	1.0	100	b	30	.40	4.0	16		30		P	Ge	85S		TO 5	
1132	2N594	150	1.50Δ	20		20	.60	25	5.0	1.0	30	b	30	.50	3.0		15			N-B†	Ge	85S		TO 9	
1133	TR45	150	1.50	45	400	5.0	.40	16	1.0	20	20†						20	1.5		P-A	Ge	85J		TO 5	
1134	2N362	150	2.00	18	100	6.0	.35	15	6.0	1.0	90							42		P-A	Ge	85		TO 5	
1135	2N445	150	2.00Δ	15		10	.60	25	4.5	1.0	35	b	28	.50	2.0		16	2.4		N-A	Ge	85S		TO 5	
1136	2N445A	150	2.00Δ	30		10	.50	25	.25	20	90†	b	28	.50	2.0		14	1.4	1.0u	N-Δ	Ge	100S		TO 5	
1137	2N569	150	2.00	30		10	.40	25	5.0	1.0	150	b	30	.40	5.0	16				P	Ge	85S		TO 5	
1138	2N570	150	2.00	30		10	.50	25	5.0	1.0	150	b	30	.40	5.0	16				P	Ge	85S		TO 5	
1139	2N1273	150	2.00	15	150	10	.40		1.0	50	50									P-A	Ge	85J		TO 5	
1140	2N1274	150	2.00	25	150	10	.40		1.0	50	50									P-A	Ge	85J		TO 5	
1141	2N1370	150	2.00	25	150	10	.40		1.0	50	80									P-A	Ge	85J		TO 5	
1142	2N1371	150	2.00	45	150	10	.40		1.0	50	80									P-A	Ge	85J		TO 5	
1143#	BCY18	150	2.00	30	50		.60	5.0*	6.0	1.0	40Δ	e	1800	40	5.0	4.0	45			P-A	Si	150J		TO 5	
1144	GT122	150	2.00	25		10	.50	25	5.0	1.0	90	b	40	.50	5.0	24	42	35		P-A†	Ge	100S		TO 5	
1145#	THP61	150	2.00	15	25			5.0												N	Si				
1146#	THP62	150	2.00	15	25			5.0												N	Si				
1147	TR650	150	2.00	45	400	25	.40	15	6.0	1.0	40						42	20		P-A	Ge	85J		TO 5	
1148	TR653	150	2.00	30	400	25	.40	15	6.0	1.0	40						42	20		P-A	Ge	85J		TO 5	
1149	TR44	150	2.20	45	400	5.0	.40	16	1.0	20	30†						20	1.3		P-A	Ge	85J		TO 5	
1150	2N364	150	2.50	30	50	2.0	.50	10	5.0	1.0	15	b	55	.10	.90		30	10		N-G	Ge	75S		OV 9	
1151	2N413	150	2.50	30	200	20	.35	5.0	6.0	1.0	30	b	25	.60	.30		10	12		P-A	Ge	85		TO 9	
1152	2N413A	150	2.50	30	200		.40				30						33			P	Ge	85J			
1153	2N529	150	2.50	15			.60	25	5.0	1.0Δ	18	b	28	1.0	3.0	24		14		§	Ge	85S		TO 5	
1154	2N1352	150	2.50Δ	30	200	15	.40	5.0	6.0	1.0	70†						18	1.3		P-A	Ge	85J		TO 5	
1155	TR43	150	2.50	45	400	5.0	.40	16	1.0	20	45†						20	1.4		P-A	Ge	85J		TO 5	
1156	TR320	150	2.50Δ	30	200	5.0	.40	16	1.0	20	50						20			P-A	Ge	85J		TO 5	
1157	TR323	150	2.50	16	200	5.0	.40	16	1.0	20	75						20			P-A	Ge	85J		TO 5	
1158	TR722	150	2.50Δ	30	200	10	.40	20	6.0	1.0	22						25	20		P-A	Ge	85J		TO 5	
1159	2N213	150	3.00	40	100	10	.40	50	6.0	1.0	150	e	5000	30	6.0		40			N-A	Ge	85J		TO22	
1160	2N356	150	3.00	20	500	20	.50	25	.25	100	30†	b		.50				14	1.0u	N-A†	Ge	85S		TO 5	
1161	2N356A	150	3.00	30		20	.50	25	.25	100	35†	b		.50				14	1.5u	N-A†	Ge	100S		TO 5	
1162	2N365	150	3.00	30	50	2.0	.50	10	5.0	1.0	34	b	55	.10	.90		30	10		N-G	Ge	75S		OV 9	
1163	2N481	150	3.00	12	20		.35	10	6.0	1.0	50						14			P-A	Ge	85		TO 5	
1164	2N520	150	3.00Δ	15		10	.60	25	4.5	1.0	40	b	30	.70	6.0		14	1.4		P-A	Ge	85S		TO 5	
1165	2N520A	150	3.00Δ	25		10	.50	25	.25	20	100†	b	30	.70	6.0		14	1.4	1.1u	P-Δ	Ge	100S		TO 5	
1166	2N530	150	3.00	15			.60	25	5.0	1.0Δ	23	b	28	.90	3.0	24		14		§	Ge	85S		TO 5	
1167	2N571	150	3.00	30		10	.40	25	5.0	1.0	200	b	30	.40	10	16		30		P	Ge	85S			
1168	2N572	150	3.00	30		10	.50	25	5.0	1.0	200	b	30	.40	10	16		30		P	Ge	85S		TO 5	
1169	2N595	150	3.00Δ	20		20	.60	25	5.0	1.0	45	b	30	.50	3.0		15			N-B†	Ge	85S		TO 9	

# 1. JUNCTION TRANSISTORS

IN ORDER OF MAXIMUM COLLECTOR DISSIPATION,  $f_{\alpha b}$ , AND TYPE NO.



LINE No.	TYPE No.	Max. COLL. DISS. in Free Air (mw)	$f_{\alpha b}$ (Mc.)	ABSOLUTE MAX. RATINGS @ 25°C					TYPICAL PARAMETERS @ 25°C											DESCRIPTION									
				$V_{cb}$ (volt)	$I_c$ (ma)	$V_{eb}$ (volt)	De-rate Free Air $^{\circ}C/mw$	Max. $I_{cbo}$ @ Max. $V_{cb}$ ( $\mu a$ )	BIAS		CIRCUIT			Max. NF (db)	Gain (db)	$C_{ob}$ (pf)	$r_{bb} \times C_{ob}$ (nsec)	$t_r$ (sec)	Type P - PNP N - NPN	Mat.	Max. Temp. ( $^{\circ}C$ )	STATUS	Dwg. No.						
									$V_{cb}$ (volt)	$I_e$ (ma)	$h_{fe}$ or $h_{FE} - \dagger$	$h_i$ (ohm)	$h_o$ ( $\mu mho$ )											$h_r$ ( $\times 10^{-4}$ )					
1170	2N679	150	3.00	25			.40	25	.50 $\phi$	3.0 $\phi$	30 $\dagger$													N-A $\dagger$	Ge	85J		RO 5	
1171	2N1012	150	3.00 $\Delta$	40		35	.50	25	.25 $\phi$	100 $\phi$	50 $\dagger$	b		.50										N-A $\dagger$	Ge	100S		TO 5	
1172	2N1302	150	3.00 $\Delta$	25	300	25	.40	6.0	.50	20 $\phi$	50													N-A $\dagger$	Ge	100S	N	TO 5	
1173	2N1303	150	3.00 $\Delta$	30	300	25	.40	6.0	.50	20 $\phi$	50													P-A $\dagger$	Ge	100S		TO 5	
1174 $\blacktriangledown$	2N1993	150	3.00	30	300	30	.50	10	1.0	10	50 $\Delta$													N	Ge	100		TO 5	
1175	2N1994	150	3.00	30	300	30	.40	6.0	.35 $\phi$	200 $\phi$	20 $\dagger$													N-AB	Ge	100S		TO 5	
1176#	OC4H	150	3.00 $\Delta$	25			.50	2.0	6.0	1.0	80													P-A	Ge	100S		TO 9	
1177 $\blacktriangledown$ #	SFT237	150	3.00	15	100	9.0	.40	15	6.0 $\phi$	1.0 $\phi$	100	e	2700	60	5.0	5.0								P-A	Ge	85J		TO 5	
1178#	SFT306	150	3.00	18	100	12	.40	10	6.0 $\phi$	1.0 $\phi$	28													P-A	Ge	85J		TO 1	
1179#	THP35	150	3.00	30	25			5.0																N	Si				
1180	TR721	150	3.00 $\Delta$	30	200	10	.40	20	6.0	1.0	45													P-A	Ge	85J		TO 5	
1181	TR321	150	3.10 $\Delta$	20	200	5.0	.40	16	1.0 $\phi$	20 $\phi$	80													P-A	Ge	85J		TO 5	
1182	2N366	150	3.50	30	50	2.0	.50	10	5.0	1.0	95	b	55	.10	.90									N-G	Ge	75S		OV 9	
1183	2N482	150	3.50	12	20		.35	10	6.0	1.0	50													P-A	Ge	85		TO 5	
1184	2N531	150	3.50	15			.60	25	5.0 $\phi$	1.0 $\Delta$	28	b	28	.80	3.0	24								P	Ge	85S		TO 5	
1185	TR482	150	3.50	14	200	5.0	.40	10	60	1.0	20													P-A	Ge	85J		TO 5	
1186	TR508	150	3.50	16	200	5.0	.40	16	1.0 $\phi$	20 $\phi$	125													P-A	Ge	85J		TO 5	
1187	2N438A	150	3.75	25	300	25	.40	10	1.0 $\phi$	50 $\phi$	25	b	27	1.0	4.0									N-A $\dagger$	Ge	85J		TO 9	
1188	2N117	150	4.00	45	25	1.0		10	5.0	1.0	15	b	42	.40	1.2	30								N-G	Si	150J	N	OV 6	
1189	2N160	150	4.00	40	25	1.0		10	4.5	1.0	13													N-G	Si	150			
1190	2N160A	150	4.00	40	25	5.0		10	4.5	1.0	13													N-G	Si	150			
1191	2N332	150	4.00	45	25	1.0		2.0	5.0	1.0	15													N-GD	Si	175J	N	TO 5	
1192	2N394	150	4.00 $\Delta$	10 $\phi$	200			6.0		10 $\phi$	20 $\dagger$													P- $\dagger$	Ge	85J		TO 5	
1193	2N425	150	4.00	30	400	20	.25	4.0	.25 $\phi$	1.0 $\Delta$	30 $\dagger$													P-A	Ge	85	A	TO 5	
1194	2N532	150	4.00	15			.50	25	5.0 $\phi$	1.0 $\Delta$	33	b	28	.70	3.0									$\S$	Ge	85S		TO 5	
1195	2N1149	150	4.00	45	25	1.0	.84	2.0	5.0	1.0	13													N-G	Si	175S		OV 9	
1196	2N1343	150	4.00	20	400	10	.40	6.0	.35 $\phi$	50 $\phi$	40 $\dagger$													P-A	Ge	85J		TO 5	
1197	2N1404	150	4.00 $\Delta$	25	300	20	.40	5.0	.20 $\phi$	24 $\phi$	100 $\dagger$													P-A	Ge	85J		TO 5	
1198	2N1586	150	4.00	15	25				5.0 $\phi$	1.0	18														N-G	Si			OV 9
1199	2N1587	150	4.00	30	25				5.0 $\phi$	1.0	18														N-G	Si			OV 9
1200	2N1588	150	4.00	60	25				5.0 $\phi$	1.0	18														N-G	Si			OV 9
1201	2N1808	150	4.00	25	300	20	.40	5.0	.50 $\phi$	24 $\phi$	60 $\dagger$													N-A	Ge	100S		TO 5	
1202#	2S001	150	4.00 $\Delta$	45	25	1.0	1.3		5.0	1.0	14	b	42	.40	1.2	20									N-G	Si	175J		TO 5
1203#	2S002	150	4.00 $\Delta$	45	25	1.0	1.3		5.0	1.0	25	b	42	.40	2.5	20									N-G	Si	175J		TO 5
1204#	2S004	150	4.00 $\Delta$	45	25	1.0	1.3		5.0	1.0	50	b	42	.40	4.0	20									N-G	Si	175J		TO 5
1205	GT904	150	4.00 $\Delta$	20			.50	25	.20 $\phi$	1.0 $\Delta$	30 $\dagger$	b		.50											N-A	Ge	85S		TO 5
1206	GT948	150	4.00 $\Delta$	20		5.0	.50	20	3.5 $\phi$	1.0 $\Delta$	30 $\dagger$	b		.50											N-A	Ge	100S		TO 5
1207	TR-C45	150	4.00	12		9.0	.40	10	6.0	1.0	40													P	Ge	85J		TO 5	
1208	2N395	150	4.50	15 $\phi$	200	20	.40	6.0	5.0	1.0	87	b			90										P-A $\dagger$	Ge	100S	N	TO 5
1209	2N533	150	4.50	15			.50	25	5.0 $\phi$	1.0 $\Delta$	38	b	28	.60	3.0										$\S$	Ge	85S		TO 5
1210	2N118	150	5.00	45	25	1.0		10	5.0	1.0	29	b	42	.40	2.5	30									N-G	Si	150J	M	OV 6
1211	2N161	150	5.00	40	25	1.0		10	4.5	1.0	28														N-G	Si	150		
1212	2N161A	150	5.00	40	25	5.0		10	4.5	1.0	28														N-G	Si	150		
1213	2N315	150	5.00	20	500	20	.50	25	.20 $\phi$	100 $\phi$	20 $\dagger$	b		.50											P-A $\dagger$	Ge	85S		TO 5
1214	2N315A	150	5.00	30		20	.50	25	.20 $\phi$	100 $\phi$	35 $\dagger$	b		.50											P-A $\dagger$	Ge	100S		TO 5

# 1. JUNCTION TRANSISTORS

IN ORDER OF MAXIMUM COLLECTOR DISSIPATION,  $f_{cb}$ , AND TYPE NO.



LINE No.	TYPE No.	Max. COLL. DISS. in Free Air (mw)	$f_{cb}$ (Mc.)	ABSOLUTE MAX. RATINGS @ 25°C					TYPICAL PARAMETERS @ 25°C										DESCRIPTION					
				BV <sub>cb</sub> (volt)	I <sub>c</sub> (ma)	BV <sub>eb</sub> (volt)	De-rate Free Air P/C/mw	Max. I <sub>cb0</sub> @ Max. V <sub>cb</sub> (μa)	BIAS		h <sub>fe</sub> or hFE - †	CIRCUIT			Max. NF (db)	Gain (db)	C <sub>ob</sub> (pf)	r <sub>bb</sub> × C <sub>ob</sub> (nsec)	t <sub>r</sub> (sec)	Type P - PNP N - MPN	Mat.	Max. Temp. (°C)	STATUS	Dwg. No.
									V <sub>cb</sub> (volt)	I <sub>e</sub> (ma)		h <sub>i</sub> (ohm)	h <sub>o</sub> (μmho)	h <sub>r</sub> (×10 <sup>-4</sup> )										
1215	2N333	150	5.00	45	25	1.0		2.0	5.0	1.0	29						34	7.0		N-GD	Si	175J	N	TO 5
1216	2N446	150	5.00Δ	15		10	.60	25	4.5∅	1.0	60							16	2.8	N-A	Ge	85S		TO 5
1217	2N446A	150	5.00Δ	30		10	.50	25	.25∅	20∅	150†	b	28	.50	3.0			14	2.1	N-ΔΔ	Ge	100S		TO 5
1218	2N450	150	5.00Δ	20	125	10	.40	6.0	5.0	1.0	130	b						12	1.2	P-A†	Ge	85J	T	RO32
1219	2N596	150	5.00Δ	20		20	.60	25	5.0∅	1.0	60	b	30	.50	4.0			15		N-B†	Ge	85S		TO 9
1220	2N634	150	5.00Δ	20	200	10	.40	10	.75∅	200∅	15†							12		N-A	Ge	85		TO 9
1221	2N634A	150	5.00Δ	25	300	25		6.0			40†							12		N-A	Ge			TO 5
1222	2N1115	150	5.00Δ	15∅	125			6.0												P	Ge	85J		
1223	2N1150	150	5.00	45	25	1.0	.84	2.0	5.0	1.0	24		42	.40	250	20	39	7.0	N-G	Si	175		OV 9	
1224	2N1299	150	5.00	40			.50			50	110									N-A	Ge	85J		TO 5
1225	2N1304	150	5.00Δ	25	300	25	.40	6.0	.50	20∅	70							20		N-A†	Ge	100S	N	TO 5
1226	2N1305	150	5.00Δ	30	300	25	.40	6.0	.50	20∅	70							20		P-A†	Ge	100S	N	TO 5
1227	2N1347	150	5.00	20	400	10	.40	6.0	1.0∅	10∅	80†							12	1.2	P-A	Ge	85J		TO 5
1228	2N1995	150	5.00	25	300	25	.40	6.0	.35∅	200∅	25†									N-AB	Ge	100S		TO 5
1229	GT123	150	5.00Δ	20		10	.50	6.0	1.0∅	10∅	90	b	30	.70	6.0			15		P-A†	Ge	85S		TO 5
1230	GT167	150	5.00Δ	25		15	.50	25	1.0∅	8.0∅	25†	b	28	.50	3.0			16		N-A†	Ge	85S		TO 5
1231♦#	SFT259	150	5.00§	20	250	20	.40	5.0	0.0	50∅	20†Δ									N-A	Ge	85J		TO 5
1232#	THP36	150	5.00	30	25			5.0												N	Si			
1233#	TK33C	150	5.00	30		20	.33		4.5∅	1.0∅	40									N-A†	Ge	75		RO47a
1234	UST760	150	5.00	15∅			.40	1.0	6.0	1.0	40							14		P-A	Ge			
1235	2N483	150	5.50	12	20		.35	10	6.0	1.0	60							38	12±2	P-A	Ge	85		TO 5
1236♦#	SFT226	150	5.50§	40	250	24	.40	10	.50∅	10∅	25†Δ									P-A	Ge	85J		TO 5
1237	2N119	150	6.00	45	25	1.0		10	5.0	1.0	63							7.0		N	Si	150J	N	OV 6
1238	2N163	150	6.00	40	25	1.0		10	4.5	1.0	49						25	40	7.0	N-G	Si	150		
1239	2N163A	150	6.00	40	25	5.0		10	4.5	1.0	49						25	40	7.0	N-G	Si	150		
1240	2N335	150	6.00	45	25	1.0		2.0	5.0	1.0	63							37	1.0	N-GD	Si	175J	N	TO 5
1241	2N357	150	6.00	20	500	20	.50	25	.25∅	200∅	30†	b		.50				14		N-A†	Ge	85S		TO 5
1242	2N357A	150	6.00	30		20	.50	25	.25∅	200∅	40†	b		.50				14		N-A†	Ge	100S		TO 5
1243	2N377	150	6.00	25	200	15	.50	10	.50∅	30∅	40†							15		N-A†	Ge	100J	N	TO 5
1244	2N377A	150	6.00	40	200	15	.50	40	.50∅	30∅	40†									N-A	Ge	100J		TO 5
1245	2N385	150	6.00	25	200	15	.50	10	.50∅	30∅	70†							15		N-A†	Ge	100J		TO 5
1246	2N426	150	6.00	30	400	20	.35	4.0	.25∅	1.0Δ	40†							14		P-A	Ge	85J	A	TO 5
1247	2N789	150	6.00	45	25	1.0	1.0	2.0∅	5.0∅	1.0∅	20Δ	b	50	.50	2.0	30		5.0		N-D	Si	175J		u 2
1248	2N902	150	6.00	45	25	1.0	1.0	2.0∅	5.0∅	1.0∅	20Δ	b	50	.50	2.0	30		5.0		N-D	Si	175J		u 10
1249	2N1152	150	6.00	45	25	1.0		2.0	5.0	1.0	63							37	7.0	N-GD	Si	175J		OV 9
1250	2N1589	150	6.00	15	25				5.0∅	1.0	50									N-G	Si			OV 9
1251	2N1590	150	6.00	30	25				5.0∅	1.0	50									N-G	Si			OV 9
1252	2N1591	150	6.00	60	25				5.0∅	1.0	50									N-G	Si			OV 9
1253	2SA65	150	6.00	18	200	12	.25	12	6.0	1.0	70									P-A	Ge	75J		TO 1
1254#	2SA204	150	6.00	30	200	20		6.0∅	6.0∅	1.0	60†	b	28	.90	12			15		P-A	Ge	85J		TO 5
1255▼	T2357	150	6.5§Δ	Matched pair of T2363																P-PAS	Si	140S	T	TO18
1256▼	T2363	150	6.5§Δ	30	50	30	.77	.01											9.0Δ	P-PA	Si	140S	T	TO18
1257#	SFT307	150	7.00	18	100	12	.40	10	6.0∅	1.0∅	40						39	8.0	P-A	Ge	85J		TO 1	
1258	2N120	150	7.00	45	25	1.0		10	5.0	1.0	200									N	Si	150J		OV 6
1259	2N302	150	7.00	10	200			10	6.0	1.0	45									P	Ge	85		

# 1. JUNCTION TRANSISTORS

IN ORDER OF MAXIMUM COLLECTOR DISSIPATION,  $f_{\alpha b}$ , AND TYPE NO.



LINE No.	TYPE No.	Max. COLL. DISS. in Free Air (mw)	$f_{\alpha b}$ (Mc.)	ABSOLUTE MAX. RATINGS @ 25°C					TYPICAL PARAMETERS @ 25°C										DESCRIPTION							
				$V_{cb}$ (volt)	$I_c$ (ma)	$V_{eb}$ (volt)	De-rate Free Air $P_{c/mw}$	Max. $I_{cbo}$ @ Max. $V_{cb}$ ( $\mu a$ )	BIAS		$h_{fe}$ or $h_{FE} - \dagger$	CIRCUIT			Max. NF (db)	Gain (db)	$C_{ob}$ (pf)	$r_{bb} \times C_{ob}$ (nsec)	$t_r$ (sec)	Type P - NPN N - NPN	Mat.	Max. Temp. (°C)	STATUS	Dwg. No.		
									$V_{cb}$ (volt)	$I_e$ (ma)		$h_i$ (ohm)	$h_o$ ( $\mu mho$ )	$h_r$ ( $\times 10^{-4}$ )												
1260	2N336	150	7.00	45	25	1.0		10	5.0	1.0	200						43	7.0			N-GD	Si	175J	N	TO 5	
1261	2N394A	150	7.00§	30	200	20	2.5	6.0∅	30Δ		70†	2000					12				P-A	Ge	100S		TO 5	
1262	2N414	150	7.00	30	200	20	.35	5.0	6.0	1.0	60	b	25	.62	.50		16	12			P-A	Ge	85		TO 5	
1263	2N414A	150	7.00	30	200		.40				60						35				P	Ge	85J			
1264	2N1000	150	7.00Δ	40		40	.50	15	.50∅	100∅	35†	b		.50				14	.50u		N-A†	Ge	100S	A	TO 5	
1265	2N1153	150	7.00	45	25	1.0		2.0			200						43	7.0			N-GD	Si	175J		OV 9	
1266	2N1344	150	7.00	15	400	10	.40	10	1.0∅	20∅	90†						12	1.0	.70u		P-A	Ge	85J		TO 5	
1267	2N1592	150	7.00	15	25				5.0∅	1.0	140										N-G	Si			OV 9	
1268	2N1593	150	7.00	30	25				5.0∅	1.0	140										N-G	Si			OV 9	
1269	2N1594	150	7.00	60	25				5.0∅	1.0	140										N-G	Si			OV 9	
1270	2N439A	150	7.50	25	300	25	.40	10	1.0∅	50∅	45	b	27	1.0	4.0			9.0	2.3	.50u	N-A†	Ge	85J		TO 9	
1271	2N485	150	7.50	12	10		.35	10	6.0	1.0	50						12				P-A	Ge	85J		TO 5	
1272♦#	SFT227	150	7.50§	30	250	18	.40	10	.50∅	10∅	35†Δ								65n∅		P-A	Ge	85J		TO 5	
1273	2N118A	150	8.00	45	25	1.0		10	5.0	1.0	54	b	42	.40	4.0			7.0			N-G	Si	150J		OV 6	
1274	2N123	150	8.00	20	125	10	.60	6.0	5.0	1.0	65	b	28	.60	8.0			15	.45u		P-A†	Ge	85S	F	RO32	
1275▼	2N123/5	150	8.00	20	125	10	.60	6.0	5.0	1.0	65	b	28	.60	8.0			15	.45u		P-A†	Ge	85S		TO 5	
1276	2N162	150	8.00	40	25	1.0		5.0	4.5	1.0	39					25	38	7.0			N-G	Si	150			
1277	2N162A	150	8.00	40	25	5.0		5.0	4.5	1.0	39					25	38	7.0			N-G	Si	150			
1278	2N334	150	8.00	45	25	1.0		10	5.0	1.0	54						35	7.0			N-GD	Si	175J	N	TO 5	
1279	2N385A	150	8.00	40	200	15	.50	40	.50	30∅	70										N-A†	Ge	100J		TO 5	
1280	2N388	150	8.00	25	200	15	.50	10	.50∅	30	150†							15	.60u		N-A†	Ge	100J	N	TO 5	
1281	2N396	150	8.00	20∅	200	20	.40	6.0	5.0	1.0	90	b			90		12	1.6	.40u		P-A†	Ge	100S	N	TO 5	
1282	2N396A	150	8.00	30	200	20	.40	6.0	1.0∅	10∅	80†						12				P-A	Ge	85J	N	TO 5	
1283	2N404A	150	8.00	40	150	25	.50	5.0∅									20				P-A†	Ge	100J		TO 5	
1284	2N521	150	8.00Δ	15		10	.60	25	4.5∅	1.0	7.0	b	30	.70	10		14	2.1			P-A	Ge	85S		TO 5	
1285	2N521A	150	8.00Δ	25		10	.50	25	.25∅	20∅	150†	b	30	.70	10			14	2.1	.40u		P-AD	Ge	100S		TO 5
1286	2N790	150	8.00	45	25	1.0	1.0	2.0∅	5.0∅	1.0∅	40∅	b	50	.50	3.7	30		5.0			N-D	Si	175J		u 2	
1287	2N792	150	8.00	45	25	1.0	1.0	2.0∅	5.0∅	1.0∅	88∅	b	50	.50	3.7	30		5.0			N-D	Si	175J		u 2	
1288	2N905	150	8.00	45	25	1.0	1.0	2.0∅	5.0∅	1.0∅	88∅	b	50	.50	3.7	30		5.0			N-D	Si	175J		u 10	
1289	2N1093	150	8.00	30	250	15	.40	6.0	5.0	1.0∅	125	b	34	.30	9.0			13	.80u		P-A†	Ge	85J	T		
1290	2N1151	150	8.00	45	25	1.0		2.0	5.0	1.0	56						35	7.0			N-GD	Si	175J		OV 9	
1291	2N1624	150	8.00	25		15	.50	10	.50∅	30∅	120†							24	.60u		N-A†	Ge	100J		TO 5	
1292	2N1996	150	8.00	20	300	20	.40	6.0	.35∅	200∅	35†										N-AB	Ge	100S		TO 5	
1293	2N2085	150	8.00	33	500		.50	5.0∅	.25∅	10	100							20			N-A	Ge	100		TO 5	
1294#	64T1	150	8.00	30	200	20		6.0	1.0	10	80†										P	Ge				
1295#	OC5K	150	8.00Δ	25			.50	2.0	6.0	1.0	120						16	14			P-A	Ge	100S		TO 9	
1296#	OS14	150	8.00	30	50			50													P-∅	Ge	75J		X 6	
1296a▼	ST1242	150	8.00	40	25	2.0			5.0	1.0	30		55	.50	3.7	20		10			N	Si	175		TO 5	
1297	TI492	150	8.00	40	25	1.0	.67	2.0	5.0∅	1.0	15Δ	b	55	.50	3.7			10			N-G	Si	125J		TO 5	
1298	TR-C44	150	8.00	6.0		6.0	.40	10	6.0	1.0	80						25	26	.15		P	Ge	85J			
1299#	2G394	150	9.00	10∅	200	20	.40	6.0	1.0	10∅	70†							12			P-A†	Ge	85J			
1300	2N358	150	9.00	20	500	20	.50	25	.25∅	300∅	30†	b		.50				14	.40u		N-A†	Ge	85S		TO 5	
1301	2N358A	150	9.00	30		20	.50	25	.25∅	300∅	40†	b		.50				14	.40u		N-AD	Ge	100S	M	TO 5	
1302	2N447	150	9.00Δ	15	10		.60	25	4.5∅	1.0	125	b	27	.50	6.0			16	3.5		N-A	Ge	85S		TO 5	
1303	2N447A	150	9.00Δ	30	10		.50	25	.25∅	20∅	200†	b	27	.50	6.0			14	2.4	.40u		N-AD	Ge	100S		TO 5

# 1. JUNCTION TRANSISTORS

IN ORDER OF MAXIMUM COLLECTOR DISSIPATION,  $f_{\alpha b}$ , AND TYPE NO.



LINE No.	TYPE No.	Max. COLL. DISS. in Free Air (mw)	$f_{\alpha b}$ (Mc.)	ABSOLUTE MAX. RATINGS @ 25°C					TYPICAL PARAMETERS @ 25°C											DESCRIPTION				
				V <sub>cb</sub> (volt)	I <sub>c</sub> (ma)	V <sub>eb</sub> (volt)	De- rate Free Air PC/mw	Max. I <sub>cbo</sub> @ Max. V <sub>cb</sub> ( $\mu$ a)	BIAS		h <sub>fe</sub> or h <sub>FE</sub> - †	CIRCUIT			Max. NF (db)	Gain (db)	C <sub>ob</sub> (pf)	r <sub>bb</sub> x C <sub>ob</sub> (nsec)	t <sub>r</sub> (sec)	Type P - PNP N - NPN	Mat.	Max. Temp. (°C)	S T A T U S	Dwg. No.
									V <sub>cb</sub> (volt)	I <sub>e</sub> (ma)		h <sub>i</sub> (ohm)	h <sub>o</sub> ( $\mu$ mho)	h <sub>r</sub> (x10 <sup>-4</sup> )										
1304♦#	SFT260	150	9.00§	20	250	20	.40	5.0	0.0	50∅	25Δ†									N-A†	Ge	85J		TO 5
1305	2N415A†	150	10.0	30	200		.40				80									P-A	Ge	85J		
1306	2N416	150	10.0	30	200	20	.35	5.0	6.0	1.0	80	b	25	.65	.70					P-A	Ge	85	A	TO 9
1307	2N440A	150	10.0	25	300	25	.40	10	1.0∅	50∅	70	b	27	1.0	4.0					N-A†	Ge	85J		TO 9
1308	2N484	150	10.0	12	20		.35	10	6.0	1.0	90									P-A	Ge	85		TO 5
1309	2N635	150	10.0Δ	20	200	10	.40	10	.75∅	200∅	20†									N-A	Ge	85		TO 9
1310	2N635A	150	10.0Δ	25	300	25		6.0			80†									N-A	Ge			TO 5
1311	2N1114	150	10.0	25	200	15	.50	30	.20∅	20∅	110†									N-A	Ge	100J		TO 5
1312	2N1306	150	10.0Δ	25	300	25	.40	6.0	.50	20∅	100									N-A†	Ge	100S	N	TO 5
1313	2N1307	150	10.0Δ	30	300	25	.40	6.0	.50	20∅	100									P-A†	Ge	100S	N	TO 5
1314	2N1345	150	10.0	10	400	6.0	.40	6.0	.30∅	400∅	60†									P-A	Ge	85J		TO 5
1315	2N1346	150	10.0	12	400	8.0	.40	5.0	.25∅	.35∅	125†									P-A	Ge	85J		TO 5
1316	2N1366	150	10.0	20			.35		6.0∅	1.0∅	70†									A-†	Ge			TO 5
1317	2N1367	150	10.0	20			.35		6.0∅	1.0∅	70†									A-†	Ge			TO 5
1318	2N1969	150	10.0	30	400	20	.40	5.0∅	.25		125									P-A	Ge	100		TO 5
1319#	2S003	150	10.0Δ	45	25	1.0	1.3		5.0	1.0	25	b	42	.40	4.0	20				N-G	Si	175J		TO 5
1320#	2SA66	150	10.0	18	200	12	.25	12	6.0	1.0	70									P-A	Ge	75J		TO 1
1321#	65T1	150	10.0	30	200	20		6.0	1.0	10	90†									P	Ge			
1322▼	R212	150	10.0Δ	30	400	20	.40	5.0∅	.35∅	10Δ	20†Δ									P-A	Ge	85J		TO 5
1323	SYL1655	150	10.0Δ	30	400	20	.40	20												P-A†	Ge	100S	N	
1324#	THP106	150	10.0	30	25	1.0		2.0	5.0	1.0	25		50	.50	5.0	17				N	Si			
1325	UST761	150	10.0	10∅			.40	1.0	6.0	1.0	75									P-A	Ge			
1326	2N427	150	11.0	30	400	20	.35	4.0	.25∅	1.0Δ	55†									P-A	Ge	85	A	TO 5
1327	2N518	150	11.0	45	125	30	.40	6.0	1.0∅	10∅	60	b			100					P-A	Ge	85J		RO32
1328	2N791	150	11.0	45	25	1.0	1.0	2.0∅	5.0∅	1.0∅	90∇	b	50	.50	3.7	30				N-D	Si	175J		u 2
1329	2N904	150	11.0	45	25	1.0	1.0	2.0∅	5.0∅	1.0∅	90∇	b	50	.50	3.7	30				N-D	Si	175J		u 10
1330	2N1417	150	11.0	15		2.0	.80	10	6.0∅	1.0	60		60	.40	5.0	19				N	Si	150A		
1331	2N1418	150	11.0	30		2.0	.80	1.0	6.0∅	1.0	60		60	.40	5.0	19				N	Si	150A		
1332#	TK34C	150	11.0	20		15	.33		4.5∅	3.0∅	80									N-A†	Ge	75		RO47a
1333	2N316	150	12.0	20	500	20	.50	25	.20∅	200∅	30†	b		.50						P-A†	Ge	85S		TO 5
1334	2N316A	150	12.0	30		20	.50	25	.20∅	200∅	35†	b		.50						P-A†	Ge	100S		TO 5
1335	2N388A	150	12.0	40	200	15	.50	40	.50	30∅	120									N-A†	Ge	100		TO 5
1336	2N397	150	12.0	15∅	200	20	.40	6.0	5.0	1.0	90	b			110					P-A†	Ge	100S	F	TO 5
1337	2N428A	150	12.0	30	1A		.50	4.0∅	.25∅	10	100†									P-A	Ge	100		TO 5
1338	2N486	150	12.0	12	10		.35	10	6.0	1.0	100									P-A	Ge	85		TO 5
1339	2N1605	150	12.0	25	100	12	.50	20												N-A†	Ge	100		TO 5
1340	4C28	150	12.0	40	25	2.0	.67	2.0∅	5.0∅	1.0	15	b	50	.20	3.0					N-D	Si	125J	T	TO 5
1341	4C29	150	12.0	40	25	2.0	.67	2.0∅	5.0∅	1.0	30	b	50	.20	3.0					N-D	Si	125J	T	TO 5
1342	4C30	150	12.0	40	25	2.0	.67	2.0∅	5.0∅	1.0	55	b	50	.20	3.0					N-D	Si	125J	T	TO 5
1343	4C31	150	12.0	40	25	2.0	.67	2.0∅	5.0∅	1.0	115	b	50	.20	3.0					N-D	Si	125J	T	TO 5
1344♦#	SFT228	150	12.0§	24	250	12	.40	10	.50∅	10∅	50†Δ									P-A	Ge	85J		TO 5
1345	2N793	150	13.0	45	25	1.0	1.0	2.0∅	5.0∅	1.0∅	330∇	b	50	.50	3.7	30				N-D	Si	175J		u 2
1346	2N903	150	13.0	45	25	1.0	1.0	2.0∅	5.0∅	1.0∅	40∇	b	50	.50	3.7	30				N-D	Si	175J		u 10
1347	2N906	150	13.0	45	25	1.0	1.0	2.0∅	5.0∅	1.0∅	330∇	b	50	.50	3.7	30				N-D	Si	175J		u 10
1348♦#	SFT261	150	13.0§	20	250	20	.40	5.0	0.0	50∅	30Δ†									N-A	Ge	85J		TO 5



# 1. JUNCTION TRANSISTORS

IN ORDER OF MAXIMUM COLLECTOR DISSIPATION,  $f_{\alpha b}$ , AND TYPE NO.



LINE No.	TYPE No.	Max. COLL. DISS. in Free Air (mw)	$f_{\alpha b}$ (Mc.)	ABSOLUTE MAX. RATINGS @ 25°C					TYPICAL PARAMETERS @ 25°C										DESCRIPTION					
				BV <sub>cb</sub> (volt)	I <sub>c</sub> (ma)	BV <sub>eb</sub> (volt)	De-rate Free Air C/mw	Max. I <sub>cbo</sub> @ Max. V <sub>cb</sub> (μa)	BIAS		h <sub>fe</sub> or h <sub>FE</sub> - †	CIRCUIT			Max. NF (db)	Gain (db)	C <sub>ob</sub> (pf)	r <sub>bb</sub> × C <sub>ob</sub> (nsec)	t <sub>r</sub> (sec)	Type P - PNP N - NPN	Mat.	Max. Temp. (°C)	STATUS	Dwg. No.
									V <sub>cb</sub> (volt)	I <sub>e</sub> (ma)		h <sub>i</sub> (ohm)	h <sub>o</sub> (μmho)	h <sub>r</sub> (×10 <sup>-4</sup> )										
1349#	SFT308	150	13.0	18	100	12	.40	10	6.0∅	1.0∅	70						9.0		150n	P-A	Ge	85J		TO 1
1350	2N858	150	14.0§	40	50	25	.77	.10	.50∅	5.0∅	20†	e	1.4K	38	3.5		5.0		125n	P-PA	Si	140A		TO18
1351	2N859	150	14.0§	40	50	25	.77	.10	.50∅	5.0∅	35†	e	2.5K	50	3.5		5.0		115n	P-PA	Si	140A		TO18
1352	2N860	150	14.0§	25	50	20	.77	.10	.50∅	5.0∅	20†	e	1.4K	35	3.5		5.0		100n	P-PA	Si	140A		TO18
1353	2N862	150	14.0§	15	50	10	.77	.10	.50∅	5.0∅	20†	e	1.4K	35	3.5		5.0							TO18
1354	2SA67	150	14.0	18	200	12	.25	12	6.0	1.0	70						14	2.8	.10u	P-A	Ge	75J		TO 1
1355	2N522	150	15.0	15		10	.60	25	4.5∅	1.0	120	b	30	.70	14		14	2.8	.30u	P-A	Ge	85S		TO 5
1356	2N522A	150	15.0Δ	25		10	.50	25	.25∅	20∅	200†	b	30	.70	14		12			P-AD	Ge	100S		TO 5
1357	2N636	150	15.0Δ	20	200	10	.40	10	.75∅	200∅	35†						12			N-A	Ge	85		TO 9
1358	2N636A	150	15.0Δ	25	300	25		6.0			100†						12		.24u	N-A	Ge			TO 5
1359	2N1171	150	15.0	30	100	20	.35	25	.25	1.0Δ	60						12	1.2		A	Ge	100	T	TO 5
1360	2N1276	150	15.0Δ	40	25					1.0∅	9.0†									N	Si	200S		TO 5
1361	2N1277	150	15.0Δ	40	25					1.0∅	18†									N	Si	200S		TO 5
1362	2N1278	150	15.0Δ	40	25					1.0∅	37†									N	Si	200S		TO 5
1363	2N1279	150	15.0Δ	40	25					1.0∅	76†									N	Si	200S		TO 5
1364	2N1308	150	15.0Δ	25	300	25	.40	6.0	.50	20∅	150						20			N-A†	Ge	100S	N	TO 5
1365	2N1309	150	15.0Δ	30	300	25	.40	6.0	.50	20∅	150						20			P-A†	Ge	100S	N	TO 5
1366▼	2N3000	150	15.0	45	400	35	.40	16∅	5.0	1.0	110						10	.80	.30u	P-AD	Ge	85J		TO 5
1367#	OC5N	150	15.0Δ	20			.50	2.0	6.0	1.0	150					16	14			P-A	Ge	100S		TO 9
1368	2N428	150	17.0	30	400	20	.35	4.0	.25∅	1.0Δ	80†						14		.40u	P-A	Ge	85	M	TO 5
1369▼#	2G306	150	18.0§	15	200	10	.80	10	6.0	1.0	160						8.5	1.0	.03u	P-A	Ge	85A		RO44
1370	2N1118A	150	18.0*	25	50	10	.76	1.0	6.0∅	1.0	25	b	50	1.5			6.0	1.2		P	Si	140J		TO 5
1371	2N2165	150	18.0§	30		30	.77	.02∅	6.0∅	1.0	4.5						6.0			P-A†	Si	140S		TO 5
1372	2N2166	150	18.0§	15		15	.77	.02∅	6.0∅	1.0	4.5						6.0			P-A†	Si	140S		TO 5
1373	2N317	150	20.0	20	500	20	.50	25	.20∅	400∅	30†	b		.50			14		.30u	P-A†	Ge	85S		TO 5
1374	2N317A	150	20.0	25		20	.50	25	.25∅	400∅	40†	b		.50			14		.30u	P-A†	Ge	100S		TO 5
1375	2N417	150	20.0	30	200	20	.35	5.0	6.0	1.0	140	b	26	.77	1.1		27			P-A	Ge	85J	A	TO 5
1376	2N496	150	20.0§	10	50	10	.77	.10	.50∅	15∅	11†						6.0	1.5		PPA†	Si	140J	A	TO 1
1377	2N1119	150	20.0§	10	50	10	.76	.10	.50	15	25†						7.0	1.5		P-PA	Si	140	A	TO 5
1378	2N1205	150	20.0	20		1.0	.80	.50	10∅	2.0	10						12	30		N	Si	150A		TO 5
1379	2N1528	150	20.0	25	10		1.0										4.0			N-D	Si	175A		TO 5
1380	2N2162	150	20.0§	30		30	.77	.01∅	3.0∅	1.0	35						6.0			P-A†	Si	140S		TO 5
1381	2N2163	150	20.0§	15		15	.77	.01∅	3.0∅	1.0	35						6.0			P-A†	Si	140S		TO 5
1382▼	ST1243	150	20.0	40	25	2.0			5.0	1.0	30†						2.0			N	Si	175		TO 5
1383▼	ST1244	150	20.0	40	25	2.0			5.0	1.0	80†						2.0			N	Si	175		TO 5
1384▼	ST1290	150	20.0	20	25	2.0			5.0	1.0	180†						2.0			N	Si	175		TO 5
1385	UST762	150	20.0	10∅			.40	1.0	6.0	1.0	100						14			P-A	Ge			
1386	2N495	150	21.0	25	50	10	.77	1.0	6.0	1.0	30	e	1.5K	35	3.5		7.0	1.3		P-PA	Si	140J	A	TO 1
1387	2N523	150	21.0Δ	15		10	.60	25	4.5∅	1.0	200	b	30	.70	20		14	3.8		P-A	Ge	85S		TO 5
1388	2N523A	150	21.0Δ	25		10	.50	25	.25∅	20∅	250†	b	30	.70	20		14	3.8	.20u	P-AD	Ge	100S		TO 5
1389	2N1118	150	21.0*	25	50	.10	.77	1.0	6.0∅	1.0∅	30	e	1.4K	35			6.0	1.3		P-PA	Si	140	A	TO 5
1390	2N861	150	22.0§	25	50	20	.77	.10	.50∅	5.0∅	35†	e	2.5K	50	3.5		5.0		105n	P-PA	Si	140A		TO18
1391	2N863	150	22.0§	15	50	10	.77	.10	.50∅	5.0∅	35†	e	2.5K	50	3.5		5.0		90n	P-PA	Si	140A		TO18
1392	2N864	150	22.0§	6.0	50	6.0	.77	.10	.50∅	5.0∅	35†	e	2.5K	50	3.5		5.0		75n	P-PA	Si	140A		TO18
1393	2N1018	150	25.0	30			.35		.25∅	1.0Δ	140†									A-†	Ge			TO 5

# 1. JUNCTION TRANSISTORS

IN ORDER OF MAXIMUM COLLECTOR DISSIPATION,  $f_{\alpha b}$ , AND TYPE NO.



LINE No.	TYPE No.	Max. COLL. DISS. in Free Air (mw)	$f_{\alpha b}$ (Mc.)	ABSOLUTE MAX. RATINGS @ 25°C					TYPICAL PARAMETERS @ 25°C										DESCRIPTION					
				$V_{cb}$ (volt)	$I_c$ (ma)	$V_{eb}$ (volt)	De-rate Free Air C/mw	Max. $I_{cbo}$ @ Max. $V_{cb}$ ( $\mu A$ )	BIAS		$h_{fe}$ or $h_{FE} - \dagger$	CIRCUIT			Max. NF (db)	Gain (db)	$C_{ob}$ (pf)	$r_{bb} \times C_{ob}$ (nsec)	$t_r$ (sec)	Type P - PNP N - NPN	Mat.	Max. Temp. (°C)	STATUS	Dwg. No.
									$V_{cb}$ (volt)	$I_e$ (ma)		$h_i$ (ohm)	$h_o$ ( $\mu mho$ )	$h_r$ ( $\times 10^{-4}$ )										
1394	2SA127	150	25.0	70	50	.50		55	6.0	1.0							15			P-D	Ge	75J		TO44
1395	UST764	150	25.0	20 $\emptyset$			.40	1.0	6.0	1.0	200									P-A	Ge			
1396	2N745	150	30.0	45	20	1.0	1.0	1.0 $\emptyset$	20	1.0	55	b	47	.10	1.8		1.4		.02u	N-ME	Si	175		u 2
1397	2N907	150	30.0	45	20	1.0	1.0	1.0 $\emptyset$	20	1.0	55	b	47	.10	1.8		1.4		.02u	N-D	Si	175		u 10
1398♦#	SFT315	150	30.0 $\emptyset$	40	10	.50	.50	15	9.0 $\emptyset$	1.0 $\emptyset$	80						2.0	.045		P-D	Ge	85J		TO44
1399♦#	SFT319	150	30.0 $\emptyset$	20	10	.50	.40	15	9.0 $\emptyset$	1.0 $\emptyset$	50						2.5	.045		P-D	Ge	85J		TO 1
1400	TMT839	150	30.0 $\emptyset$	45	20	2.0		1.0	5.0 $\emptyset$	1.0 $\emptyset$	35	b	40	.35	2.0	15	8.0			N-ME	Si	175		u 5
1401	TMT840	150	30.0 $\emptyset$	45	20	2.0		1.0	5.0 $\emptyset$	1.0 $\emptyset$	70	b	40	.35	2.0	15	8.0			N-ME	Si	175		u 5
1402	TMT842	150	30.0 $\emptyset$	45	20	2.0		1.0	5.0 $\emptyset$	1.0 $\emptyset$	40 $\dagger$	b	40	.35	2.0	15	6.0			N-ME	Si	175		u 5
1403	UST763	150	30.0	6.0 $\emptyset$			.40	1.0	6.0	1.0	120						14			P-A	Ge			
1404♦#	SFT320	150	35.0 $\emptyset$	20	10	.50	.40	15	9.0 $\emptyset$	1.0 $\emptyset$	80						2.5	.045		P-D	Ge	85J		TO 1
1405	2N2167	150	36.0 $\emptyset$	12		12	.77	.02 $\emptyset$	6.0 $\emptyset$	1.0	9.0						6.0			P-A $\dagger$	Si	140S		TO 5
1406	2N794	150	40.0 $\emptyset$	13	100	1.0	.40	3.0 $\emptyset$	.30 $\emptyset$	10 $\emptyset$	50 $\dagger$							.16u		PME $\dagger$	Ge	85A		TO18
1407	2N1300	150	40.0 $\emptyset$	13	100	1.0	.40	20	.30	10	50							.11u		P-ME	Ge	85A		TO 5
1408♦#	SFT317	150	40.0 $\emptyset$	20	10	.50	.40	15	9.0 $\emptyset$	1.0 $\emptyset$	100						2.5	.045		P-D	Ge	85J		TO 1
1409	TMT841	150	40.0 $\emptyset$	45	20	2.0		1.0	5.0 $\emptyset$	1.0 $\emptyset$	140	b	40	.35	2.0	15	8.0			N-ME	Si	175		u 5
1410	TMT843	150	40.0 $\emptyset$	45	20	2.0		1.0	5.0 $\emptyset$	1.0 $\emptyset$	100 $\dagger$	b	40	.35	2.0	15	6.0			N-ME	Si	175		u 5
1411	2N2164	150	44.0 $\emptyset$	12		12	.77	.02 $\emptyset$	3.0 $\emptyset$	1.0	40						6.0			P-A $\dagger$	Si	140S		TO 5
1412	2N746	150	45.0	45	20	1.0	1.0	1.0 $\emptyset$	20	1.0	99	b	47	.10	1.8		1.4		.06u	N-ME	Si	175		u 2
1413	2N908	150	45.0	45	20	1.0	1.0	1.0 $\emptyset$	20	1.0	99	b	47	.10	1.8		1.4		.06u	N-D	Si	175		u 10
1414	2N702	150	50.0	20	50	5.0		6.0	5.0 $\emptyset$	10 $\emptyset$	30 $\dagger$						7.0			N-ME	Si	175S	A	TO18
1415	2N865	150	52.0 $\emptyset$	10	50	10	.77	.10	.50 $\emptyset$	5.0 $\emptyset$	75 $\dagger$	e	5K	110	6.5		5.0		50n	P-PA	Si	140A		TO18
1416	2N747	150	60.0	25	50	3.0	1.0	.10 $\emptyset$	5.0 $\emptyset$	10 $\emptyset$	45 $\dagger$						4.0	.24	13n $\emptyset$	N-D $\dagger$	Si	175J		u 2
1417	2N795	150	60.0 $\emptyset$	13	100	4.0	.40	3.0 $\emptyset$	.30 $\emptyset$	10 $\emptyset$	50 $\dagger$							.07u		PME $\dagger$	Ge	85A		TO18
1418	2N1301	150	60.0 $\emptyset$	13	100	4.0	.40	20	.50	40	75							.07u		P-ME	Ge	85A		TO 5
1419#	2SA311	150	60.0	40	400	2.0		6.0	1.0 $\emptyset$	400 $\emptyset$	60						3.0		.27u	P-D $\dagger$	Ge	75J		TO 9
1420#	2SA312	150	60.0	40	200	2.0		6.0	1.0 $\emptyset$	200 $\emptyset$	60						3.0		.10u	P-D $\dagger$	Ge	75J		TO 9
1421	2N796	150	80.0 $\emptyset$	13	100	4.0	.40	3.0 $\emptyset$	.30 $\emptyset$	10 $\emptyset$	75 $\dagger$							.06u		PME $\dagger$	Ge	85A		TO18
1422	2N1683	150	80.0	13	100	4.0		20	.50	40	85 $\dagger$						8.0			P	Ge	85		TO 5
1423	2N772	150	110 $\emptyset$	25	100	3.0	.83		5.0 $\emptyset$	10 $\emptyset$	35 $\dagger$						1.3		50n	N-D	Si	150		TO18
1424	2N770	150	125 $\emptyset$	20	100	3.0	.83		1.0 $\emptyset$	20 $\emptyset$	25 $\dagger$						1.2			N-D	Si	150		TO18
1425	2N1199	150	125 $\emptyset$	20	100	3.0	.83	10	1.0 $\emptyset$	20	25 $\dagger$						1.2		25n	N-D $\dagger$	Si	150S		TO 9
1426	2N1199A	150	125 $\emptyset$	20	100	3.0	.83	.70	1.0 $\emptyset$	20 $\emptyset$	25						1.2		25n	N-D	Si	100A	A	TO 9
1427	2N1472	150	140 $\emptyset$	25	100	3.0	.83	5.0	5.0 $\emptyset$	10	35						1.0		15n	NMD $\dagger$	Si	150S		TO 9
1428	2N711A	150	150 $\emptyset$	15	100	1.5	.50	1.5 $\emptyset$	.50 $\emptyset$	10 $\emptyset$	25 $\Delta$						6.0		75n $\emptyset$	P-ME	Ge	100J		TO18
1429	2N1663	150	150 $\emptyset$	20	100	3.0	.83		1.0 $\emptyset$	20	50 $\dagger$						1.5		4.0n	N-D	Si	150S		TO 9
1430	2N771	150	200 $\emptyset$	20	100	3.0	.83		1.0 $\emptyset$	20 $\emptyset$	50 $\dagger$						1.5		40n	N-D	Si	150		TO18
1431 $\blacktriangledown$	2N2258	150	250 $\Delta$	7.0 $\Delta$	100	1.0 $\Delta$	.50	10 $\emptyset$	1.0 $\emptyset$	10 $\emptyset$	40 $\dagger$ $\Delta$						8.0			PME $\dagger$	Ge	100J		TO18
1432 $\blacktriangledown$	2N2259	150	250 $\Delta$	7.0 $\Delta$	100	1.0 $\Delta$	.50	10 $\emptyset$	1.0 $\emptyset$	10 $\emptyset$	40 $\dagger$ $\Delta$						8.0			PME $\dagger$	Ge	100J		TO18
1433	2N2048	150	260 $\emptyset$	20	100	2.0	.50	3.0 $\emptyset$	.50 $\emptyset$	10 $\emptyset$	125 $\dagger$						1.5		35n	P-MD	Ge	100		TO 9
1434#	2SC33	150	270	45	50	3.0	.83	1.0 $\emptyset$	10 $\emptyset$	5.0	55						19	3.5		N-ME	Si	150J		TO17
1435#	2G103	150	300	15	50	2.0	.25		5.0	10	40 $\dagger$								4.0u	P-ME	Ge	100J		TO18
1436#	2G104	150	300	15	50	3.5	.25		5.0 $\emptyset$	10	40 $\dagger$								4.0n	P-ME	Ge	100J		TO18
1437	2N705A	150	300	15	50	3.5	.50		.30	10	40									P	Ge	100J		TO18
1438 $\blacktriangledown$ #	2SA56	150	300	15	50	3.5		3.0 $\emptyset$	.30 $\emptyset$	10 $\emptyset$	40 $\dagger$								55n	P-ME	Ge	100J		TO18

# 1. JUNCTION TRANSISTORS

IN ORDER OF MAXIMUM COLLECTOR DISSIPATION,  $f_{\alpha b}$ , AND TYPE NO.



LINE No.	TYPE No.	Max. COLL. DISS. in Free Air (mw)	$f_{\alpha b}$ (Mc.)	ABSOLUTE MAX. RATINGS @ 25°C					TYPICAL PARAMETERS @ 25°C											DESCRIPTION				
				$V_{cb}$ (volt)	$I_c$ (ma)	$V_{eb}$ (volt)	De-rate Free Air $^{\circ}C/mw$	Max. $I_{cbo}$ @ Max. $V_{cb}$ ( $\mu a$ )	BIAS		$h_{fe}$ or $h_{FE} - \dagger$	CIRCUIT			Max. NF (db)	Gain (db)	$C_{ob}$ (pf)	$r_{bb} \times C_{ob}$ (nsec)	$t_r$ (sec)	Type P - PNP N - NPN	Mat.	Max. Temp. ( $^{\circ}C$ )	STATUS	Dwg. No.
									$V_{cb}$ (volt)	$I_e$ (ma)		$h_i$ (ohm)	$h_o$ ( $\mu mho$ )	$h_r$ ( $\times 10^{-4}$ )										
1438▼#	2SA56	150	300	15	50	3.5		3.0	.30	10	40†						5.0	55n	P-ME	Ge	100J		TO18	
1439	101A	150	300	15	100	5.0	.50	10	3.0	50	40†Δ							80n	P-D†	Ge	100J	T	TO18	
1440	101B	150	300	15	100	5.0	.50	10	3.0	50	40†Δ							80n	P-D†	Ge	100J	T	TO18	
1441	101M	150	300	15	100	5.0	.50	10	3.0	50	40†Δ							80n	P-D†	Ge	100J	T	TO18	
1442	201A	150	300	15	100	2.0	.50	10	5.0	115	45Δ						8.5		P-D	Ge	100J	T	TO18	
1443	201B	150	300	15	100	2.0	.50	10	5.0	115	45Δ						8.5		P-D	Ge	100J	T	TO18	
1444	201M	150	300	15	100	2.0	.50	10	5.0	115	45Δ						8.5		P-D	Ge	100J	T	TO18	
1445	2N968	150	320§	15		2.5	.50	3.0	.70	25	20Δ†						4.0		P	Ge	100		TO18	
1446	2N969	150	320§	12		2.0	.50	3.0	.70	25	20Δ†						4.0		P	Ge	100		TO18	
1447	2N970	150	320§	12		1.0	.50	3.0	.70	25	20Δ†						4.0		P	Ge	100		TO18	
1448	2N971	150	320§	7.0		1.0	.50	10	.70	25	20Δ†						4.0		P	Ge	100		TO18	
1449	2N972	150	320§	15		2.5	.50	3.0	.70	25	40Δ†						4.0		P	Ge	100		TO18	
1450	2N973	150	320§	12		2.0	.50	3.0	.70	25	40Δ†						4.0		P	Ge	100		TO18	
1451	2N974	150	320§	12		1.0	.50	3.0	.70	25	40Δ†						4.0		P	Ge	100		TO18	
1452	2N975	150	320§	7.0		1.0	.50	10	.70	25	40Δ†						4.0		P	Ge	100		TO18	
1453	2N711	150	360§	12	50	1.0	.50	3.0	.50	10	30†	b 8.0	45			22	5.0	100n	PME†	Ge	100J		TO18	
1454	2N741	150	360§	15	100	1.0	.50		6.0	5.0	25†	b 8.0	45			22	6.0	.45	P-ME	Ge	100J		TO18	
1455	2N741A	150	360§	20	100	1.0	.50	3.0	6.0	5.0	25†		45			22	6.0		P-ME	Ge	100		TO18	
1456	2N559	150	400§	15	50	3.5	.50		5.0	10	60†	b 7.0	9.0	25			4.0	.32	P-D	Ge	150S	AR	TO28	
1457	2N828	150	400§	15	200	2.5	.50	3.0	.30	10	40†						3.5	7.0n	P-E†	Ge	100J	R	TO18	
1458	2N779B	150	450	15			.50		5.0	10	125†								P-MD	Ge			TO18	
1459	2N846B	150	450	15			.50		5.0	10	50†								P-MD	Ge			TO18	
1460	2N985	150	450§	15	300	3.0	.50	100	.50	100	120†						4.3		P	Ge	100		TO18	
1461	2N960	150	460§	15		2.5	.50		1.0	100	20Δ†						2.2	35	P	Ge	100		TO18	
1462	2N961	150	460§	12		2.0	.50		1.0	100	20Δ†						2.2	35	P	Ge	100		TO18	
1463	2N962	150	460§	12		1.0	.50		1.0	100	20Δ†						2.2	35	P	Ge	100		TO18	
1464	2N964	150	460§	15		2.5	.50		1.0	100	40Δ†						2.2	35	P	Ge	100		TO18	
1465	2N965	150	460§	12		2.0	.50		1.0	100	40Δ†						2.2	35	P	Ge	100		TO18	
1466	2N966	150	460§	12		1.0	.50		1.0	100	40Δ†						2.2	35	P	Ge	100		TO18	
1467	2N1094	150	850	30	30	1.0	.50		6.0	4.0	50	b 8.6	10	11 12		1.8	1.8	1.0n	P-ME	Ge	100J	A	TO28	
1467a	2N797	150	1000§	20	150	4.0	.50	100	.50	50	80†						3.0		N	Ge	100		TO18	
1468▼	2N955	150	1000§	12	100	2.0	.50	5.0	.50	30	30Δ						6	10n	N-ME	Ge	100		TO18	
1469	2N109	150		25	70	12		14	1.0	50	75								P-ΔΔ	Ge	71A		TO40	
1470▼	2N109/5	150		25	70	12		14	1.0	50	75								P-ΔΔ	Ge	71A		TO 5	
1471	2N138	150		20	150			20	1.0	50	44								P-A	Ge	60A		TO22	
1472	2N185	150		20	150			14	1.0	50	80								P-A	Ge	50A		TO22	
1473	2N217	150		25	70	12		14	1.0	50	75								P-ΔΔ	Ge	71A		TO44	
1474	2N238	150		20	150			20	1.0	50	45†								P-A	Ge	60A		TO22	
1475	2N311	150		15		15	.50	60	1.0	10	50†	b	.50					1.0u	P-A†	Ge	100S		TO 5	
1476	2N312	150		15		15	.50	60	1.0	10	50†	b	.50					1.0u	N-A†	Ge	100S		TO 5	
1477	2N407	150		20	70	2.5		14	1.0	50	75								P-A	Ge	71A		TO40	
1478	2N408	150		20	70	2.5		14	1.0	50	75								P-A	Ge	71A		TO 1	
1479	2N415	150		12	50	20	.40	2.0	6.0	1.0	30†								P-F	Ge	85J		TO 5	
1480	2N587	150		40	200		.40	50		200	30†							1.0u	N-†	Ge	85J		RO 5	
1481†	2N680	150		20	50			14			35								P	Ge				

# 1. JUNCTION TRANSISTORS

IN ORDER OF MAXIMUM COLLECTOR DISSIPATION,  $f_{\alpha b}$ , AND TYPE NO.



LINE No.	TYPE No.	Max. COLL. DISS. in Free Air (mw)	$f_{\alpha b}$ (Mc.)	ABSOLUTE MAX. RATINGS @ 25°C					TYPICAL PARAMETERS @ 25°C											DESCRIPTION									
				BV <sub>cb</sub> (volt)	I <sub>c</sub> (ma)	BV <sub>eb</sub> (volt)	De-rate Free Air (°C/mw)	Max. I <sub>cb0</sub> @ V <sub>cb</sub> (μa)	BIAS		CIRCUIT			Max. NF (db)	Gain (db)	C <sub>ob</sub> (pf)	r <sub>bb</sub> × C <sub>ob</sub> (nsec)	t <sub>r</sub> (sec)	Type P - PNP N - NPN	Mat.	Max. Temp. (°C)	STATUS	Dwg. No.						
									V <sub>cb</sub> (volt)	I <sub>e</sub> (ma)	h <sub>fe</sub> or h <sub>FE</sub> - †	h <sub>i</sub> (ohm)	h <sub>o</sub> (μmho)											h <sub>r</sub> (×10 <sup>-4</sup> )					
1482	2N710A	150		15	50	2.0	.50	3.0	.50	10	25Δ																		
1483♦	2N711B	150		18Δ	100	2.0Δ	.50	1.5∅	.50∅	10∅	30†Δ																		
1484	2N725	150		15	50						20†Δ																		
1485	2N775	150§		20	100	2.0	.83		1.0∅	2.0∅	50									25	1.5	.15							
1486	2N781	150		15	200	2.5	.50	3.0∅	.22∅	10∅	25																		
1487	2N782	150		12	200	1.0	.50	3.0∅	.22∅	10∅	20																		
1488	2N934	150		13	200	1.0	.40	6.0	.30∅	40∅	60																		
1489	2N1269	150§		20	100	2.0	1.3	.70	1.0∅	2.0∅	50																		
1490	2N1408	150		50		10	.50	25	5.0	1.0	25	b		1.50	5.0	15													
1491	2N1646	150		15	50	2.0		3.0∅	.40∅	10∅	20Δ†																		
1492▼	2N1891	150		25	300	25	.50	5.0	.15	100	25																		
1493	2N1960	150		15	200	2.5	.50	3.0∅	.22∅	10∅	25																		
1494	2N1961	150		12	200	1.0	.50	3.0∅	.22∅	10∅	20																		
1495	2N2022	150		15	50	3.5	.50	3.0	.50	10	35									8.0									
1496▼	2N2260	150		30	200	30	.30	50												20									
1497▼	2N2261	150		30	200	30	.30	50												20									
1498▼	2N2262	150		30	200	30	.30	50												20									
1499#	2SA282	150		18	200	12		8.0	.50∅	100∅	80†									10	.90	.60u							
1500#	2SA283	150		18	200	12		8.0	.50∅	100∅	80†									10	1.0	.40u							
1501#	2SA284	150		18	200	12		8.0	.50∅	100∅	80†									10	1.15	.30u							
1502#	2SB32	150		20∅	50			14∅	9.0	1.0∅	40									40									
1503#	2SB33	150		20	50	2.5		14∅	1.0∅	50	70†									30									
1504#	2SB37	150		35	50	12		14∅	1.0∅	50	70†									32									
1505#	2SB76	150		12	70	2.5		14	6.0∅	1.0	55	e 1900	21.5	3.0	20														
1506#	2SB78	150		12	70	2.5		14	1.5∅	50	70†																		
1507#	2SB153	150		12	70	2.5		14	3.0∅	1.0	70	e 2200	35	5.0	17														
1508#	2SB154	150		12	70	2.5		14	1.5∅	50	70†																		
1509#	2SB185	150		25	50	25		15	1.5∅	30	45																		
1510#	2SB186	150		25	50	25		15	1.5∅	30	170																		
1511#	2SB187	150		25	50	25		15	1.5∅	30	100																		
1512#	2SB188	150		25	50	25		15												33									
1513#	2SB199	150		12	300	2.5		14	1.0∅	150	80†									22									
1514#	2SD19	150		25	300	10		12∅	1.0∅	20	31†																		
1515#	2SD20	150		25	300	10		12∅	1.0∅	20	50†																		
1516#	2SD21	150		25	300	10		12∅	1.0∅	20	72†																		
1517#	2SD22	150		25	300	10		12∅	1.0∅	20	97†																		
1518#	2SD23	150		25	300	10		12∅	1.0∅	20	150†																		
1519▼#	2SD33	150		20	50	2.5		14∅	9.0	1.0∅	70†									30									
1520▼#	2SD37	150		30	50	12		14	12	1.0∅	70†									32									
1521	3N56	150		18	30	3.0																							
1522	3N57	150		18	30	3.0																							
1523	4D20	150		40	25	1.5	.80	1.0∅	5.0∅	10∅	33†	b	50	.20	2.0														
1524	4D21	150		40	25	1.5	.80	1.0∅	5.0∅	10∅	88†	b	50	.20	2.0														
1525	4D22	150		40	25	1.5	.80	1.0∅	5.0∅	10∅	185†	b	50	.20	2.0														
1526#	AFZ10	150		40	100	.70	.20		6.0	10																			

# 1. JUNCTION TRANSISTORS

IN ORDER OF MAXIMUM COLLECTOR DISSIPATION,  $f_{\alpha b}$ , AND TYPE NO.



LINE No.	TYPE No.	Max. COLL. DISS. in Free Air (mw)	$f_{\alpha b}$ (Mc.)	ABSOLUTE MAX. RATINGS @ 25°C					TYPICAL PARAMETERS @ 25°C										DESCRIPTION									
				BV <sub>cb</sub> (volt)	I <sub>c</sub> (ma)	BV <sub>eb</sub> (volt)	De-rate Free Air C/mw	Max. I <sub>cbo</sub> @ Max. V <sub>cb</sub> (μa)	BIAS		h <sub>fe</sub> or h <sub>FE</sub> - †	CIRCUIT			Max. NF (db)	Gain (db)	C <sub>ob</sub> (pf)	r <sub>bb</sub> × C <sub>ob</sub> (nsec)	t <sub>r</sub> (sec)	Type P - PNP N - NPN	Mat.	Max. Temp. (°C)	STATUS	Dwg. No.				
									V <sub>cb</sub> (volt)	I <sub>e</sub> (ma)		h <sub>i</sub> (ohm)	h <sub>o</sub> (μmho)	h <sub>r</sub> (×10 <sup>-4</sup> )														
1527#	ASZ10	150		50	250	.70	.20	40																				
1528#	BCY19	150		50	50		.60	5.0*	6.0∅	1.0∅	20Δ	e	1400	25	4.0	4.0												
1529#	BCY20	150		100	50		.60	5.0*	6.0∅	1.0∅	10Δ	e	600	15	3.0	4.0												
1530	GT20	150		25	150	10	.50	25	.50∅	1.0	42	b	40	.50	4.0	24	40	35										
1531	GT34	150		25	100	10	.50	25	.50∅	1.0	20	b	40	.50	3.0	24	36	35										
1532	GT34N	150		100		10	.50	450	.50∅	1.0	18	b	40	.50	4.0													
1533	GT34S	150		40		40	.50	100	.50∅	1.0	15	b	40	.50	4.0													
1534	GT35	150		25		10	.50	100	5.0∅	1.0	40	b	28	.50	2.0													
1535	GT74	150		25		10	.50	25	5.0∅	1.0	75	b	40	.50	5.0	12	42	35										
1536	GT75	150		25		10	.50	25	5.0∅	1.0	150	b	40	.50	8.0	12	44	35										
1537	GT81	150		25		10	.50	25	5.0∅	1.0	75	b	40	.50	5.0	24	42	35										
1538	GT82	150		25		10	.50	25	5.0∅	1.0	150	b	40	.50	8.0	24	46	35										
1539	GT109	150		25	200	10	.50	25	5.0∅	1.0	110	b	40	.50	6.0	29												
1540	GT222	150		12	200		.50	20	5.0∅	1.0∅	20	b	40	.50			30	35										
1541	GT229	150		12	200		.50	20	5.0∅	1.0∅	20	b	30	.50			30											
1542	GT903	150		20		10	.50	25	.20∅	1.0Δ	53†	b		.50					16		1.5u							
1543	GT905	150		20			.50	25	.20∅	1.0Δ	30†	b		.50					16		2.6u							
1544	GT947	150		15		10	.50	25	.20∅	1.0Δ	40†	b		.50					16		1.0u							
1545#	OC3L	150		30			.50	6.0	6.0	1.0	70								16									
1546#	OC3LR	150		30			.50	6.0	6.0	1.0	70								5.0									
1547#	OC4LP	150		30	200		.50	6.0	1.0	100	60†								16									
1548	SYL1380	150		25	200			32																				
1549	SYL1750	150		40	100				6.0∅	1.0∅	70	e	2.4K															
1550	SYL2189	150		12	50	1.0		3.0∅	.50∅	10∅	20Δ										70§							
1551	TI363	150		30	50	2.0		3.0∅	6.0∅	.50∅	35†Δ								2.0									
1552	TI364	150		30	50	2.0		5.0∅	6.0∅	.50∅	20†								2.0									
1553	TI365	150		30	50	2.0		5.0∅	9.0∅	1.0∅	30†								2.0		.07							
1554	TI376	150		20	150			15	1.0∅	50∅	105†																	
1555	TI377	150		20	150			20	1.0∅	50∅	53†																	
1556	TI385	150		30	50	2.0		3.0∅	6.0∅	1.0∅	35†								2.0		.05							
1557	TI386	150		30	50	2.0		3.0∅	6.0∅	1.0∅	35†								2.0		.07							
1558	TI387	150		30	50	2.0		3.0∅	6.0∅	1.0∅	35†								2.0		.06							
1559	TI388	150		30	50	2.0		5.0∅	6.0∅	1.0∅	35†								2.0		.09							
1560	TI389	150		30	50	2.0		5.0∅	6.0∅	1.0∅	20†								2.0		.09							
1561	TI395	150		30	50	2.0		5.0∅	1.0∅	10∅	100†								3.0		1.65							
1562	TI396	150		50	50	5.0		5.0∅	1.0∅	20∅	100†								3.0		.07							
1563	TI397	150		35	50	2.0		3.0∅	6.0∅	.50∅	35†								2.0									
1564	TI398	150		35	50	2.0		3.0∅	6.0∅	.50∅	30†								2.0									
1565	TI399	150		35	50	2.0		5.0∅	6.0∅	.50∅	20†								2.0									
1566	TR-C70	150		16		12	.36	10	6.0	1.0	30								25		30							
1567	TR-C71	150		12		9.0	.36	10	6.0	1.0	60								25		32							
1568	TR-C72	150		20		16	.36	20	5.4	1.0	100								25		34							
1569	2N44A	155	1.00∅	25∅	50		.40	8.0	5.0	1.0	31										40							
1570#	OC83	160*	.85§	32	500						50Δ																	
1571#	OC84	160*	1.0§	32	500						60Δ																	

# 1. JUNCTION TRANSISTORS

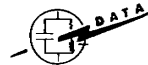
IN ORDER OF MAXIMUM COLLECTOR DISSIPATION,  $f_{\alpha b}$ , AND TYPE NO.



LINE No.	TYPE No.	Max. COLL. DISS. in Free Air (mw)	$f_{\alpha b}$ (Mc.)	ABSOLUTE MAX. RATINGS @ 25°C					TYPICAL PARAMETERS @ 25°C										DESCRIPTION						
				BV <sub>cb</sub> (volt)	I <sub>c</sub> (ma)	BV <sub>eb</sub> (volt)	De-rate Free Air P/mw	Max. I <sub>cb0</sub> @ Max. V <sub>cb</sub> (μa)	BIAS		h <sub>fe</sub> or hFE - †	CIRCUIT			Max. NF (db)	Gain (db)	C <sub>ob</sub> (pf)	r <sub>bb</sub> × C <sub>ob</sub> (nsec)	t <sub>r</sub> (sec)	Type P - PNP N - NPN	Mat.	Max. Temp. (°C)	STATUS	Dwg. No.	
									V <sub>cb</sub> (volt)	I <sub>e</sub> (ma)		h <sub>ij</sub> (ohm)	h <sub>o</sub> (μmho)	h <sub>r</sub> (×10 <sup>-4</sup> )											
1572	UST87	165	.50	25∅			.36	6.0			38									P-A†	Ge				
1573	2N281	165	.90	32	250	10	.30	10			70†									P	Ge	75J		TO 5	
1574	2N282	165	.90	Matched pair of 2N281																P	Ge	85		TO 5	
1575	2N1287	165	1.00	20	300	15	.36	10			40								P	Ge	85		TO 5		
1576	2N1287A	165	1.00	20	300	15	.36	10			60								P	Ge	85		TO 5		
1577	UST88	165	1.00	25∅			.36	6.0			80								P-A†	Ge					
1578	UST19	165	1.50	25∅			.36	6.0			80								P-A†	Ge					
1579	UST10	165		50∅			.36	25			22								P-A†	Ge					
1580	UST81	165		25∅			.36	6.0	6.0	1.0	90				12	44			P-A	Ge	85J				
1581	UST722	165		20∅			.36	6.0	6.0	1.0	22				16	40			P-A	Ge	85J				
1582▼#	2SA310	166	650\$	32	25	.30	.30	13∅	12	1.0	250					.70			P-AD	Ge	75J		TO 7		
1583	2N1008	167	1.00	20	300		.36		5.0∅	10∅	90	e 600	300	10					P	Ge	85J		TO 9		
1584	2N1008A	167	1.00	40	300		.36		5.0∅	10∅	90	e 600	300	10					P	Ge	85J		TO 9		
1585	2N1008B	167	1.00	60	300		.36		5.0∅	10∅	90	e 600	300	10					P	Ge	85J	A	TO 9		
1586	2N1473	167	8.00	40	400	15	.30	100	.60∅	400	50†								N	Ge	75		TO 5		
1587	2N658	170	5.00	16∅	1A	12	.35	25	.25∅	1.0Δ	50†								P-A†	Ge	85J		TO 5		
1588	2N662	170	8.00	11∅	1A	12	.35	25	.25∅	1.0Δ	60†								P-A†	Ge	85J		TO 5		
1589	2N659	170	10.0	14∅	1A	12	.35	25	.25∅	1.0Δ	70†								P-A†	Ge	85J		TO 5		
1590	2N660	170	15.0	11∅	1A	12	.35	25	.25∅	1.0Δ	90†								P-A†	Ge	85J		TO 5		
1591	2N661	170	20.0	9.0∅	1A	12	.35	25	.25∅	1.0Δ	120†								P-A†	Ge	85J		TO 5		
1592	2N1017	170	20.0	30						1.0	100								P-A	Ge			TO 5		
1593#	2SA128	170	20.0	40	500	2.0		50	6.0	1.0									P-D	Ge	75J		TO44		
1594#	2SA129	170	20.0	40	500	2.0		50	6.0	1.0									P-D	Ge	75J		TO44		
1595	2N778	170\$		20	100	2.0	.83		10∅	2.0∅	50				25	1.5	.17		N-D	Si	150		TO18		
1596	2N1272	170\$		20	100	2.0	1.3	.70	10∅	2.0∅	50				25	1.5	.16		N-D	Si	150S		TO 9		
1597#	2SB22	170		25	75	25		15	1.5∅	30	95								P-A	Ge	75J		TO 1		
1597a#	2SB265	170		40	100	12		14	1.0∅	100∅	100†								P-A†	Ge	75J		TO 1		
1598	2N1191	175	1.50	40	200	25	.35		6.0∅	1.0	40				42	20	4.2		P-A	Ge	85J		TO 9		
1599	2N1192	175	2.00	40	200	25	.35		6.0∅	1.0	75				44	20			P-A	Ge	85J		TO 9		
1600	2N1193	175	2.50	40	200	25	.35		6.0∅	1.0	160				46	20			P-A	Ge	85J		TO 9		
1601#	2SA174	175	4.00	20	50	10	.28	8.0	1.0∅	10	60†								P-A	Ge	75J		MM 5		
1602#	2SA172	175	8.00	20	200	10	.28	8.0	.35∅	200	40								P-A	Ge	75J		RO20		
1603#	2SA168	175	9.00	20	50	10	.28	8.0	6.0∅	1.0	60	b 28	.80	13	18				P-A	Ge	75J		MM 5		
1604#	2SA168A	175	9.00	18∅	50	10	.28	8.0	6.0∅	1.0	60	b 28	.80	13	18				P-A	Ge	75J		MM 5		
1605	2N1313	175	12.0	30	400	20	.35			400∅	40								P-A	Ge	85J		TO 5		
1606#	2SA170	175	15.0	20	50	10	.28	8.0	1.0∅	1.0	70†								P-A	Ge	75J		MM 5		
1607#	OC602Sp	175		40	500†	10	.17	30	6.0	1.0	25								P-A	Ge	75J				
1608#	OC604Sp	175		40	500†	10	.17	30	6.0	1.0	45								P-A	Ge	75J				
1609	2N1101	180	.15	20	100		.28	50	1.5	35∅	40								N-A	Ge	75J		TO22		
1610	2N1102	180	.15	40	100		.28	50	1.5	35∅	40								N-A	Ge	75J		TO22		
1611▼	2N1102/5	180	.15	40	100		.28	50	1.5	35∅	40								N-A	Ge	75J		TO 5		
1612	2N402	180	.60	25	150	10	.33	15	9.0	1.0	25	b 33	.60	2.0		37	40	2.0u	P-F	Ge	85J		TO 5		
1613	2N612	180	.60	25	150	10	.33	25	9.0	1.0	25	b 33	.60	2.0		37	40		P-F	Ge	85J		TO 5		
1614#	2SB162	180	.65	30	100	10	.28	10∅	1.0∅	50∅	50†								P-A	Ge	75J		MM 5		
1615	2N214	180	.80	40	100	10	.33	50	1.6∅	35∅	75†								N-A	Ge	85J		TO22		

# 1. JUNCTION TRANSISTORS

IN ORDER OF MAXIMUM COLLECTOR DISSIPATION,  $f_{cb}$ , AND TYPE NO.



LINE No.	TYPE No.	Max. COLL. DISS. in Free Air (mw)	$f_{cb}$ (Mc.)	ABSOLUTE MAX. RATINGS @ 25°C					TYPICAL PARAMETERS @ 25°C										DESCRIPTION								
				$V_{cb}$ (volt)	$I_c$ (ma)	$V_{eb}$ (volt)	De-rate Free Air $C/mw$	Max. $I_{cbo}$ @ Max. $V_{cb}$ ( $\mu a$ )	BIAS		$h_{fe}$ or $h_{FE} - \bar{f}$	CIRCUIT			Max. NF (db)	Gain (db)	$C_{ob}$ (pf)	$r_{bb} \times C_{ob}$ (nsec)	$t_r$ (sec)	Type P - NPN N - PNP	Mat.	Max. Temp. (°C)	STATUS	Dwg. No.			
									$V_{cb}$ (volt)	$I_e$ (ma)		$h_i$ (ohm)	$h_o$ ( $\mu mho$ )	$h_r$ ( $\times 10^{-4}$ )													
1616	2N1059	180	.80	20	100	10	.27	50	1.5 $\phi$	35 $\phi$	75 $\uparrow$					28						N-A	Ge	75J		TO22	
1617#	2SB164	180	.80	30	100	10	.28	10 $\phi$	1.0 $\phi$	50 $\phi$	70 $\uparrow$					33	30					P-A	Ge	75J		MM 5	
1618	2N403	180	.85	25	200	10	.33	15	9.0	1.0	35	b	30	.20	3.0				2.0u			P-F	Ge	85J		TO 5	
1619	2N613	180	.85	25	200	10	.33	25	9.0	1.0	35	b	30	.20	3.0							P-F	Ge	85J		TO 5	
1620	2N61	180	1.00	25	200	10	.33	15		100 $\phi$	45 $\uparrow$								2.0u			P-F	Ge	85J		TO 5	
1621	2N61A	180	1.00	40	200	10	.33	15		100 $\phi$	45 $\uparrow$								2.0u			P-F	Ge	85J		TO 5	
1622	2N61B	180	1.00	50	200	10	.33	15		100 $\phi$	45 $\uparrow$								2.0u			P-F	Ge	85J		TO 5	
1623	2N61C	180	1.00	60	200	10	.33	15		100 $\phi$	45 $\uparrow$								2.0u			P-F	Ge	85J		TO 5	
1624	2N611	180	1.00	25	200	10	.33	15		100 $\phi$	45	b	345									P-F	Ge	85J		TO 5	
1625#	2SB166	180	1.00	30	100	10	.28	10 $\phi$	1.0 $\phi$	50 $\phi$	100 $\uparrow$											P-A	Ge	75J		MM 5	
1626#	2SB102	180	1.20	30	50	10	.28	10	6.0 $\phi$	1.0	60	b	30	.30	2.5		20					P-A	Ge	75J		MM 5	
1627#	2SB104	180	1.20	30	100	10	.28	10	1.0 $\phi$	50 $\phi$	70 $\uparrow$											P-A	Ge	75J		MM 5	
1628	2N60	180	1.50	25	200	10	.33	15		100 $\phi$	70 $\uparrow$								2.0u			P-F	Ge	85J		TO 5	
1629	2N60A	180	1.50	40	200	10	.33	15		100 $\phi$	70 $\uparrow$								2.0u			P-F	Ge	85J		TO 5	
1630	2N60B	180	1.50	50	200	10	.33	15		100 $\phi$	70 $\uparrow$								2.0u			P-F	Ge	85J		TO 5	
1631	2N60C	180	1.50	60	200	10	.33	15		100 $\phi$	70 $\uparrow$								2.0u			P-F	Ge	85J		TO 5	
1632	2N610	180	1.50	25	200	10	.33	25		100 $\phi$	65 $\uparrow$	e	375									P-F	Ge	85J		TO 5	
1633#	NKT222	180	1.50	30	500		.28	40	4.5	25	150 $\uparrow$											P	Ge	75			
1634#	NKT223	180	1.50	30	500		.28	40	4.5	1.0	45											P	Ge	75			
1635#	NKT224	180	1.50	30	500		.28	40	4.5	1.0	35											P	Ge	75			
1636#	NKT225	180	1.50	30	500		.28	40	4.5	1.0	100											P	Ge	75			
1637#	NKT226	180	1.50	30	500		.28	40	4.5		45											P	Ge	75			
1638#	NKT227	180	1.50	60	500		.28	40	4.5	25	150 $\uparrow$											P	Ge	75			
1639	2N59	180	1.80	25	200	10	.33	15		100 $\phi$	90 $\uparrow$								2.0u			P-F	Ge	85J		TO 5	
1640	2N59A	180	1.80	40	200	10	.33	15		100 $\phi$	90 $\uparrow$								2.0u			P-F	Ge	85J		TO 5	
1641	2N59B	180	1.80	50	200	10	.33	15		100 $\phi$	90 $\uparrow$								2.0u			P-F	Ge	85J		TO 5	
1642	2N59C	180	1.80	60	200	10	.33	15		100 $\phi$	90 $\uparrow$								2.0u			P-F	Ge	85J		TO 5	
1643	2N609	180	1.80	25	200	10	.33	25		100 $\phi$	90 $\uparrow$	e	390									P-F	Ge	85J		TO 5	
1644	2N1681	180	5.00 $\Delta$	30	200	20		3.0 $\phi$	.25 $\phi$	10 $\phi$	75 $\uparrow$								.95u			P-AA	Ge	100J		TO 5	
1645#	2SA250	180	50.0	100	10	.50	.42	16 $\phi$	6.0	1.0	100									4.0			P-D	Ge	75J		
1646#	AF107	180*	330 $\phi$	30	70	1.0	.25	18	10 $\phi$	10 $\phi$	60					5.8	17 $\phi$	1.2				P-ME	Ge	90J		RO23	
1647#	AFY10	180*	330 $\phi$	30	70	1.0	.25	18	10 $\phi$	10 $\phi$	60					5.8	17 $\phi$	1.2				P-ME	Ge	90J		RO23	
1648#	AF108	180*	400 $\phi$	30	70	1.0	.25	18	10 $\phi$	10 $\phi$	60					4.8	20 $\phi$	1.2				P-ME	Ge	90J		RO23	
1649#	AFY11	180*	400 $\phi$	30	70	1.0	.25	18	10 $\phi$	10 $\phi$	60					4.8	20 $\phi$	1.2				P-ME	Ge	90J		RO23	
1650	2N291	180		25	200		.25	25	.50 $\phi$	100	45											P-A	Ge	50A		OV 7	
1651	2N1431	180		25	100	10	.27		1.5 $\phi$	10 $\phi$	75 $\Delta$											N-A	Ge	75J		TO22	
1652	2N2042	200	.50 $\Delta$	105			.50		6.0	1.0	50											P-A	Ge				
1653	2N2042A	200	.50 $\Delta$	105	200	75	.40	25	6.0	1.0	50								25 $\phi$			P-A	Ge	100		TO 5	
1654#	TK46C	200	.50 $\Delta$	20			.25		0	5.0 $\phi$	15								18			P-A	Ge	75		RO47	
1655#	TK47C	200	.50 $\Delta$	20			.25		0	5.0 $\phi$	20								18			P-A	Ge	75		RO47	
1656	2N650A	200	.75	45	500	30	.35	50	6.0 $\phi$	1.0	50	b	31	.65		15						P-A	Ge	100C	N	TO 5	
1657	2N2043	200	.75 $\Delta$	105			.50		6.0	1.0	113											P-A	Ge			TO 5	
1658	2N2043A	200	.75 $\Delta$	105	200	75	.40	25	6.0	1.0	113								25 $\phi$			P-A	Ge	100		TO 5	
1659	2N186A	200	.80	25	200	5.0	.25	16	5.0	1.0	24	e	1200			16	28	40				P-A	Ge	85S		RO32	
1660	2N187A	200	1.00	25	200	5.0	.25	16	5.0	1.0	36	e	2000									P-A	Ge	85S		RO32	



# 1. JUNCTION TRANSISTORS

IN ORDER OF MAXIMUM COLLECTOR DISSIPATION,  $f_{\alpha b}$ , AND TYPE NO.



LINE No.	TYPE No.	Max. COLL. DISS. in Free Air (mw)	$f_{\alpha b}$ (Mc.)	ABSOLUTE MAX. RATINGS @ 25°C					TYPICAL PARAMETERS @ 25°C										DESCRIPTION						
				BV <sub>cb</sub> (volt)	I <sub>c</sub> (ma)	BV <sub>eb</sub> (volt)	De-rate Free Air C/mw	Max. I <sub>cb0</sub> @ Max. V <sub>cb</sub> (μa)	BIAS		h <sub>fe</sub> or h <sub>FE</sub> - †	CIRCUIT			Max. NF (db)	Gain (db)	C <sub>ob</sub> (pf)	r <sub>bb</sub> × C <sub>ob</sub> (nsec)	t <sub>r</sub> (sec)	Type P - NPN N - NPN	Mat.	Max. Temp. (°C)	STATUS	Dwg. No.	
									V <sub>cb</sub> (volt)	I <sub>e</sub> (ma)		h <sub>i</sub> (ohm)	h <sub>o</sub> (μmho)	h <sub>r</sub> (×10 <sup>-4</sup> )											
1660a	2N651A	200	1.00	45	500	30	.35	50	6.0∅	1.0	85	b 34	.60		15						P-A	Ge	100C	N	TO 5
1660b#	GET103	200	1.00	30	1A		.20	25	2.0∅	1.0∅	55	e 1400	30	3.0							P-A	Ge	85J		RO11
1661#	GET104	200	1.00	30	1A	12	.20	25	.50∅	250∅	30†									P-A	Ge	85J		RO11	
1661a#	GET106	200	1.00	15	1A		.20	25	2.0∅	1.0∅	55	e 1400	30	3.0	5	40	90	3.0	2.5u	P-A	Ge	85J		RO11	
1661b#	GET111	200	1.00	60	1A	12	.20	25	.50∅	250∅	30†									P-A	Ge	85J		RO11	
1662#	GET114	200	1.00	15	1A		.20	25	2.0∅	1.0∅	55	e 1400	30	3.0	12	40	90	3.0	2.5u	P-A	Ge	85J		RO11	
1662a▼#	GET535	200	1.00	30	1500	6.0	.20	25	.50	500	50†									P-A	Ge	85J	T	TO 5	
1662b▼#	GET536	200	1.00	30	1500	6.0	.20	25	.50	500	75†									P-A	Ge	85J	T	TO 5	
1662c▼#	GET538	200	1.00	60	1500	6.0	.20	25	.50	500	50†									P-A	Ge	85J	T	TO 5	
1663	KGS1000	200	1.00Δ	10	400	10	.35	25	6.0	1.0	15		30					14		P	Ge	85S	T		
1663a#	TK23C	200	1.00	50		20	.25		12∅	1.0∅	60	e 1500	16	3.0	16					P-A	Ge	75J		RO47	
1663b#	TK41C	200	1.10	40		30	.25		12∅	1.0∅	40	e 1200	13	3.0	16					P-A	Ge	75J		RO47	
1664	2N188A	200	1.20	25	200	5.0	.25	16	5.0	1.0	54	e 2600						32 40		P-A	Ge	85S		RO32	
1664a	2N460	200	1.20	45	400	10	.20	15	5.0	1.0	24	b 40	1.0	3.0				34 50		P-A	Ge	100J			
1665	2N461	200	1.20	45	400	10	.20	15	5.0	1.0	49	b 30	1.0	3.0				37 50		P-A	Ge	100J	F	TO 5	
1666#	SFT351	200	1.20	24	150	12	.30	15	6.0∅	1.0∅	30	e 1000	20	2.7				32		P-A	Ge	85J		TO 1	
1667#	TK42C	200	1.20	40		30	.25		12∅	1.0∅	66	e 2000	16	3.5				16	.98	P-A	Ge	75J		RO47	
1668	2N652A	200	1.25	45	500	30	.35	50	6.0∅	1.0	160	b 35	.55					15		P-A	Ge	100C	N	TO 5	
1669	2N241A	200	1.30	25	200	5.0	.25	16	5.0	1.0	73	e 4000						35 40		P-A	Ge	85S		RO32	
1670♦#	SFT321	200	1.30	24	250	12	.30	15	1.0∅	100∅	30†							32		P-A	Ge	85J		TO 1	
1671#	TK45C	200	1.40	40		30	.25		12∅	1.0∅	66				5.0			16		P-A	Ge	75		RO47	
1672	2N1186	200	1.50	60			.38		6.0	1.0	50									P	Ge	100J		TO 5	
1673	2N1451	200	1.50	45	400	10		15	2.0∅	20∅	45†									P-A	Ge	85J		TO 5	
1674#	GET102	200	1.50	30	1A		.20	25	2.0∅	1.0∅	100	e 2700	50	3.0	12	43	90	3.0	2.0u	P-A	Ge	85J		RO11	
1675#	GET113	200	1.50	15	1A		.20	25	2.0∅	1.0∅	100	e 2700	50	3.0	12	43	90	3.0	2.0u	P-A	Ge	85J		RO11	
1676♦#	SFT322	200	1.60	24	250	12	.30	15	1.0∅	100∅	50†							32		P-A	Ge	85J		TO 1	
1677♦#	SFT352	200	1.60	24	150	12	.30	15	6.0∅	1.0∅	50	e 1500	27	3.2				32		P-A	Ge	85J		TO 1	
1678#	TK40C	200	1.80	40		40	.25		12∅	1.0∅	90	e 2600	18	4.0	16				.98	P-A	Ge	75J		RO47	
1679	TR383	200	1.80	25	200	10	.30	25	1.0∅	150∅	72†							20		P-A	Ge	85J		TO 5	
1680	2N650	200	2.00	45	250	25	.35	15	6.0∅	1.0	40	e 1800						42 20		P-A	Ge	100J		TO 5	
1681	2N653	200	2.00	30	250	25	.35	15	6.0∅	1.0	40	e 1800						42 20		P-A	Ge	100J		TO 5	
1682	2N1187	200	2.00	60			.38		6.0	1.0	85									P	Ge	100J		TO 5	
1683	2N1382	200	2.00	25	200	15	.38		1.0∅	50∅	80									P-A	Ge	85J		TO 5	
1684	2N1383	200	2.00	25	200	15	.38		1.0∅	50∅	50									P-A	Ge	85J		TO 5	
1685	2N1446	200	2.00	45	400	15		10	1.0∅	20∅	35†							20	.80	P-A	Ge	85J		TO 5	
1686#	2S303	200#	2.00	25	50					1.0	50									P	Si				
1687#	2SB51	200	2.00	30	200	3.0		16	1.0∅	20	43†							25		P-A	Ge	85J		TO 5	
1688#	TK21C	200	2.00	30		30	.25		9.0∅	1.0∅	22	e 700	17	1.6						P-AB	Ge	75J		RO47	
1689#	TK35C	200	2.00 \$Δ	16		12	.25	8.0	.50∅	10	2.0							13	1.04	P-A	Ge	75		RO47	
1690	2N1452	200	2.20	45	400	10		15	2.0∅	20∅	60†									P-A	Ge	85J		TO 5	
1691#	SFT353	200	2.40	24	150	12	.30	15	6.0∅	1.0∅	80	e 2300	40	3.8						P-A	Ge	85J		TO 1	
1692	2N651	200	2.50	45	250	25	.35	15	6.0∅	1.0	75	e 3100						44 20		P-A	Ge	100J		TO 5	
1693	2N654	200	2.50	30	250	25	.35	15	6.0∅	1.0	75	e 3100						44 20		P-A	Ge	100J		TO 5	
1694	2N1188	200	2.50	60			.38		6.0	1.0	155									P	Ge	100J		TO 5	
1695♦#	SFT323	200	2.60	24	250	12	.30	15	1.0∅	100∅	85†									P-A	Ge	85J		TO 1	

# 1. JUNCTION TRANSISTORS

IN ORDER OF MAXIMUM COLLECTOR DISSIPATION,  $f_{\alpha b}$ , AND TYPE NO.



LINE No.	TYPE No.	Max. COLL. DISS. in Free Air (mw)	$f_{\alpha b}$ (Mc.)	ABSOLUTE MAX. RATINGS @ 25°C						TYPICAL PARAMETERS @ 25°C										DESCRIPTION				
				$BV_{cb}$ (volt)	$I_c$ (ma)	$BV_{eb}$ (volt)	De-rate Free Air C/mw	Max. $I_{cbo}$ @ Max. $V_{cb}$ ( $\mu a$ )	BIAS		$h_{fe}$ or $h_{FE} - \dagger$	CIRCUIT			Max. NF (db)	Gain (db)	$C_{ob}$ (pf)	$r_{bb} \times C_{ob}$ (nsec)	$t_r$ (sec)	Type P - PNP N - NPN	Mat.	Max. Temp. (°C)	S T A T U S	Dwg. No.
									$V_{cb}$ (volt)	$I_e$ (ma)		$h_i$ (ohm)	$h_o$ ( $\mu mho$ )	$h_r$ ( $\times 10^{-4}$ )										
1696	2N381	200	3.00	50	400	20	.20	10	5.0	10	60	e	300	420	6.6		20			P-A	Ge	100J		TO 5
1697	2N652	200	3.00	45	250	25	.35	15	6.0	1.0	160	e	5750				46	20		P-A	Ge	100J		TO 5
1698	2N1185	200	3.00	45			.38		6.0	1.0	295									P	Ge	100J		TO 5
1699	2N1194	200	3.00	45			.38		6.0	1.0	345									P	Ge	100J		TO 5
1700	2N1447	200	3.00	45	400	15		10	1.0	20	52†				.50		20	1.1		P-A	Ge	85J		TO 5
1701	2N1706	200	3.00	25	400	5.0		10	5.0	10	90						20			P	Ge	100		TO 5
1702	2N1707	200	3.00	30	400	10		15	5.0	10	95						20			P	Ge	100		TO 5
1703#	2SB52	200	3.00	30	200	3.0		16	1.0	20	83†		28	.60	8.0	12	25			P-A	Ge	85J		TO 5
1704#	2SB53	200	3.00	30	250	15		10	1.0	20	70†		28	.60	7.0	8.0	25			P-A	Ge	85J		TO 5
1705	2N1413	200	3.20	35	200	10	.30	12	5.0	1.0	30	b	29	.65	4.8		26			P-Δ	Ge	85J		TO 5
1706	2N655	200	3.50	30	250	25	.35	15	6.0	1.0	160	e	5750				46	20		P-A	Ge	100J		TO 5
1707	2N1353	200	3.50Δ	15	200	10	.40	6.0	1.0	10	70†				10		12	1.8	.60u	P-A	Ge	85J		TO 5
1708#	TK24C	200	3.50	30			.25		9.0	1.0	40	e	1200	23	3.0					P-AB	Ge	75J		RO47
1709	2N1414	200	3.60	35	200	10	.30	12	5.0	1.0	44	b	29	.62	5.2		26			P-Δ	Ge	85J		TO 5
1710#	TK36C	200	3.70\$Δ	16		12	.25	8.0	5.0	10	3.7						13	1.3		P-A	Ge	75		RO47
1711	2N382	200	4.00	50	400	20	.20	10	5.0	10	90	e	450	400	6.9		20			P-A	Ge	100J		TO 5
1712	2N1415	200	4.00	35	200	10	.30	12	5.0	1.0	64	b	29	.55	5.7		26			P-Δ	Ge	85J		TO 5
1713	2N1448	200	4.00	45	400	15		10	1.0	20	70†			.70			20	1.3		P-A	Ge	85J		TO 5
1714	2N1705	200	4.00	18	400	5.0		10	6.0	1.0	110		30	.50	3.0		20			P	Ge	100		TO 5
1715	2N1175	200	4.20	35	200	10	.30	12	1.0	20	90†	b	28	.45	5.9		26			P-A	Ge	85J		TO 5
1716	2N1175A	200	4.20	35	200	10	.30	12	1.0	20	90†	b	28	.45	5.9	6.0	26			P-A	Ge	85J		TO 5
1717#	2G395	200	4.50	15	200	20	.30	6.0	5.0	1.0	87†	b			90		12	1.6	.55u	P-A†	Ge	100S		TO 5
1718	2N1354	200	4.50Δ	30	200	20	.40	6.0	1.0	10	70†			9.0			12	1.5	.55u	P-A	Ge	85J		TO 5
1719	2N110	200	5.00	40	50	40	.30		10	10	3.2-hf <sub>b</sub>	e	-560	76	3.0		.50		.50u	P-PC	Ge	100J	R	OV 2
1720	2N383	200	5.00	50	400	20	.20	10	5.0	10	115	e	550	380	7.2		20			P-A	Ge	100J		TO 5
1721	2N576	200	5.00	20	400	15	.37	20	.40	400	30†								1.0u	N-A†	Ge	100J		TO 5
1722	2N1247	200	5.00	6.0			.90		5.0		25									N	Si	175A		TO 5
1723	2N1248	200	5.00	6.0			.90		5.0		20									N	Si	175A		TO 5
1724	2N1280	200	5.00	16	400	10	.30	10	1.0	20	60†						20			P-A	Ge	85J		TO 5
1725	2N1284	200	5.00	20	400	10	.30	6.0	1.0	10	90†						15	1.3		P-A	Ge	85J		TO 5
1726	2N1348	200	5.00	40	400	25	.30	10	.30	10	95†						12	.78		P-A	Ge	85J		TO 5
1727	2N1449	200	5.00	45	400	15		10	1.0	20	95†			1.1			20	2.0		P-A	Ge	85J		TO 5
1728	2N1471	200	5.00	12	200	7.0	.30	5.0	6.0	1.0	160†						18	1.8		P-A	Ge	85J		TO 5
1729#	2SA205	200	5.00	30	200	20	.30	6.0	1.0	10	40†	b	28	1.1	9.0		15		.40u	P-A	Ge	85J		TO 5
1730	KGS1001	200	5.00	15	400	1.0	.35	50	6.0	1.0	30		30				14			P	Ge	85S	T	TO 5
1731	KGS1005	200	5.00	30			.35		150		40									P-A	Ge			TO 5
1732	2N1605A	200	6.00	40	100	12	.38	10	.25	20	60†						15			N-A†	Ge	100		TO 5
1733#	TK20C	200	6.00	30			.25		4.5	1.0	40	e	1100	30			40	20	1.3	PAB†	Ge	75J		RO47
1734#	TK30C	200	6.00	30			.25		4.5	1.0	40	e	1100	30			4.0	20	1.3	P-A†	Ge	75J		RO47
1735#	2G138	200	7.00	15	200	20	.30	6.0	5.0	1.0		e					34	12		P-A	Ge	100S		TO 5
1736#	2G601	200	7.00	20	200	20	.30	6.0	5.0	1.0		e					36	12		P-A	Ge	100S		TO 5
1737	2N414B	200	7.00	30	400	20	.30	6.0	6.0	1.0	60						12			P-A	Ge	85J		TO 5
1738	2N414C	200	7.00	30	400	20	.30	6.0	6.0	1.0	60						12			P	Ge	85J		TO 5
1739	2N1281	200	7.00	16	400	10	.30	10	1.0	20	90†						10	.70	.90u	P-A	Ge	85J		TO 5
1740#	2SA206	200	7.00	30	200	20	.30	6.0	1.0	10	55†	b	28	.80	10		15		.35u	P-A	Ge	85J		TO 5





# 1. JUNCTION TRANSISTORS

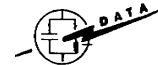
IN ORDER OF MAXIMUM COLLECTOR DISSIPATION,  $f_{\alpha b}$ , AND TYPE NO.



LINE No.	TYPE No.	Max. COLL. DISS. in Free Air (mw)	$f_{\alpha b}$ (Mc.)	ABSOLUTE MAX. RATINGS @ 25°C					TYPICAL PARAMETERS @ 25°C										DESCRIPTION						
				BV <sub>cb</sub> (volt)	I <sub>c</sub> (ma)	BV <sub>eb</sub> (volt)	De-rate Free Air C/mw	Max. I <sub>cb0</sub> @ Max. V <sub>cb</sub> (μa)	BIAS		h <sub>fe</sub> or hFE - †	CIRCUIT			Max. NF (db)	Gain (db)	C <sub>ob</sub> (pf)	r <sub>bb</sub> × C <sub>ob</sub> (nsec)	t <sub>r</sub> (sec)	Type P - NPN N - NPN	Mat.	Max. Temp. (°C)	STATUS	Dwg. No.	
									V <sub>cb</sub> (volt)	I <sub>e</sub> (ma)		h <sub>i</sub> (ohm)	h <sub>o</sub> (μmho)	h <sub>r</sub> (×10 <sup>-4</sup> )											
1831#	2G1024	225	2.00	70	500	20	.27	30	5.0	1.0	30	b	30	.70	4.0	15		40			P-A†	Ge	85J		TO 5
1832	2N524	225	2.00	45	500	15	.27	10	5.0	1.0	35	b	31	.65	4.0	15		25			P-A	Ge	85J		TO 5
1833#	2SB218	225	2.00	80	500	20	.27	10∅	1.0∅	200∅	50†						30			P-A	Ge	85J		TO 5	
1834#	2SB221	225	2.00	30	200	10	.27	16∅	1.0∅	20∅	72†						27	25			P-A	Ge	85J		TO 5
1835#	2SB224	225	2.00	45	500	15	.27	10∅	1.0∅	20∅	35†										P-A	Ge	85J		TO 5
1836	GT1644	225	2.00	12		12	.55	10	6.0∅	1.0	15	b	35	1.0	20						P-A	Si	150S		TO 5
1837♦#	SFT222	225	2.00	30	250	15	.27	15	1.0∅	100∅	50†										P-A	Ge	85J		TO 5
1838♦#	SFT243	225	2.00	60	500	25	.27	15	1.0∅	100∅	60†						15	25			P-A	Ge	85J		TO 5
1839♦#	SFT252	225	2.00	30	150	15	.27	15	6.0∅	1.0∅	50						15	25			P-A	Ge	85J		TO 5
1840#	2G270	225	2.50	20∅	200		.27	16	5.0	1.0	40†	b	30				15	33	25		P-A	Ge	85J		TO 5
1841#	2G320	225	2.50	20∅	200		.27	16	5.0	1.0	50†	b	30					25			P-A	Ge	85J		TO 5
1842#	2G525	225	2.50	45	500	15	.27	10	5.0	1.0	52†	b	31	.60	5.0	15		25			P-A	Ge	85J		TO 5
1843#	2G1025	225	2.50	70	500	20	.27	30	5.0	1.0	44	b	27	.64	4.5	15		40			P-A†	Ge	85J		TO 5
1844	2N525	225	2.50	45	500	15	.27	10	5.0	1.0	52	b	31	.65	5.0	15		25			P-A	Ge	85J		TO 5
1845#	2SB222	225	2.50	30	200	10	.27	16∅	1.0∅	20∅	97†						28	25			P-A	Ge	85J		TO 5
1846#	2SB225	225	2.50	45	500	15	.27	10∅	1.0∅	20∅	53†										P-A	Ge	85J		TO 5
1847♦#	SFT242	225	2.50	45	500	25	.27	15	1.0∅	100∅	70†						15	25			P-A	Ge	85J		TO 5
1848#	2G526	225	3.00	45	500	15	.27	10	5.0	1.0	73†	b	30	.42	6.5	15		25			P-A	Ge	85J		TO 5
1849#	2G1026	225	3.00	70	500	20	.27	30	5.0	1.0	64	b	30	.45	5.0	15		40			P-A†	Ge	85J		TO 5
1850	2N526	225	3.00	45	500	15	.27	10	5.0	1.0	73	b	30	.42	6.5	15		25			P-A	Ge	85J	M	TO 5
1851♦	2N1924	225	3.00	60	500	25	.27	10∅	5.0∅	1.0	44	e	1400	30	4.5			18			P-A	Ge	85J		TO 5
1852#	2SB223	225	3.00	30	200	10	.27	16∅	1.0∅	20∅	150†						29	25			P-A	Ge	85J		TO 5
1853#	2SB226	225	3.00	45	500	15	.27	10∅	1.0∅	20∅	73†										P-A	Ge	85J		TO 5
1854♦#	SFT223	225	3.00	30	250	15	.27	15	1.0∅	100∅	80†										P-A	Ge	85J		TO 5
1855♦#	SFT253	225	3.00	30	150	15	.27	15	6.0∅	1.0∅	80						15	25			P-A	Ge	85J		TO 5
1856#	2G271	225	3.10	20∅	200		.27	16	5.0	1.0	80†	b	30				15	33	25		P-A	Ge	85J		TO 5
1857#	2G321	225	3.10	20∅	200		.27	16	5.0	1.0	80†	b	30					25			P-A	Ge	85J		TO 5
1858#	2G527	225	3.30	45	500	15	.27	10	5.0	1.0	91†	b	29	.37	8.0	15		25			P-A	Ge	85J		TO 5
1859#	2G1027	225	3.30	70	500	20	.27	30	5.0	1.0	87	b	28	.42	5.2	15		40			P-A†	Ge	85J		TO 5
1860	2N527	225	3.30	45	500	15	.27	10	5.0	1.0	91	b	31	.37	8.0			25			P-A	Ge	85J		TO 5
1861#	2SB227	225	3.30	45	500	15	.27	10∅	1.0∅	20∅	91†	b	29	.37	8.0	15		25			P-A	Ge	85J		TO 5
1862#	2G577	225	3.50	60	200	10	.27	10	5.0	1.0	59†	b	29	.37	8.0	15			.80u		P-AD	Ge	85J		TO 5
1863♦	2N1925	225	3.50	60	500	25	.27	10∅	5.0∅	1.0	64	e	2000	35	6.0			18			P-A	Ge	85J		TO 5
1864♦	2N1926	225	4.00	60	500	25	.27	10∅	5.0∅	1.0	80	e	2500	40	7.0			18			P-A	Ge	85J		TO 5
1865	2N2171	225	7.50	50	400	20	.33	10	5.0	10	190			850	500	.75	3.5	20			P-A	Ge	100J		TO 5
1866#	2SA86	225	50.0	45	10	1.0	.20		9.0	1.0	80			2200	8.5	1.7	19	2.2			P	Ge	85		TO 5
1867▼#	2SC28	225	100	40	50			1.0∅	10∅	10	30							4.0	.20		N-ME	Si	150J		TO 5
1868	2N537	225	750	30	40	1.0	.30		10	10	50	b	6.0	10	13			2.5	1.0n		P-ME	Ge	100J	AR	TO29
1869	2N1195	225	750	30	40	1.0	.25		10	10	50	b	60	10	13			2.5	1.0n		P-ME	Ge	100J	MR	TO29
1870#	2XOC318	227	1.50	Pair of	OC318																				
1871#	OC318	227	1.50	20	300		.22	20∅	1.0∅	300∅	65†										P-A	Ge	75J		RO43
1872#	ASY12	227		32	600		.22	20∅	.60∅	600∅	20†Δ										P-A†	Ge	75J		RO43
1873#	ASY13	227		60	600		.22	20∅	.60∅	600∅	20†Δ										P-A†	Ge	75J		RO43
1874	2N44	240	1.00	45	300	5.0	.25		1.0	20	31†		31	.90	4.0	6		40			P-A	Ge	85J	F	RO32
1875	2N1056	240	1.00	75	100	15	.25	25	75	1.0	32							40			P-A†	Ge	100S		

# 1. JUNCTION TRANSISTORS

IN ORDER OF MAXIMUM COLLECTOR DISSIPATION,  $f_{\alpha b}$ , AND TYPE NO.



LINE No.	TYPE No.	Max. COLL. DISS. in Free Air (mw)	$f_{\alpha b}$ (Mc.)	ABSOLUTE MAX. RATINGS @ 25°C					TYPICAL PARAMETERS @ 25°C										DESCRIPTION					
				BV <sub>cb</sub> (volt)	I <sub>c</sub> (ma)	BV <sub>eb</sub> (volt)	De-rate Free Air C/mw	Max. I <sub>cb0</sub> @ Max. V <sub>cb</sub> (μa)	BIAS		h <sub>fe</sub> or h <sub>FE</sub> - †	CIRCUIT			Max. NF (db)	Gain (db)	C <sub>ob</sub> (pf)	r <sub>bb</sub> × C <sub>ob</sub> (nsec)	t <sub>r</sub> (sec)	Type P - PNP N - NPN	Mat.	Max. Temp. (°C)	STATUS	Dwg. No.
									V <sub>cb</sub> (volt)	I <sub>e</sub> (ma)		h <sub>i</sub> (ohm)	h <sub>o</sub> (μmho)	h <sub>r</sub> (×10 <sup>-4</sup> )										
1876	2N43	240	1.30	45	300	5.0	.25		1.0	1.0	53†	29	.80	5.0	6		40		P-A	Ge	85J		RO32	
1877	2N43A	240	1.30	45	300	5.0	.25		1.0	20	53†	29	.80	5.0	6		40		P-A	Ge	85J	F	RO32	
1878	2N319	240	2.00	20∅	200		.25	16	1.0∅	20∅	33					2		P-A	Ge	85J	T	TO 5		
1879	2N320	240	2.50	20∅	200		.25	16	1.0∅	20∅	48					22		P-A	Ge	85J	T	TO 5		
1880	2N321	240	3.00	20∅	200		.25	16	1.0∅	20∅	80					22		P-A	Ge	85J	T	TO 5		
1881	2N1614	240	3.00	65	300	12	4.0	25	1.0∅	20∅	32†	b	31	.90	4.0	20		40		P-A	Ge	100S		RO32
1882	2N1057	240	3.50	45	300	5.0	.25	16	5.0	1.0	58							P-A†	Ge	100S				
1883#	OC463	240	5.00	10∅	50		.52		5.0∅	1.0	30	e	1800	100			25		P-A	Si	150J		RO41	
1884	2N1384	240	35.0	30	500	1.0		10		200	50							80n	P-D†	Ge	85A		TO11	
1885#	OC430	240		10∅	50		.52		5.0∅	1.0	15	e	900	50	10				P-A	Si	150J		RO41	
1886#	OC440	240		30∅	50		.52		5.0∅	1.0	15	e	900	30	10				P-A	Si	150J		RO41	
1887#	OC445	240		50∅	50		.52		5.0∅	1.0	15	e	900	30	10				P-A	Si	150J		RO41	
1888#	OC450	240		75∅	50		.52		5.0∅	1.0	20	e	1100	25	6.0				P-A	Si	150J		RO41	
1889#	OC460	240		10∅	50		.52		5.0∅	1.0	30	e	1400	70	7.0				P-A	Si	150J		RO41	
1890#	OC465	240		20∅	50		.52		5.0∅	1.0	30	e	1400	70	7.0				P-A	Si	150J		RO41	
1891#	OC466	240		10∅	50		.52		5.0∅	1.0	30	e	1400	70	7.0	9.0			P-A	Si	150J		RO41	
1892#	OC468	240		10∅	50		.52		5.0∅	1.0	60	e	2300	85	10				P-A	Si	150J		RO41	
1893#	OC469	240		32	50		.52		.35∅	20∅	10†Δ								P-A†	Si	150J		RO41	
1894#	OC470	240		30∅	50		.52		5.0∅	1.0	30	e	1400	40	7.0				P-A	Si	150J		RO41	
1895#	OC480	240		125∅	50		.52		5.0∅	1.0	15	e	1100	25	6.0				P-A	Si	150J		RO41	
1896	2N1275	250	.10	100	50	60	.54	1.0	6.0	1.0	14					30		65	P-A	Si	160	T	TO 5	
1897	2N1623	250	.10	20	50	10	.54	1.0	6.0∅	1.0	25	e	1000	20			18	70	P-A	Si	160		TO 5	
1898	2N327A	250	.20	50	50	20	.35	.10	.50∅	3.0∅	14					30		65	P-A	Si	160	T	TO 5	
1899	2N1034	250	.20	50	50	20	.54	1.0	6.0∅	1.0	14					30		65	P-A	Si	160	T	TO 5	
1900	2N1655	250	.20	150	50	80	.54	1.0	.50∅	1.0∅	15†	e	1500	11	7.5			60	P-A	Si	160J		TO 5	
1901	2N1654	250	.25	100	50	60	.54	1.0	.50∅	1.0∅	30†	e	1500	11	7.5			60	P-A	Si	160J	T	TO 5	
1902	2N1656	250	.25	150	50	80	.54	1.0	.50∅	1.0∅	30†	e	1500	11	7.5			60	P-A	Si	160J		TO 5	
1903	2N328A	250	.30	50	50	20	.35	.10	.50∅	3.0∅	25					30		65	P-A	Si	160	A	TO 5	
1904	2N1035	250	.30	50	50	20	.54	1.0	6.0∅	1.0	25					30		65	P-A	Si	160	T	TO 5	
1905	2N1037	250	.30	50	50	20	.54	1.0	6.0∅	1.0	18					15		65	P-A	Si	160	T	TO 5	
1906	2N226	250	.40	30	150		.30	25	.60∅	100∅	60†	b	7.5	3.0			36	140	P-A	Ge	75J		TO25	
1907	2N227	250	.40	Pair of 2N226 with hFE matched to within 20 percent															P-A	Ge	75J		TO25	
1908	2N329A	250	.40	50	50	20	.35	.10	.50∅	3.0∅	50					30		65	P-A	Si	160	A	TO 5	
1909	2N1036	250	.40	50	50	20	.54	1.0	6.0∅	1.0	50					30		65	P-A	Si	160	T	TO 5	
1910	2N1640	250	.40	30	50	30	.54	.01	.50	.10Δ	9.0†	b	35					50	P-B	Si	160A		TO 5	
1911	C201	250	.40	40	50	40	.54	.10	.50∅	.10Δ	6.0†	b	35					50	P-B†	Si	160A		TO 5	
1912	C301	250	.40	70	50	70	.54	.10	.50∅	.10Δ	4.0†	b	35					50	P-B†	Si	160A		TO 5	
1913	C401	250	.40	40	50	40	.54	.10	.50∅	.10Δ	3.0†	b	35					50	P-B†	Si	160A		TO 5	
1914	2N224	250	.51	25	150		.30	25	.60∅	100∅	90†	b	7.5	2.0			40	125	P-A	Ge	75J		TO25	
1915	2N225	250	.51	Pair of 2N224 with hFE matched to within 20 percent																P-A	Ge	75J		TO25
1916	2N223	250	.60	18∅	150		.30	20	4.5∅	2.0∅	110						38		P-A	Ge	65J		TO25	
1917	2N1416	250	.60	Pair of 2N223 with hFE matched to within 20 percent																P-A	Ge	65J		TO25
1918	T1000	250	.60	45 to 85 Beta version of 2N223																			TO25	
1919	T1001	250	.60	70 to 120 Beta version of 2N223																			TO25	
1920	2N181	250	.70	30		30	.20	10	6.0	1.0	60					12	43	25	P-A	Ge	75		TO25	

# I. JUNCTION TRANSISTORS

IN ORDER OF MAXIMUM COLLECTOR DISSIPATION,  $f_{\alpha b}$ , AND TYPE NO.



LINE No.	TYPE No.	Max. COLL. DISS. in Free Air (mw)	$f_{\alpha b}$ (Mc.)	ABSOLUTE MAX. RATINGS @ 25°C					TYPICAL PARAMETERS @ 25°C										DESCRIPTION						
				$V_{cb}$ (volt)	$I_c$ (ma)	$V_{eb}$ (volt)	De-rate Free Air $P/mw$	Max. $I_{cbo}$ @ Max. $V_{cb}$ ( $\mu A$ )	BIAS		$h_{fe}$ or $h_{FE} - \dagger$	CIRCUIT			Max. NF (db)	Gain (db)	$C_{ob}$ (pf)	$f_{bb} \times C_{ob}$ (nsec)	$t_r$ (sec)	Type	Mat.	Max. Temp. (°C)	STATUS	Dwg. No.	
									$V_{cb}$ (volt)	$I_e$ (ma)		$h_i$ (ohm)	$h_o$ ( $\mu mho$ )	$h_r$ ( $\times 10^{-4}$ )											
1921	2N1643	250	.70	25	50	20	.54	.001	.50	.10 $\Delta$	16 $\dagger$	b	35								P-A	Si	160A		TO 5
1922 $\nabla$ #	2S305	250	.75	125	50	50	.50	.10 $\emptyset$	5.0	10	20										P-A	Si	150A		TO 5
1923	2N1641	250	.80	30	50	30	.54	.01	.50	.10 $\Delta$	13 $\dagger$	b	35								P-B	Si	160A		TO 5
1924	2N2002	250	.80	30	100	30	.90	.001	6.0	1.0											P	Si	200		TO 5
1925	2N2003	250	.80	30	100	30	.90	.003	6.0	1.0											P	Si	200		TO 5
1926	2N2004	250	.80	50	100	50	.90	.0015	6.0	1.0											P	Si	200		TO 5
1927	2N2005	250	.80	50	100	50	.90	.005	6.0	1.0											P	Si	200		TO 5
1928	2N2006	250	.80	60	100	60	.90	.002	6.0	1.0											P	Si	200		TO 5
1929	2N2007	250	.80	60	100	60	.90	.005	6.0	1.0											P	Si	200		TO 5
1930	C202	250	.80	25	50	25	.54	.01	.50 $\emptyset$	.10 $\Delta$	13 $\dagger$	b	35								P-B $\dagger$	Si	160A		TO 5
1931	C302	250	.80	12	50	12	.54	.50m	.50 $\emptyset$	.10 $\Delta$	11 $\dagger$	b	35								P-B $\dagger$	Si	160A		TO 5
1932	C402	250	.80	15	50	15	.54	.003	.50 $\emptyset$	.10 $\Delta$	13 $\dagger$	b	35								P-B $\dagger$	Si	160A		TO 5
1933	2N938	250	1.00 $\Delta$	35 $\emptyset$	100	40	.60	.025	6.0	1.0	15	b	35	1.4	10						P-A	Si	175J	M	TO18
1934	2N943	250	1.00 $\Delta$	40	50	40	.60		6.0	1.0											P-A $\Delta$	Si	175J		TO18
1935	2N944	250	1.00 $\Delta$	40	50	40	.60		6.0	1.0											P-A $\Delta$	Si	175J		TO18
1936	2N945	250	1.00 $\Delta$	50	50	50	.60		6.0	1.0											P-A $\Delta$	Si	175J		TO18
1937	2N946	250	1.00 $\Delta$	80	50	80	.60		6.0	1.0											P-A $\Delta$	Si	175J		TO18
1938	2N1024	250	1.00 $\Delta$	15 $\emptyset$	100	15	.60	.025	6.0	1.0	15	b	35	1.4	10						P-A	Si	175J		TO 5
1939	2N1025	250	1.00 $\Delta$	35 $\emptyset$	100	40	.60	.025	6.0	1.0	15	b	35	1.4	10						P-A	Si	175J	A	TO 5
1940	2N1474	250	1.00 $\Delta$	60	100	60	.60	.05 $\emptyset$	6.0	1.0	26	b	40	1.4	10						P-A	Si	175J		TO 5
1941	2N1475	250	1.00 $\Delta$	60	100	60	.60	.05 $\emptyset$	6.0	1.0	60	b	40	1.4	10						P-A	Si	175J		TO 5
1942	2N1476	250	1.00 $\Delta$	100	100	100	.60	.20 $\emptyset$	6.0	1.0	24	b	45	1.4	10						P-A	Si	175J		TO 5
1943	2N1477	250	1.00 $\Delta$	100	100	100	.60	.20 $\emptyset$	6.0	1.0	45	b	45	1.4	10						P-A	Si	175J		TO 5
1944	2N1919	250	1.00 $\Delta$	40	50	40	.60		6.0	1.0											P-A $\Delta$	Si	175J		TO 5
1945	2N1920	250	1.00 $\Delta$	40	50	40	.60		6.0	1.0											P-A $\Delta$	Si	175J		TO 5
1946	2N1921	250	1.00 $\Delta$	50	50	50	.60		6.0	1.0											P-A $\Delta$	Si	175J		TO 5
1947	2N1922	250	1.00 $\Delta$	80	50	80	.60		6.0	1.0											P-A $\Delta$	Si	175J		TO 5
1948#	2S301	250	1.00	60	100	30	.50	.10 $\emptyset$	5.0	10	15 $\dagger$										P-A	Si	150A	T	TO 5
1949#	2S302	250	1.00	25	100	20	.50	.10 $\emptyset$	5.0	10	20 $\dagger$										P-A	Si	150A	T	TO 5
1950#	2SB89	250	1.00	25	150	12	.24	.16	1.0	150	70 $\dagger$										P	Ge	85		TO 5
1951#	2SB189	250	1.00	25	250	12	.20		1.0	.10 $\emptyset$	75 $\dagger$										P-A	Ge	75J		X 5
1952#	BCZ10	250	1.00	25	50	20	.50	.10	6.0	1.0 $\emptyset$	20										P-A	Si	150J		RO 8
1953#	BCZ12	250	1.00	60	50	30	.50	.10	6.0 $\emptyset$	1.0 $\emptyset$	15										P-A	Si	150J		RO 8
1954	C118	250	1.00	12	50	6.0	.54	.001	3.0 $\emptyset$	.01 $\emptyset$	15 $\dagger$										P-A	Si	160J		TO 5
1955	C119	250	1.00	12	50	6.0	.54	.001	3.0 $\emptyset$	.01 $\emptyset$	25 $\dagger$										P-A	Si	160J		TO 5
1956	OC200	250	1.00		50			.01	6.0	1.0	20										P	Si	150J		TO 5
1957	2N1642	250	1.20	30	50	30	.54	.01	.50	.10 $\Delta$	19 $\dagger$	b	35								P-B	Si	160A		TO 5
1958	C103	250	1.20	30	50	30	.54	.10	.50 $\emptyset$	.10 $\Delta$	19 $\dagger$	b	35								P-B $\dagger$	Si	160A		TO 5
1959	C106	250	1.20	30	50	30	.54	.10	.50 $\emptyset$	.10 $\Delta$	40 $\dagger$										P-B $\dagger$	Si	160A		TO 9
1960	2N939	250	2.00 $\Delta$	35 $\emptyset$	100	40	.60	.025	6.0	1.0	30	b	35	1.4	10						P-A $\Delta$	Si	175J		TO18
1961	2N940	250	2.00 $\Delta$	35 $\emptyset$	100	40	.60	.025	6.0	1.0	60	b	35	1.4	10						P-A $\Delta$	Si	175J		TO18
1962	2N1026	250	2.00 $\Delta$	35 $\emptyset$	100	40	.60	.025	6.0	1.0	30	b	35	1.4	10						P-A $\Delta$	Si	175J	A	TO 5
1963	2N1220	250	2.00 $\Delta$	30	100	20	.60	.10	.25 $\emptyset$	5.0 $\emptyset$	9.0 $\Delta$ $\dagger$										P-A	Si	175J		TO 5
1964	2N1222	250	2.00 $\Delta$	30	100	10	.60	.10	6.0	1.0	9.0 $\Delta$	b									P-A	Si	175J		TO 5
1965	2N1223	250	2.00	40	100	10	.60	.10	6.0	1.0	6.0 $\Delta$	b									P-A	Si	175J		TO 5



# 1. JUNCTION TRANSISTORS

IN ORDER OF MAXIMUM COLLECTOR DISSIPATION,  $f_{\alpha b}$ , AND TYPE NO.



LINE No.	TYPE No.	Max. COLL. DISS. in Free Air (mw)	$f_{\alpha b}$ (Mc.)	ABSOLUTE MAX. RATINGS @ 25°C					TYPICAL PARAMETERS @ 25°C										DESCRIPTION					
				BV <sub>cb</sub> (volt)	I <sub>c</sub> (ma)	BV <sub>eb</sub> (volt)	De-rate Free Air C/mw	Max. I <sub>cb0</sub> @ Max. V <sub>cb</sub> (μa)	BIAS		h <sub>fe</sub> or h <sub>FE</sub> - †	CIRCUIT			Max. NF (db)	Gain (db)	C <sub>ob</sub> (pf)	r <sub>bb</sub> × C <sub>ob</sub> (nsec)	t <sub>r</sub> (sec)	Type P - NPN N - NPN	Mat.	Max. Temp. (°C)	STATUS	Dwg. No.
									V <sub>cb</sub> (volt)	I <sub>e</sub> (ma)		h <sub>i</sub> (ohm)	h <sub>o</sub> (μmho)	h <sub>r</sub> (×10 <sup>-4</sup> )										
1966	2N1373	250	2.00	45	200	25	.38		1.0	50	45							P-A	Ge	100J		TO 5		
1967	2N1374	250	2.00	25	200	15	.38		1.0	50	70							P-A	Ge	100J		TO 5		
1968	2N1375	250	2.00	45	200	25	.38		1.0	50	70							P-A	Ge	100J		TO 5		
1969	2N1376	250	2.00	25	200	15	.38		1.0	50	95							P-A	Ge	100J		TO 5		
1970	2N1377	250	2.00	45	200	25	.38		1.0	50	95							P-A	Ge	100J		TO 5		
1971	2N1378	250	2.00	12		7	.38		1.0	50	200							P-A	Ge	100J		TO 5		
1972	2N1379	250	2.00	25	200	15	.38		1.0	50	200							P-A	Ge	100J		TO 5		
1973	2N1380	250	2.00	12	200	7.0	.38		1.0	50	100							P-A	Ge	100J		TO 5		
1974	2N1381	250	2.00	25	200	15	.38		1.0	50	100							P-A	Ge	100J		TO 5		
1975	2N1469	250	2.00Δ	35	100	40	.60	.025	6.0	1.0	60	b	35	1.4	10		7.0	P-ΔΔ	Si	175J		TO 5		
1976	2N1474A	250	2.00Δ	60	100	60	.60	.05	6.0	1.0	30	b	40	1.4	10			P-A	Si	175J		TO 5		
1977	2N1997	250	3.00	45	500	45	.30	6.0	1.0	100	75†						12	P-A	Ge	100S		TO 5		
1978▼#	2S304	250	3.00	15	50	15	.50	.10	5.0	10	75						40	P-A	Si	150A		TO 5		
1979#	BCZ11	250	3.00	25	50	20	.50	.10	6.0	1.0	35							P-Δ	Si	150J		RO 8		
1980	2N1027	250	4.00Δ	15	100	18	.60	.025	6.0	1.0	30	b	35	1.4	10		7.0	P-A	Si	175J		TO 5		
1981♦#	OC201	250	4.00		50			.01	6.0	1.0	30							P	Si	150J				
1982	2N1219	250	5.00Δ	30	100	20	.60	.10	.25	5.0	18Δ†	b						25	P-A	Si	175J		TO 5	
1983	2N1221	250	5.00Δ	30	100	10	.60	.10	6.0	1.0	18Δ	b						25	P-A	Si	175J		TO 5	
1984	2N1028	250	6.00	10	100	12	.60	.025	6.0	1.0	9.0Δ	b	35	1.4	10		7.0	P-ΔΔ	Si	175J		TO 5		
1985#	2SA41	250	6.00	35	40	20		50	6.0	1.0	45						10	P-A	Ge	70J				
1986	2N1998	250	6.50	35	500	30	.30	6.0	1.0	200	100†						12	P-A	Ge	100S		TO 5		
1987	2N597	250	8.00	45	500	45	.30	25	1.0	100	70						15	P-A	Ge	100J		TO 9		
1988	2N598	250*	8.00§	35	500	30	.30	25	1.0	100	125						15	P-A	Ge	100J		TO 9		
1989	2N1478	250	8.00	30	500	20	.30	25	1.0	100	70†						15	P-ΔΔ	Ge	100J		TO 9		
1990	2N942	250	10.0Δ	25	50	25	.60	2.5m	6.0	1.0							7.0	P-ΔΔ	Si	175J		TO18		
1991	2N1918	250	10.0Δ	25	50	25	.60	2.5m	6.0	1.0							7.0	P-ΔΔ	Si	175J		TO 5		
1992#	2SC192	250	10.0	60	10	1.0		2.0	20	1.0	21		60	.15	1.2		3.0	N-G	Si	150J		TO 5		
1993#	2SC195	250	10.0	30	10	1.0		1.0	20	1.0	21		60	.15	1.2		3.0	N-G	Si	150J		TO 5		
1994	CK419	250	10.0	50	50	5.0	.54	.10	6.0	1.0	15†	e					10	N-D	Si	160J		TO 5		
1995	CK420	250	10.0	50	50	5.0	.54	.10	6.0	1.0	30†	e					10	N-D	Si	160J		TO 5		
1996	CK421	250	10.0	50	50	5.0	.54	.10	6.0	1.0	60†	e					10	N-D	Si	160J		TO 5		
1997	CK422	250	10.0	50	50	5.0	.54	.10	6.0	1.0	25†	e					10	N-D	Si	160J		TO 5		
1998	CK474	250	10.0	50	50	5.0	.54	1.0	6.0	1.0	15	e	1000				10	N-D	Si	160J		TO 5		
1999	CK475	250	10.0	50	50	5.0	.54	1.0	6.0	1.0	28	e	1700				10	N-D	Si	160J		TO 5		
2000	CK476	250	10.0	50	50	5.0	.54	1.0	6.0	1.0	60	e	1700				10	N-D	Si	160J		TO 5		
2001	CK477	250	10.0	50	50	5.0	.54	1.0	6.0	1.0	25	e	2500				10	N-D	Si	160J		TO 5		
2002	2N941	250	12.0Δ	25	50	25	.60	2.5m	6.0	1.0							7.0	P-ΔΔ	Si	175J		TO18		
2003	2N1917	250	12.0Δ	25	50	25	.60	2.5m	6.0	1.0							7.0	P-ΔΔ	Si	175J		TO 5		
2004	2N1999	250	12.0	30	500	20	.30	6.0	1.0	200	120†						12	P-A	Ge	100S		TO 5		
2005	2N599	250	16.0§	30	500	20	.30	25	1.0	100	175						15	P-A	Ge	100J	N	TO 9		
2006	2N1390	250	20.0	20	50	2.0	.50	.80	6.0	1.0								20	N-D	Si	175J	T	TO 5	
2007#	ST721	250#	20.0	45	25		.50	10	6.0	1.0	15	b	45	.50	2.0		15	N-D†	Si	175J		RO 3		
2008#	ST722	250#	23.0	45	25		.50	10	6.0	1.0	30	b	45	.45	4.0		15	N-D†	Si	175J		RO 3		
2009	2N1254	250	25.0Δ	15		5.0	.55	.20	10	2.0	25	b	30				10	PME†	Si	160A		TO 5		
2010	2N1256	250	25.0Δ	30		5.0	.55	.20	10	2.0	25	b	30				10	PME†	Si	160A		TO 5		

# 1. JUNCTION TRANSISTORS

IN ORDER OF MAXIMUM COLLECTOR DISSIPATION,  $f_{\alpha b}$ , AND TYPE NO.



LINE No.	TYPE No.	Max. COLL. DISS. in Free Air (mw)	$f_{\alpha b}$ (Mc.)	ABSOLUTE MAX. RATINGS @ 25°C						TYPICAL PARAMETERS @ 25°C										DESCRIPTION						
				$V_{cb}$ (volt)	$I_c$ (ma)	$V_{eb}$ (volt)	De-rate Free Air C/mw	Max. $I_{cb}$ @ Max. $V_{cb}$ ( $\mu$ A)	BIAS		$h_{fe}$ or $h_{FE} - \dagger$	CIRCUIT			Max. NF (db)	Gain (db)	$C_{ob}$ (pf)	$r_{bb} \times C_{ob}$ (nsec)	$t_r$ (sec)	Type P - NPN N - NPN	Mat.	Max. Temp. (°C)	S T A T U S	Dwg. No.		
									$V_{cb}$ (volt)	$I_e$ (ma)		$h_i$ (ohm)	$h_o$ ( $\mu$ mho)	$h_r$ ( $\times 10^{-4}$ )												
2011	2N1258	250	25.0 $\Delta$	50		5.0	.55	.20 $\emptyset$	10	2.0	25	b	30 $\square$									PME $\dagger$	Si	160A		TO 5
2012	2N1389	250	25.0	50	50	1.5	.50	.50	6.0	1.0												N-D	Si	175J	T	TO 5
2013#	2SC121	250	25.0	45	25	1.0		2.0 $\emptyset$	9.0	1.0	40											N-G	Si	175J		TO 5
2014	HA9054	250	25.0 $\Delta$	15		5.0	.55	.20 $\emptyset$	10	2.0	25	b	30 $\square$									PME $\dagger$	Si	160A		TO18
2015	HA9056	250	25.0 $\Delta$	30		5.0	.55	.20 $\emptyset$	10	2.0	25	b	30 $\square$									PME $\dagger$	Si	160A		TO18
2016	HA9058	250	25.0 $\Delta$	50		5.0	.55	.20 $\emptyset$	10	2.0	25	b	30 $\square$									PME $\dagger$	Si	160A		TO18
2018 $\blacktriangledown$	MT1254	250	25.0	30		5.0	.59	.20	1.0 $\emptyset$	10 $\emptyset$	35											P-ME	Si	175J		u 13
2019 $\blacktriangledown$	MT1256	250	25.0	40		5.0	.59	.20	1.0 $\emptyset$	10 $\emptyset$	35											P-ME	Si	175J		u 13
2020 $\blacktriangledown$	MT1258	250	25.0	30		5.0	.59	.20	1.0 $\emptyset$	10 $\emptyset$	100											P-ME	Si	175J		u 13
2021#	ST723	250#	28.0	45	25		.50	10	6.0 $\emptyset$	1.0 $\emptyset$	50	b	50	.40	5.0	15						N-D $\dagger$	Si	175J		RO 3
2022#	2SC122	250	30.0	45	25	1.0		2.0 $\emptyset$	9.0	1.0	90											N-G	Si	175J		TO 5
2023#	2SC193	250	30.0	60	10	1.0		2.0	20	1.0	21		60	.15	1.2							N-G	Si	150J		TO 5
2024#	2SC196	250	30.0	30	10	1.0		1.0	20	1.0	21		60	.15	1.2							N-G	Si	150J		TO 5
2025#	2SC123	250	35.0	45	25	1.0		2.0 $\emptyset$	9.0	1.0	140											N-G	Si	175J		TO 5
2026#	2SC124	250	35.0	45	25	1.0		.20 $\emptyset$	9.0 $\emptyset$	.05 $\emptyset$	40 $\dagger$											N-G	Si	175J		TO 5
2027	2N1255	250	40.0 $\Delta$	15		5.0	.55	.20 $\emptyset$	10	2.0	55	b	30 $\square$									PME $\dagger$	Si	160A		TO 5
2028	2N1257	250	40.0 $\Delta$	30		5.0	.55	.20 $\emptyset$	10	2.0	55	b	30 $\square$									PME $\dagger$	Si	160A		TO 5
2029	2N1259	250	40.0 $\Delta$	50		5.0	.55	.20 $\emptyset$	10	2.0	55	b	30 $\square$									PME $\dagger$	Si	160A		TO 5
2030	HA9055	250	40.0 $\Delta$	15		5.0	.55	.20 $\emptyset$	10	2.0	55	b	30 $\square$									PME $\dagger$	Si	160A		TO18
2031	HA9057	250	40.0 $\Delta$	30		5.0	.55	.20 $\emptyset$	10	2.0	55	b	30 $\square$									PME $\dagger$	Si	160A		TO18
2032	HA9059	250	40.0 $\Delta$	50		5.0	.55	.20 $\emptyset$	10	2.0	55	b	30 $\square$									PME $\dagger$	Si	160A		TO18
2033 $\blacktriangledown$	MT1255	250	40.0	30		5.0	.59	.20	1.0 $\emptyset$	10 $\emptyset$	55											P-ME	Si	175J		u 13
2034 $\blacktriangledown$	MT1257	250	40.0	40		5.0	.59	.20	1.0 $\emptyset$	10 $\emptyset$	55											P-ME	Si	175J		u 13
2035 $\blacktriangledown$	MT1259	250	40.0	50		5.0	.59	.20	1.0 $\emptyset$	10 $\emptyset$	65											P-ME	Si	175J		u 13
2036	2N1196	250	45.0	70	15	4.0	.50	.25 $\emptyset$	10	2.0	10	b	20	.30	.60	10	28	3.0				P-ME	Si	200A	A	TO 5
2037	HA7206	250	45.0	70		4.0	.50	.25 $\emptyset$	10	2.0	10	b	20	.30	.60	10	28	3.0				P-ME	Si	200A		TO18
2038	2N1388	250	50.0	45	50	1.5	.50	.50	6.0	1.0												N-D	Si	175J	T	TO 5
2039#	2SC191	250	50.0	60	10	1.0		2.0	20	1.0	21		60	.15	1.2							N-G	Si	150J		TO 5
2040#	2SC194	250	50.0	60	10	1.0		2.0	20	1.0	21		60	.15	1.2							N-G	Si	150J		TO 5
2041#	2SC197	250	50.0	30	10	1.0		1.0	20	1.0	21		60	.15	1.2							N-G	Si	150J		TO 5
2042	HA7207	250	55.0	70		4.0	.50	.25 $\emptyset$	10	2.0	10	b	20	.30	.60	10	22	3.0				P-ME	Si	200A		TO18
2043	2N1386	250	60.0	25	50	3.0	.50	.10	5.0 $\emptyset$	10 $\emptyset$	90 $\dagger$											N-D	Si	170J	T	TO 5
2044	2N1387	250	60.0	30	50	3.0	.50	.10	5.0 $\emptyset$	10 $\emptyset$	40 $\dagger$											N-D	Si	175J	T	TO 5
2045	2N1060	250	100	40 $\emptyset$	50	5.0	.50		5.0	5.0	40											N-D	Si	150J	R	TO28
2046 $\blacktriangledown$	MT1131	250	100	50		5.0	.59	1.0	10 $\emptyset$	150 $\emptyset$	25											P-ME	Si	175J		u 13
2047 $\blacktriangledown$	MT1132	250	100	50		5.0	.59	1.0	10 $\emptyset$	150 $\emptyset$	40											P-ME	Si	175J		u 13
2048 $\blacktriangledown$	MT1132A	250	100	60		5.0	.59	.50	10 $\emptyset$	150 $\emptyset$	40											P-ME	Si	175J		u 13
2049 $\blacktriangledown$	MT1132B	250	100	70		6.0	.59	.01	10 $\emptyset$	150 $\emptyset$	40											P-PL	Si	175J		u 13
2050 $\blacktriangledown$	MT1613	250	160	75		7.0	.59	.01	10 $\emptyset$	150 $\emptyset$	80											N-PL	Si	175J		u 13
2051#	AF118	250	175 $\emptyset$	50	30		.25	5.0	6.0 $\emptyset$	10	200											P-AD	Ge	75J		TO 7
2052	2N957	250	200	40		5.0		5.0	5.0 $\emptyset$	10 $\emptyset$	45 $\Delta$ $\dagger$											N-D	Si	150J	T	TO18
2053 $\blacktriangledown$	MT706	250	200	25		3.0	.59	.50	1.0 $\emptyset$	10 $\emptyset$	45											N-ME	Si	175J		u 13
2054 $\blacktriangledown$	MT706A	250	200	25		5.0	.59	.50	1.0 $\emptyset$	10 $\emptyset$	40											N-ME	Si	175J		u 13
2055 $\blacktriangledown$	MT706B	250	200	25		5.0	.59	.50	1.0 $\emptyset$	10 $\emptyset$	40											N-ME	Si	175J		u 13
2056 $\blacktriangledown$	MT753	250	200	25		5.0	.59	.50	1.0 $\emptyset$	10 $\emptyset$	80											N-ME	Si	175J		u 13

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LINE No.	TYPE No.	Max. COLL. DISS. in Free Air (mw)	$f_{\alpha b}$ (Mc.)	ABSOLUTE MAX. RATINGS @ 25°C					TYPICAL PARAMETERS @ 25°C										DESCRIPTION							
				BV <sub>cb</sub> (volt)	I <sub>c</sub> (ma)	BV <sub>eb</sub> (volt)	De-rate Free Air C/mw	Max. I <sub>cb0</sub> @ Max. V <sub>cb</sub> (μa)	BIAS		h <sub>fe</sub> or hFE - †	CIRCUIT			Max. NF (db)	Gain (db)	C <sub>ob</sub> (pf)	r <sub>bb</sub> × C <sub>ob</sub> (nsec)	t <sub>r</sub> (sec)	Type P - PNP N - NPN	Mat.	Max. Temp. (°C)	STATUS	Dwg. No.		
									V <sub>cb</sub> (volt)	I <sub>e</sub> (ma)		h <sub>i</sub> (ohm)	h <sub>o</sub> (μmho)	h <sub>r</sub> (×10 <sup>-4</sup> )												
2057▼	MT708	250	300	40		5.0	.59	.025	1.0∅	10∅	50											N-PL	Si	175J		u 13
2058▼	MT743	250	300	25		5.0	.59		.35∅	10∅	40											N-E	Si	175J		u 13
2059▼	MT744	250	300	25		5.0	.59		.35∅	10∅	80											N-E	Si	175J		u 13
2060▼	MT914	250	300	40		5.0	.59	.025	1.0∅	10∅	50											N-PL	Si	175J		u 13
2061	2N1495	250	320§	40	500	4.0	.30		1.0∅	200∅	60†											P-MD	Ge			TO 9
2062	2N2096	250	400§	25	500	4.0	.30	12∅	1.5∅	400∅	40†											P-D	Ge	100S		TO31
2063	2N2097	250	400§	40	500	4.0	.30	12∅	1.0∅	200∅	70†											P-D†	Ge	100S		TO31
2064	2N2099	250	400§	25	500	4.0	.30	12∅	1.5∅	400∅	40†											P-D	Ge	100S		TO 9
2065	2N2100	250	400§	40	500	4.0	.30	12∅	1.0∅	200∅	70†											P-D†	Ge	100S		TO 9
2066▼	MT707	250	400*	56		3.0	.59	5.0	1.0∅	10∅	12											N-ME	Si	175J		u 13
2067	2N1562	250	450§	25	250	2.0	.30	10	10	50	9.0											P-ME	Ge	100		
2068#	2G110	250	500§	36	50				6.0∅	2.0	20											P	Ge	85J		
2069	2N1561	250	500§	25	250	3.0	.30	10	10	50	10											P-ME	Ge	100		
2070	2N1174	250	600	35	200	35	.33		10	.50	90	b 60	.30	5.0	10							P-A	Ge	100S	R	TO29
2071	2N1173	250	800	35	200	35	.33		10	.50	70	b 60	.30	5.0	10							N-A	Ge	100S	R	TO29
2072	XT200	250	1000§	35	300	2.0		5.0∅														P-D	Ge	100S		TO 9
2073	2N270	250		25	150	12	.24	10	1.0∅	150	70											P-A	Ge	71A		RO27
2074	2N586	250		45	250	12	.24	16	1.0∅	250∅	60											P-A†	Ge	85A	T	RO27
2075	2N958	250		25		5.0		.50	1.0∅	10∅	40†											N-Δ				u 5
2076	2N959	250		25		5.0		.50	1.0∅	10∅	80†											N-Δ				u 5
2077	2N1468	250			20A	10	.54	1.0														N-A	Si	160	T	TO 5
2078♦	2N2173	250		25	600	3.0	.30	100	1.0∅	200∅	30†Δ											P-ME	Ge	100J	D	TO 5
2079▼	2N2214	250∅		25		5.0		5m∅	1.0∅	10∅	25†Δ											NPLΔ	Si	150J		TO51
2080#	2SB34	250		20	150	2.5		14∅	1.0∅	150	70†											P-A	Ge	85S		RO27
2081#	2SB38	250		25	150	12		16	1.0∅	150	70†											P-A	Ge	85S		RO27
2082	C610	250		40	50	40	.54															FET	Si	160		TO 5
2083	C611	250		40	50	40	.54															FET	Si	160		TO 5
2084	C612	250		40	50	40	.54															FET	Si	160		TO 5
2085	C613	250		40	50	40	.54															FET	Si	160		TO 5
2086	C614	250		40	50	40	.54															FET	Si	160		TO 5
2087	C615	250		40	50	40	.54															FET	Si	160		TO 5
2088	C620	250		10	50	10	.54															FET	Si	160		TO 5
2089	C621	250		10	50	10	.54															FET	Si	160		TO 5
2090	C622	250		10	50	10	.54															FET	Si	160		TO 5
2091	C623	250		10	50	10	.54															FET	Si	160		TO 5
2092	C624	250		10	50	10	.54															FET	Si	160		TO 5
2093	C625	250		10	50	10	.54															FET	Si	160		TO 5
2094▼	C631	250		150	50	30	.54		150		200											FET	Si	160		TO 5
2095▼	C632	250		250	50	40	.54		250		200											FET	Si	160		TO 5
2096▼	C633	250		350	50	40	.54		350		200											FET	Si	160		TO 5
2097	C650	250		45	50	45	.54															FET	Si	160		TO 5
2098	C651	250		35	50	35	.54															FET	Si	160		TO 5
2099	C652	250		25	50	25	.54															FET	Si	160		TO 5
2100	C653	250		15	50	15	.54															FET	Si	160		TO 5
2010	CK273	250		25	1K	10		1.0														N-AV	Si	160J		TO 5

# 1. JUNCTION TRANSISTORS

IN ORDER OF MAXIMUM COLLECTOR DISSIPATION,  $f_{cb}$ , AND TYPE NO.



LINE No.	TYPE No.	Max. COLL. DISS. in Free Air (mw)	$f_{cb}$ (Mc.)	ABSOLUTE MAX. RATINGS @ 25°C					TYPICAL PARAMETERS @ 25°C										DESCRIPTION						
				$V_{cb}$ (volt)	$I_c$ (ma)	$V_{eb}$ (volt)	De-rate Free Air C/mw	Max. $I_{cbo}$ @ Max. $V_{cb}$ ( $\mu$ a)	BIAS		$h_{fe}$ or $h_{FE} - \dagger$	CIRCUIT			Max. NF (db)	Gain (db)	$C_{ob}$ (pf)	$r_{bb} \times C_{ob}$ (nsec)	$t_r$ (sec)	Type P - PNP N - NPN	Mat.	Max. Temp. (°C)	STATUS	Dwg. No.	
									$V_{cb}$ (volt)	$I_e$ (ma)		$h_i$ (ohm)	$h_o$ ( $\mu$ mho)	$h_r$ ( $\times 10^{-4}$ )											
2102	CK277	250		90	1K	10		1.0										N-AV	Si	160J		TO 5			
2103	HA9048	275	25.0	25		5.0	.55	.30	1.0	10	20†	b	15	.35	4.0			P-M	Si	175J		TO 5			
2104	HA9049	275	25.0	25		5.0	.55	.20	1.0	10	60†	b	15	.35	4.0			P-M	Si	175J		TO 5			
2105	HA9078	275	25.0	25		5.0	.55	.30	1.0	10	20†	b	15	.35	4.0			P-M	Si	175J		TO18			
2106	HA9079	275	25.0	25		5.0	.55	.20	1.0	10	60†	b	15	.35	4.0			P-M	Si	175J		TO18			
2107	2N670	300	.70	40	2A	40	.20	75	1.5 $\emptyset$	1A $\emptyset$	100†							P- $\Delta$	Ge	85J	T	RO 2			
2108	2N674	300	1.10	75	2A	70	.20		1.5	1A $\emptyset$	160†							P- $\Delta$	Ge	85J		RO 2			
2109	2N1124	300	1.30	40	250	40	.20	75	6.0	10	125	b	4.0	2.0	5.5			P- $\Delta$	Ge	85J		RO 2			
2110♦#	OC122	300	1.30 $\emptyset$	32	500	12	.22	40	6.0 $\emptyset$	100 $\emptyset$	180					170		P-A	Ge	90J		TO 7			
2111	2N1125	300	1.50	40	250	40	.20	75	1.0 $\emptyset$	500 $\emptyset$	125							P-A†	Ge	85J		RO 2			
2112#	BCY11	300	1.50	60	250		.40	.01		30	20						7.0		P-A	Si	150J		RO 8		
2113#	NKT221	300	1.50	30	500		.20	40	4.5	500	70†							P	Ge	85					
2114#	NKT228	300	1.50	30	500		.20	40	4.5	500	70†							P	Ge	75					
2115♦#	OC123	300	1.50 $\emptyset$	50	500	15	.22	20	6.0 $\emptyset$	100 $\emptyset$	160							170		P-A†	Ge	90J		TO 7	
2116	2N2000	300	2.00	50	750	20	.25	10	.50 $\emptyset$	500 $\emptyset$	150†							25		P-A	Ge	100S		TO 5	
2117#	BCY10	300	2.00	32	125		.40	.01		10	50						7.0		P-A	Si	150J		RO 8		
2118#	BCY12	300	2.00	32	250		.40	.01		150	25						7.0		P-A	Si	150J		RO 8		
2119▼	GT5151	300	2.50	60		15	.25	25	.50 $\emptyset$	1000	40†							25		P	Ge			TO 5	
2120#	OC463K	300	5.00	10 $\emptyset$	50		.42		5.0 $\emptyset$	1.0	30	e	1800	100				25		P-A	Si	150J		RO43	
2121	2N2001	300	6.00	30	750	20	.25	6.0	.50 $\emptyset$	500 $\emptyset$	200†							25		P-A	Ge	100S		TO 5	
2123▼	GT5153	300	10.0	100		15	.25	25	.50 $\emptyset$	1000	80†							25		P	Ge			TO 5	
2124	2N839	300	30.0 $\emptyset$	45	50	2.0		1.0	5.0 $\emptyset$	1.0 $\emptyset$	35	b	40	.35	2.0	15		8.0		N-ME	Si	175		TO18	
2125	2N840	300	30.0 $\emptyset$	45	50	2.0		1.0	5.0 $\emptyset$	1.0 $\emptyset$	70	b	40	.35	2.0	15		8.0		N-ME	Si	175		TO18	
2126	2N842	300	30.0 $\emptyset$	45	50	2.0		1.0	5.0 $\emptyset$	1.0 $\emptyset$	40†	b	40	.35	2.0			6.0		N-ME	Si	175		TO18	
2127	ST1506	300	30.0	30						1.0	20†									N-D	Si				
2128	2N841	300	40.0 $\emptyset$	45	50	2.0		1.0	5.0 $\emptyset$	1.0 $\emptyset$	140	b	40	.35	2.0	15		8.0		N-ME	Si	175		TO18	
2129	2N843	300	40.0 $\emptyset$	45	50	2.0		1.0	5.0 $\emptyset$	10 $\emptyset$	100†	b	40	.35	2.0			6.0		N-ME	Si	175		TO18	
2130	2N754	300	45.0	60	50	3.0		1.0	10 $\emptyset$	5.0	50†	b	40	.35	2.0			10		N-ME	Si	175J		TO18	
2131	2N755	300	45.0	100	50	3.0		1.0	10 $\emptyset$	5.0	50†	b	40	.35	2.0			10		N-ME	Si	175J		TO18	
2132	2N844	300	50.0 $\emptyset$	60	50	3.0		1.0	10 $\emptyset$	5.0 $\emptyset$	80†	b	40	.35	2.0	14		6.0		N-ME	Si	175		TO18	
2133	2N845	300	50.0 $\emptyset$	100	50	3.0		1.0	10 $\emptyset$	5.0 $\emptyset$	80†	b	40	.35	2.0	14		6.0		N-ME	Si	175		TO18	
2134♦#	ZT40	300	70.0 $\emptyset$	20	50	6.0			6.0	10	35									N-ME	Si	150		TO18	
2135♦#	ZT41	300	70.0 $\emptyset$	20	50	6.0			6.0	10	60									N-ME	Si	150		TO18	
2136♦#	ZT42	300	70.0 $\emptyset$	45	50	6.0			6.0	10	30									N-ME	Si	150		TO18	
2137♦#	ZT43	300	70.0 $\emptyset$	45	50	6.0			6.0	10	60									N-ME	Si	150		TO18	
2138	2N929	300	80.0 $\emptyset$	45 $\emptyset$			.50	.01 $\emptyset$	5.0 $\emptyset$	.01 $\emptyset$	40 $\Delta$							4.0		8.0				TO18	
2139	2N930	300	80.0 $\emptyset$	45 $\emptyset$			.50	.01 $\emptyset$	5.0 $\emptyset$	.01 $\emptyset$	100 $\Delta$							4.0		8.0				TO18	
2140	2N780	300	100 $\emptyset$	45 $\emptyset$			2.0	.01	5.0 $\emptyset$	.03 $\emptyset$	20 $\Delta$							7.0		3.0				TO18	
2141	HA9531	300	100	50		5.0	.50	1.0	10 $\emptyset$	150 $\emptyset$	25†							35		.08u				TO18	
2142	HA9531A	300	100	60		5.0	.50	.50	10 $\emptyset$	150 $\emptyset$	25†	b	30	1.0	8.0			30		.08u				TO18	
2143	HA9532	300	100	50		5.0	.50	1.0	10 $\emptyset$	150 $\emptyset$	40†							35		.08u				TO18	
2144	HA9532A	300	100	60		5.0	.50	.50	10 $\emptyset$	150 $\emptyset$	40†	b	30	1.0	8.0			30		.08u				TO18	
2145▼	2N727	300	140 $\emptyset$	25	50	5.0	.15	10	1.0 $\emptyset$	10 $\emptyset$	40† $\Delta$							5.0					T	TO18	
2146	2N726	300	200	25	50	5.0	.15	10	1.0 $\emptyset$	10 $\emptyset$	15 $\Delta$ †							5.0						TO18	
2147▼	2N1708	300	200 $\emptyset$	25	200	3.0	.15	.025	1.0 $\emptyset$	10 $\emptyset$	20 $\Delta$							6.7		40n $\emptyset$	NEPL	Si	175		TO46

# 1. JUNCTION TRANSISTORS

IN ORDER OF MAXIMUM COLLECTOR DISSIPATION,  $f_{cb}$ , AND TYPE NO.



LINE No.	TYPE No.	Max. COLL. DISS. in Free Air (mw)	$f_{cb}$ (Mc.)	ABSOLUTE MAX. RATINGS @ 25°C						TYPICAL PARAMETERS @ 25°C										DESCRIPTION				
				$V_{cb}$ (volt)	$I_c$ (ma)	$V_{eb}$ (volt)	De-rate Free Air C/mw	Max. $I_{cbo}$ @ Max. $V_{cb}$ ( $\mu$ a)	BIAS		$h_{fe}$ or $h_{FE} - \dagger$	CIRCUIT			Max. NF (db)	Gain (db)	$C_{ob}$ (pf)	$r_{bb} \times C_{ob}$ (nsec)	$t_r$ (sec)	Type P - NPN N - NPN	Mat.	Max. Temp. (°C)	STATUS	Dwg. No.
									$V_{cb}$ (volt)	$I_e$ (ma)		$h_i$ (ohm)	$h_o$ ( $\mu$ mho)	$h_r$ ( $\times 10^{-4}$ )										
2148▼	2N2205	300	200\$Δ	25	200	3.0	.15	.025	1.0∅	10∅	20Δ						6∅	40n∅	ZNEPL	Si	175		TO18	
2149▼	2N2206	300	200\$Δ	25	200	3.0	.15	.025	1.0∅	10∅	40Δ						6∅	40n∅	ZNEPL	Si	175		TO46	
2150#	2S101	300	200	25	50	5.0	.50	5.0	5.0∅	10	40†							5.0n	PME†	Si	175J		TO18	
2151	TI485	300	200	20	50	3.0	.41	1.0	1.0∅	10∅	15Δ†						6.0∅	1.0n	NME†	Si	150J		TO18	
2152▼#	ZT706	300	200\$	25	200	3.0			1.0	10	20						6.0		N-ME	Si	175	T	TO18	
2153▼#	ZT1708	300	200\$	25	200	3.0			1.0	10	20						6.0		N-ME	Si	175	D	TO46	
2154▼	2N2256	300	250Δ\$	7.0Δ	100	1.0Δ	.50	10∅	1.0∅	10∅	17†Δ						5.0		NME†	Si	175J		TO18	
2155▼	2N2257	300	250Δ\$	7.0Δ	100	1.0Δ	.50	10∅	1.0∅	10∅	17†Δ						5.0		NME†	Si	175J		TO18	
2156	2N705	300∅	300	15	50	3.5	.25	3.0	.30∅	10∅	40†							.06u	P-ME	Ge	100J	N	TO18	
2157	2N710	300∅	300	15	50	2.0	.25	3.0	.30∅	10∅	40†							.06u	P-ME	Ge	100J		TO18	
2158▼	2N2319	300	300\$	30	200	5.0	.59	1.0	.40∅	20	40†						5.0		N	Si			TO46	
2159	NS381	300	300	25	100	5.0	.50	.10	.40	3.0	30†						6.0		N-E	Si	175		TO18	
2160	NS382	300	300	25	100	5.0	.50	.10	.40	3.0	80†						6.0		N-E	Si	175		TO18	
2161	NS383	300	300	20	100	5.0	.50	.10	.40	3.0	30†						6.0		N-E	Si	175		TO18	
2162	NS384	300	300	20	100	5.0	.50	.10	.40	3.0	80†						6.0		N-E	Si	175		TO18	
2163▼#	2S131	300	350	15	200	5.0	.50	1.0∅	1.0∅	10∅	25†						3.5		N-E	Si	175A		TO18	
2164	2N706B	300	400\$	25	200	5.0	.50	10	1.0∅	10∅	40†						4.5	.18	NME†	Si	175J		TO18	
2165	2N707	300	400	56	200	3.0	.50	5.0	1.0∅	10∅	12†						5.0	.08	NMEA	Si	175J	T	TO18	
2166♦	2N743	300	400\$	25	200	5.0	.50		.35∅	10∅	40†						5.0		N-E†	Si	300S		TO18	
2167♦	2N744	300	400\$	25	200	5.0	.50		.35∅	10∅	80†						5.0		N-E†	Si	300S		TO18	
2168	2N1385	300	400	25	100	2.0	.25	100	10∅	10∅	20†			10			1.8		P-ME	Ge	100J		TO 5	
2169	2N1585	300	400	25	100	2.0	.25	100	10∅	10∅	20†			10			1.8		N-ME	Ge	100J		TO18	
2170	2N835	300	450\$	25	200	3.0	.50	.50	1.0∅	10	40†						2.8		N-ME	Si	175		TO18	
2171	2N707A	300	500\$	70	200	5.0	.50	5.0	1.0∅	10	30†						4.0	80	N-ME	Si	175		TO18	
2172	2N834	300	500\$	40	200	5.0	.50	.50	1.0∅	10∅	40†						2.8		NMEA	Si	175J		TO18	
2173	2N706	300	750	25	200	3.0	.50	.50	1.0∅	10∅	45†						5.0		NME†	Si	175J	A	TO18	
2174	2N706A	300	750	25	200	5.0	.50		1.0∅	10	40						3.5		NME†	Si	175J		TO18	
2175	2N753	300	750	25	200	5.0	.50		1.0∅	10	80						3.5		NME†	Si	175J		TO18	
2176	2N709	300	800\$	15	200	3.0	.50	.10∅	.50	10∅	70†						3.0		NPL†	Si	200J		TO18	
2177	2N672	300		25	2A	25	.20	75									.35u		P-A†	Ge	85J	T	RO 2	
2178	2N783	300		40	200	5.0	.50	.25∅	1.0∅	10∅	40						16∅		N-E	Si	175		TO18	
2179	2N784	300		30	200	5.0	.50	.25∅	1.0∅	10∅	25						20∅		N-E	Si	175		TO18	
2180▼	2N2238	300		30	50	1.0	.33	100	10	10	24			10			3.0		P	Ge	100	TR	TO 5	
2181#	2SC74	300		30	100	5.0		10∅	6.0∅	2.0	50						3.5	.60	N-ME	Si	150J		TO 9	
2182	B1022	300		15	300	15	.40	25	5.0	10	20			2000					P	Ge	85		TO 5	
2183	NS345	300		35∅	50	7.0		.20∅	1.0∅	10∅	140						5.0∅		NMEA	Si	175A	T	TO18	
2184	OC430K	300		10∅	50		.42		5.0∅	1.0	15	e	900	50	10		40		P-A	Si	150J		RO43	
2185	OC440K	300		30∅	50		.42		5.0∅	1.0	15	e	900	30	10		40		P-A	Si	150J		RO43	
2186	OC445K	300		50∅	50		.42		5.0∅	1.0	15	e	900	30	10		40		P-A	Si	150J		RO43	
2187	OC450K	300		75∅	50		.42		5.0∅	1.0	20	e	1100	25	6.0		40		P-A	Si	150J		RO43	
2188	OC460K	300		10∅	50		.42		5.0∅	1.0	30	e	1400	70	7.0		40		P-A	Si	150J		RO43	
2189	OC465K	300		20∅	50		.42		5.0∅	1.0	30	e	1400	70	7.0		40		P-A	Si	150J		RO43	
2190	OC466K	300		10∅	50		.42		5.0∅	1.0	30	e	1400	70	7.0		40		P-A	Si	150J		RO43	
2191	OC468K	300		10∅	50		.42		5.0∅	1.0	60	e	2300	85	10		40		P-A	Si	150J		RO43	
2192	OC469K	300		32	50		.42		.35∅	20∅	10†Δ								P-A†	Si	150J		RO43	

# 1. JUNCTION TRANSISTORS

IN ORDER OF MAXIMUM COLLECTOR DISSIPATION,  $f_{\alpha b}$ , AND TYPE NO.



LINE No.	TYPE No.	Max. COLL. DISS. in Free Air (mw)	$f_{\alpha b}$ (Mc.)	ABSOLUTE MAX. RATINGS @ 25°C					TYPICAL PARAMETERS @ 25°C										DESCRIPTION					
				$V_{cb}$ (volt)	$I_c$ (ma)	$V_{eb}$ (volt)	De-rate Free Air $^{\circ}C/mw$	Max. $I_{cbo}$ @ Max. $V_{cb}$ ( $\mu a$ )	BIAS		$h_{fe}$ or $h_{FE} - \dagger$	CIRCUIT			Max. NF (db)	Gain (db)	$C_{ob}$ (pf)	$r_{bb} \times C_{ob}$ (nsec)	$t_r$ (sec)	Type P - NPN N - NPN	Mat.	Max. Temp. (°C)	STATUS	Dwg. No.
									$V_{cb}$ (volt)	$I_e$ (ma)		$h_i$ (ohm)	$h_o$ ( $\mu mho$ )	$h_r$ ( $\times 10^{-4}$ )										
2193	OC470K	300		30 $\emptyset$	50		.42		5.0 $\emptyset$	1.0	30	e 1400	40	7.0			40			P-A	Si	150J		RO43
2194	OC480K	300		125 $\emptyset$	50		.42		5.0 $\emptyset$	1.0	15	e 1100	25	6.0			40			P-A	Si	150J		RO43
2195	OC703	330*	.50	80	50	30	.32	.10 $\emptyset$	6.0	1.0 $\emptyset$	15					20	5.0		P	Si	150J	T	RO42	
2196	OC701	330*	1.00	80	50	30	.32	.10 $\emptyset$	6.0	1.0 $\emptyset$	35					20	5.0		P	Si	150J	T	RO42	
2197	OC700	330*	1.70	25	50	25	.32	.10 $\emptyset$	6.0	1.0 $\emptyset$	25					20	5.0		P	Si	150J	T	RO42	
2198	OC702	330*	2.20	25	50	25	.32	.10 $\emptyset$	6.0	1.0 $\emptyset$	60					20	5.0		P	Si	150J	T	RO42	
2199	OC704	330*	5.00	3.0	50	3.0	.32	.10 $\emptyset$	2.0 $\emptyset$	1.0 $\emptyset$	70					20	5.0		P	Si	150J	T	RO42	
2200	2N978	330	50.0	30		5.0		5.0	10 $\emptyset$	150 $\emptyset$	38 $\dagger$					45			N-D	Si	150J	T	TO18	
2201	2N328	337	.35	30 $\emptyset$	50	20	.40	5m $\emptyset$	6.0	1.0	24					34	30		P-F	Si	160J			
2202#	2SB67	350	1.00	55	150	12	.13		6.0 $\emptyset$	1.0	75	1360	21	2.1	10		27		P-A	Ge	70J			
2203#	SFT124	350	1.00	24	500	12	.17	20	1.0 $\emptyset$	250 $\emptyset$	30 $\dagger$								P-A	Ge	85J		RO13	
2204#	SFT143	350	1.00	45	500	25	.17	20	1.0 $\emptyset$	250 $\emptyset$	30 $\dagger$								P-A	Ge	85J		RO13	
2205#	SFT144	350	1.80	45	500	25	.17	20	1.0 $\emptyset$	250 $\emptyset$	60 $\dagger$								P-A	Ge	85J		RO13	
2206#	SFT125	350	2.00	24	500	12	.17	20	1.0 $\emptyset$	250 $\emptyset$	70 $\dagger$								P-A	Ge	85J		RO13	
2207#	SFT125P	350	2.00	30	500	15	.17	25	1.0 $\emptyset$	250 $\emptyset$	70 $\dagger$								P-A	Ge	85J		RO13	
2208	2N1197	350	55.0	70	15	4.0	.50	.25 $\emptyset$	10	2.0	10	b 20	.30	.60	10	22	3.0		P-ME	Si	200A	A	TO 5	
2209#	ZT20	350	70.0 $\S$	20	50	6.0			6.0	10	35						5.0		N-ME	Si	150		TO 5	
2210#	ZT21	350	70.0 $\S$	20	50	6.0			6.0	10	60						5.0		N-ME	Si	150		TO 5	
2211#	ZT22	350	70.0 $\S$	45	50	6.0			6.0	10	30								N-ME	Si	150		TO 5	
2212#	ZT23	350	70.0 $\S$	45	50	6.0			6.0	10	60								N-ME	Si	150		TO 5	
2213	2N1992	350	380	25	50	6.0	.50	.50	.50	1.0	30						5.0		N-E	Si	200	RT	TO18	
2214	2N249	350		25	200			25	1.0	100	50								P	Ge	85			
2215	2N869	360	150 $\S$	25		5.0	.49	.01 $\emptyset$	5.0 $\emptyset$	10 $\emptyset$	50						9.0	.08u	P-PL	Si	200J	T	TO18	
2216#	2N995	360	200	20		4.0	.49	.005	1.0 $\emptyset$	20 $\emptyset$	55 $\dagger$						10 $\emptyset$	.04u	PPLE	Si	200J	T	TO18	
2217#	2N2242	360	300 $\S$	40		5.0	.50	1.0	1.0 $\emptyset$	10	80 $\dagger$						6.0	30	N	Si			TO18	
2218#	2N2318	360	300 $\S$	30		5.0	.50	1.0	.40 $\emptyset$	20	40 $\dagger$						5.0	60	N	Si			TO18	
2219#	ZT708	360	300 $\S$	40		5.0			1.0	10	120						6.0		N-ME	Si	200	D	TO18	
2220	2N913	360	350	25		5.0		.05	1.0 $\emptyset$	10 $\emptyset$	75 $\dagger$						6.0	.03u	NPLE	Si	200J	T	TO18	
2221	2N914	360	400 $\S$	40		5.0	.49	.025 $\emptyset$	1.0 $\emptyset$	10 $\emptyset$	30 $\Delta$ $\dagger$						6.0	.02u	NPLE	Si	200J	T	TO18	
2222	2N915	360	400 $\S$	70		5.0	.49	.01 $\emptyset$	5.0 $\emptyset$	10 $\emptyset$	40 $\Delta$ $\dagger$						3.5	.02u	N-PL	Si	200J	T	TO18	
2223	2N708	360	500	40		5.0	.49	.025	1.0 $\emptyset$	10 $\emptyset$	50 $\dagger$						6.0 $\emptyset$	.04u	NPL $\dagger$	Si	200J	T	TO18	
2224	2N916	360	500 $\S$	45		5.0	.49	.01 $\emptyset$	1.0 $\emptyset$	10 $\emptyset$	50 $\Delta$ $\dagger$						6.0	.02u	N-PL	Si	200J	T	TO18	
2225#	BFY10	375	50 $\S$ $\Delta$	45																N-D	Si			
2226	2N935	385	.20	50	50	20	.35	.10	.50 $\emptyset$	3.0 $\emptyset$	14						65		P-A	Si	160	T	TO18	
2227	2N936	385	.30	50	50	20	.35	.10	.50 $\emptyset$	3.0 $\emptyset$	25						65		P-A	Si	160	M	TO18	
2228	2N937	385	.40	50	50	20	.35	.10	.50 $\emptyset$	3.0 $\emptyset$	50						65		P-A	Si	160	M	TO18	
2229	2N330A	385	.50	30 $\emptyset$	50	20	.35	.10	.50	.10 $\Delta$	25	e 1700	40		15		70		P	Si	160		TO 9	
2230	2N1234	400	.80	110		110	.34	.10	5.0	1.0	20	b 30	1.2	4.0			95		P-F	Si	160J	A	TO 5	
2231#	HA7540	400	.80	150		150	.34	.10	5.0	1.0	20	b 30	1.2	4.0			95		P-A	Si	160J		TO 5	
2232#	HA7541	400	.80	90		90	.34	.10	5.0	1.0	45	b 30	1.2	4.0			95		P-A	Si	160J		TO 5	
2233#	HA7542	400	.80	110		110	.34	.10	5.0	1.0	45	b 30	1.2	4.0			95		P-A	Si	160J		TO 5	
2234#	HA7543	400	.80	60		60	.34	.10	5.0	1.0	65	b 30	1.2	4.0			95		P-A	Si	160J		TO 5	
2235	2N1232	400	1.00	60		60	.34	.10	5.0	1.0	20	b 30	1.2	4.0			95		P-F	Si	160J		TO 5	
2236	2N1233	400	1.00	60		60	.34	.10	5.0	1.0	42	b 30	1.2	4.0			95		P-F	Si	160J		TO 5	
2237	2N1439	400	1.00 $\Delta$	50	100	50	.44	.025	6.0	1.0	9.0	e 1000	35				5.0		P-A	Si	200A	T	TO 5	

# 1. JUNCTION TRANSISTORS

IN ORDER OF MAXIMUM COLLECTOR DISSIPATION,  $f_{\alpha b}$ , AND TYPE NO.



LINE No.	TYPE No.	Max. COLL. DISS. in Free Air (mw)	$f_{\alpha b}$ (Mc.)	ABSOLUTE MAX. RATINGS @ 25°C					TYPICAL PARAMETERS @ 25°C										DESCRIPTION					
				BV <sub>cb</sub> (volt)	I <sub>c</sub> (ma)	BV <sub>eb</sub> (volt)	De-rate Free Air PC/mw	Max. I <sub>cb0</sub> @ Max. V <sub>cb</sub> (μa)	BIAS		h <sub>fe</sub> or hFE - †	CIRCUIT			Max. NF (db)	Gain (db)	C <sub>ob</sub> (pf)	r <sub>bb</sub> × C <sub>ob</sub> (nsec)	t <sub>r</sub> (sec)	Type P - NPN N - NPN	Mat.	Max. Temp. (°C)	STATUS	Dwg. No.
									V <sub>cb</sub> (volt)	I <sub>e</sub> (ma)		h <sub>i</sub> (ohm)	h <sub>o</sub> (μmho)	h <sub>r</sub> (×10 <sup>-4</sup> )										
2238	2N1440	400	1.00Δ	50	100	50	.44	.025	6.0∅	1.0∅	18	e	1000	35					P-A	Si	200A	T	TO 5	
2239	2N1441	400	1.00Δ	50	100	50	.44	.025	6.0∅	1.0∅	30	e	1000	35					P-A	Si	200A	T	TO 5	
2240	2N1442	400	1.00Δ	50	100	50	.44	.025	6.0∅	1.0∅	45	e	1000	35					P-A	Si	200A	T	TO 5	
2241	2N1443	400	1.00	50	100	50	.44	.025	6.0	1.0∅	65	e	1000	35	10				P-A	Si	200A	T	TO 5	
2242	2N2174	400	1.00	45			.44		5.0	10	22†Δ								P-A	Si				
2243	HA7630	400	1.00	40		20		5.0	10	5.0	22		10	1.5	4.0				P-A	Si	125		TO 5	
2244	HA7631	400	1.00	80		40		2.0	10	5.0	22		10	1.5	4.0				P-A	Si	125		TO 5	
2245	HA7632	400	1.00	40		20		5.0	10	5.0	60		10	1.5	4.0				P-A	Si	125		TO 5	
2246	HA7633	400	1.00	80		40		2.0	10	5.0	60		10	1.5	4.0				P-A	Si	125		TO 5	
2247	2N1228	400	1.20	15		15	.34	.10	5.0	1.0	20	b	30	1.2	15				P-F	Si	160J		TO 5	
2248	2N1229	400	1.20	15		15	.34	.10	5.0	1.0	42	b	30	1.2	15				P-F	Si	160J		TO 5	
2249	2N1230	400	1.20	35		35	.34	.10	5.0	1.0	20	b	30	1.2	8.0				P-F	Si	160J		TO 5	
2250	2N1231	400	1.20	35		35	.34	.10	5.0	1.0	42	b	30	1.2	8.0				P-F	Si	160J		TO 5	
2251#	44T1	400	1.20	45	300	5.0		16	1.0∅	150∅	54					30	35		P	Ge	85J		MS 4	
2252	HA7530	400	1.20	35	100	35	.34	.10	5.0	1.0	12			1.2	10				P	Si	160J		TO 5	
2253	HA7531	400	1.20	60	100	60	.34	.10	5.0	1.0	12			1.2	10				P	Si	160J		TO 5	
2254	B1154	400∅	1.50	60			150			10∅	60†								P-A	Ge				
2255▼	NS731	400	60.0	15	100	4.0	.44	1.0	5.0	1.0	12Δ						8.0		N-ME	Si			TO18	
2256▼	NS732	400	60.0	15	100	4.0	.44	1.0	5.0	1.0	40Δ						8.0		N-ME	Si			TO18	
2257▼	NS733	400	60.0	30	100	4.0	.44	1.0	5.0	1.0	12Δ						8.0		N-ME	Si			TO18	
2258▼	NS734	400	60.0	30	100	4.0	.44	1.0	5.0	1.0	40Δ						8.0		N-ME	Si			TO18	
2259♦	NS475	400	80.0	30	50	6.0	.44	.20	5.0	1.0	20Δ	b	80	1.0	10				N-ME	Si	200		TO46	
2260♦	NS476	400	80.0	30	50	6.0	.44	.20	5.0	1.0	40Δ	b	80	1.0	10				N-ME	Si	200		TO46	
2261♦	NS477	400	80.0	30	50	6.0	.44	.20	5.0	1.0	80Δ	b	80	1.0	10				N-ME	Si	200		TO46	
2262♦	NS478	400	80.0	60	50	8.0	.44	.20	5.0	1.0	20Δ	b	80	1.0	10				N-ME	Si	200		TO46	
2263♦	NS479	400	80.0	60	50	8.0	.44	.20	5.0	1.0	40Δ	b	80	1.0	10				N-ME	Si	200		TO46	
2264♦	NS480	400	80.0	60	50	8.0	.44	.20	5.0	1.0	80Δ	b	80	1.0	10				N-ME	Si	200		TO46	
2265	2N721	400	100	50		5.0	.38	1.0	10∅	150∅	25†						.08u		PMEΔ	Si	175J	T	TO18	
2266	2N722	400	100	50		5.0	.38	1.0	10∅	150∅	40†						.08u		PMEΔ	Si	175J	T	TO18	
2267	HA9532B	400	100	70		6.0	.38	.01	10∅	150∅	40†	b	30	1.0	8.0			.08u	P-PL	Si	175J		TO18	
2268▼#	2S102	400	120§	60	50	4.5	.375	.25∅	5.0	10	40	e	450	25	.90			5.0		N-ME	Si	175A		TO18
2269▼#	2S103	400	135§	60	50	4.5	.375	.25∅	5.0	10	65	e	660	65	1.1			5.0		N-ME	Si	175A		TO18
2270	2N717	400	150	60		5.0	.38	1.0	10∅	150∅	40†						.08u		NMEΔ	Si	175J	T	TO18	
2271	2N718	400	150	60		5.0	.38	1.0	10∅	150∅	75†						.08u		NMEΔ	Si	175J	T	TO18	
2272▼#	2S104	400	150§	60	50	4.5	.375	.25∅	5.0	10	90	e	1000		1.3			5.0		N-ME	Si	175A		TO18
2273	RT409E	400	150	60		5.0	.33	.50	10	150	40†							15		N-ME	Si	175J	T	u 3
2274	RT497M	400	150	60		8.0	.35	2.0	10∅	200	20							14		N-ME	Si	200J	T	u 3
2275	RT498M	400	150	100		8.0	.35	5.0	10∅	200	20							14		N-ME	Si	200J	T	u 3
2276	RT656M	400	150	60		8.0	.35	2.0	10∅	200	60							14		N-ME	Si	200J	T	u 3
2277	RT657M	400	150	100		8.0	.35	5.0	10∅	200	60							14		N-ME	Si	200J	T	u 3
2278	RT696AM	400	150	60		5.0	.22	1.0	10	5.0	45	b	5.4	.50	1.0			20		N-MEΔ	Si	175	T	u 3
2279	RT696M	400	150	60		5.0	.25	1.0	10	5.0	45	b	5.4	.50	1.0			20		N-MEΔ	Si	175	T	u 3
2280	RT697AM	400	150	60		5.0	.22	1.0	10	5.0	70	b	5.4	.50	1.0			20		N-MEΔ	Si	175	T	u 3
2281	2N909	400	160§	60		5.0	.38	1.0∅	5.0∅	1.0∅	55							35		N-D	Si	175J	T	TO18
2282	2N719	400	180	120		5.0	.38	2.0	10∅	150∅	30†							14		N-MEΔ	Si	175J	T	TO18

# 1. JUNCTION TRANSISTORS

IN ORDER OF MAXIMUM COLLECTOR DISSIPATION,  $f_{\alpha b}$ , AND TYPE NO.



LINE No.	TYPE No.	Max. COLL. DISS. in Free Air (mw)	$f_{\alpha b}$ (Mc.)	ABSOLUTE MAX. RATINGS @ 25°C					TYPICAL PARAMETERS @ 25°C										DESCRIPTION					
				$V_{cb}$ (volt)	$I_c$ (ma)	$V_{eb}$ (volt)	De-rate Free Air $^{\circ}C/mw$	Max. $I_{cbo}$ @ Max. $V_{cb}$ ( $\mu a$ )	BIAS		$h_{fe}$ or $h_{FE} - \dagger$	CIRCUIT			Max. NF (db)	Gain (db)	$C_{ob}$ (pf)	$r_{bb} \times C_{ob}$ (nsec)	$t_r$ (sec)	Type	Mat.	Max. Temp. ( $^{\circ}C$ )	STATUS	Dwg. No.
									$V_{cb}$ (volt)	$I_e$ (ma)		$h_i$ (ohm)	$h_o$ ( $\mu mho$ )	$h_r$ ( $\times 10^{-4}$ )										
2283	2N720	400	180	120		5.0	.38	2.0	10 $\emptyset$	150 $\emptyset$	65 $\dagger$					14		80n	N-ME $\Delta$ Si	175J	T	TO18		
2284	RT698M	400	180	120		5.0	.25	2.0							14			N-ME $\Delta$ Si	175	T	u 3			
2285	RT699AM	400	180	120		8.0	.22	.01	10	5.0	70	b	5.4	.50	1.0	15			N-ME $\Delta$ Si	175	T	u 3		
2286	RT699M	400	180	120		5.0	.25	2.0							14			N-ME $\Delta$ Si	175	T	u 3			
2287 $\blacktriangledown$	2N1204A	400 $\emptyset$	200 $\S$	20	500	4.0	.38	7.0 $\emptyset$	.50 $\emptyset$	200 $\emptyset$	45 $\dagger$					5.0		15n	PMD $\Delta$ Ge	100S	T	TO 9		
2288	RT1420M	400	250	60		5.0	.25	1.0	10	5.0	170	b	5.2	.50	1.0				N-ME $\Delta$ Si	175	T	u 3		
2289 $\blacktriangledown$	2N1494A	400 $\emptyset$	400 $\S$	20	500	4.0	.19	7.0 $\emptyset$	.50 $\emptyset$	200 $\emptyset$	45 $\dagger$					5.0		15n	PMD $\Delta$ Ge	100S	T	TO31		
2290	2N1962	400		40	200	5.0	.38	.25 $\emptyset$	1.0 $\emptyset$	10 $\emptyset$	40					3.0		16 $\emptyset$	N-E Si	175		u 1		
2291	2N1963	400		30	200	5.0	.38	.25 $\emptyset$	1.0 $\emptyset$	10 $\emptyset$	25					3.5		20 $\emptyset$	N-E Si	175		u 1		
2292	2N1964	400		60	500	5.0	.38	.50 $\emptyset$	10 $\emptyset$	150 $\emptyset$	40					18		65 $\emptyset$	N-E Si	175		u 1		
2293	2N1965	400		60	500	5.0	.38	.50 $\emptyset$	10 $\emptyset$	150 $\emptyset$	80					18		65 $\emptyset$	N-E Si	175		u 1		
2294#	AC105	400		40	1A $\dagger$	12	.08		6.0	3.0									P-A Ge	75J				
2295#	AC106	400		40	1A $\dagger$	10	.08		6.0	3.0									P-A Ge	75J				
2296#	AC117	400		30	1A $\dagger$	10	.075	30	6.0	50	85 $\dagger$								P-A Ge	75J				
2297#	AC124	400		45	1A $\dagger$	10	.075	30	6.0	50	85 $\dagger$								P-A Ge	75J				
2298#	ACZ10	400		70	300 $\dagger$	30	.08		1.0	30									P-A Ge	75J				
2299 $\blacklozenge$ #	SFT232	450	.30	40	1000	20	.13	750	.50 $\emptyset$	1000 $\emptyset$	40 $\dagger$								P-A Ge	85J		TO11		
2300 $\blacklozenge$ #	SFT233	450	.30	60	1000	20	.13	750	.50 $\emptyset$	1000 $\emptyset$	40 $\dagger$								P-A Ge	85J		TO11		
2301 $\blacklozenge$ #	SFT234	450	.30	80	1000	20	.13	750	.50 $\emptyset$	1000 $\emptyset$	40 $\dagger$								P-A Ge	85J		TO11		
2302 $\blacklozenge$ #	SFT235	450	.30	100	1000	20	.13	750	.50 $\emptyset$	1000 $\emptyset$	40 $\dagger$								P-A Ge	85J		TO11		
2303	2N494	450	.65*				.25												UNI Si	150A	F	TO 5		
2304	2N490	450	.70*				.25												UNI Si	150A	F	TO 5		
2305	2N492	450	.70*				.25												UNI Si	150A	F	TO 5		
2306	2N493	450	.70*				.25												UNI Si	150A	F	TO 5		
2307	2N491	450	.80*				.25												UNI Si	150A	F	TO 5		
2308	2N489	450	.90*				.25												UNI Si	150A	F	TO 5		
2309#	2SB155	450	.90	16	300	2.5	.13		4.0	1.0	28		760	10	1.6	10		27	P Ge	85				
2310#	2SB156	450	1.30	16	300	2.5	.15		1.0	150	60								P Ge	85				
2311	RT7007E	450	150	60		5.0	.33	.50	10	150	40 $\dagger$								N-ME Si	175J	T	TO18		
2312	2N849	450		25		5.0	.33	10	1.0 $\emptyset$	10 $\emptyset$	40 $\dagger$					3.5			N-ME $\Delta$ Si	175J		u 4		
2313	2N850	450		25		5.0	.33	10	1.0 $\emptyset$	10 $\emptyset$	80 $\dagger$					3.5			N-ME $\Delta$ Si	175J		u 4		
2314	2N1671	450					3.9												UNI Si	150S		RO33		
2315	2N1671A	450					3.9												UNI Si	150S		RO33		
2316	2N1671B	450					3.9												UNI Si	150S		RO33		
2317#	BCY13	450 $\nabla$		60 $\emptyset$	200		.20		1.0 $\emptyset$	100 $\emptyset$	15 $\dagger$								N-A Si	150J		RO23		
2318#	BCY14	450 $\nabla$		100 $\emptyset$	200		.20		1.0 $\emptyset$	100 $\emptyset$	15 $\dagger$								N-A Si	150J		RO23		
2319#	BCY15	450 $\nabla$		60 $\emptyset$	300		.20		1.0 $\emptyset$	100 $\emptyset$	15 $\dagger$								N-A Si	150J		RO23		
2320#	BCY16	450 $\nabla$		100	300		.20		1.0 $\emptyset$	100 $\emptyset$	15 $\dagger$								N-A Si	150J		RO23		
2321#	2SB105	500	.50	30	500	10	.10	100	2.0 $\emptyset$	200 $\emptyset$	70 $\dagger$								P-A Ge	75J		RO20		
2322#	2SB108	500	.50	40	500	10	.10	100	2.0 $\emptyset$	200 $\emptyset$	70 $\dagger$								P-A Ge	75J		RO20		
2323#	2SB108A	500	.50	60	500	10	.10	100	2.0 $\emptyset$	200 $\emptyset$	70 $\dagger$								P-A Ge	75J		RO20		
2324#	2SB108B	500	.50	80	500	10	.10	100	2.0 $\emptyset$	200 $\emptyset$	70 $\dagger$								P-A Ge	75J		RO20		
2325#	2SB201	500	.50	32	.40	12	.10		1.0	.15 $\emptyset$	150 $\dagger$								P-A Ge	75J		TO 9		
2326	2N1095	500	3.00	60					30 $\emptyset$	20	36							1.0u	N-G Si					
2327	2N1096	500	3.00	90					45 $\emptyset$	15	35								N-G Si					



# 1. JUNCTION TRANSISTORS

IN ORDER OF MAXIMUM COLLECTOR DISSIPATION,  $f_{\alpha b}$ , AND TYPE NO.



LINE No.	TYPE No.	Max. COLL. DISS. in Free Air (mw)	$f_{\alpha b}$ (Mc.)	ABSOLUTE MAX. RATINGS @ 25°C					TYPICAL PARAMETERS @ 25°C										DESCRIPTION						
				BV <sub>cb</sub> (volt)	I <sub>c</sub> (ma)	BV <sub>eb</sub> (volt)	De-rate Free Air C/mw	Max. I <sub>cbo</sub> @ Max. V <sub>cb</sub> (μa)	BIAS		h <sub>fe</sub> or hFE - †	CIRCUIT			Max. NF (db)	Gain (db)	C <sub>ob</sub> (pf)	r <sub>bb</sub> × C <sub>ob</sub> (nsec)	t <sub>r</sub> (sec)	Type P - PNP N - NPN	Mat.	Max. Temp. (°C)	S T A T U S	Dwg. No.	
									V <sub>cb</sub> (volt)	I <sub>e</sub> (ma)		h <sub>i</sub> (ohm)	h <sub>o</sub> (μmho)	h <sub>r</sub> (×10 <sup>-4</sup> )											
2328▼	2N1704	500	5.00	45	50	6.0	.30	.10	5.0	1.0	50†Δ	b	55	1.2	30	11	15			N	Si	175		TO 5	
2329	2N332A	500	10.0	45	25	4.0	.30	20	5.0	1.0	16	b	40	.25	1.2	30	11	7.0		N-GΔ	Si	175J		TO 5	
2330	2N333A	500	11.0	45	25	4.0	.30	20	5.0	1.0	30	b	40	.20	1.2	30	11	7.0		N-GΔ	Si	175J		TO 5	
2331	2N334A	500	12.0	45	25	4.0	.30	20	5.0	1.0	38	b	40	.18	1.2	30	12	7.0		N-GΔ	Si	175J		TO 5	
2332	2N335A	500	13.0	45	25	4.0	.30	20	5.0	1.0	52	b	40	.15	1.2	30	12	7.0		N-GΔ	Si	175J		TO 5	
2333	2N335B	500	13.0	60	25	4.0		500			45†	b	2000	7.0	1.2	11	12	7.0		N	Si	200S			
2334	2N336A	500	15.0	45	25	4.0	.30	20	5.0	1.0	95	b	40	.13	1.2	30	12	7.0		N-GΔ	Si	175J		TO 5	
2335	2N730	500	20.0	60		5.0	.10	1.0	10∅	150∅	40†							110n		NME†	Si	175J		TO18	
2336	2N731	500	20.0	60		5.0	.10	1.0	10∅	150∅	80†							140n		NME†	Si	175J		TO18	
2337#	25T2	500	20.0	30	100	1.0		5.0	10	5.0	50	b	8.0	1.5	3.0					N	Si				
2338#	26T2	500	20.0	60	100	1.0		5.0	10	5.0	50	b	8.0	1.5	3.0					N	Si				
2339#	28T2	500	20.0	30	100	1.0		5.0	10	5.0	14	b	8.0	1.5	3.0					N	Si				
2340#	29T2	500	20.0	60	100	1.0		5.0	10	5.0	14	b	8.0	1.5	3.0					N	Si				
2341	2N337A	500	30.0§	45	20	2.5	3.3	.10∅	45Δ		35		2500	13	2.5			2.0	.02u	N-G	Si	200S		TO 5	
2342	2N912	500	40.0§	100		7.0	.35	.025∅	5.0∅	1.0∅	30							15	.08u	N-PL	Si	200J	T	TO18	
2343	2N338A	500	45.0§	45	20	2.5	3.3	.10∅	45Δ		75		3000	15	2.6			2.0	.06u	N-G	Si	200S		TO 5	
2344	2N756	500	50.0Δ	45	100	6.0	.35		5.0∅	1.0	18	b	30	.30	2.0			4.0		N-ME	Si	200A	T	TO18	
2345	2N757	500	50.0Δ	45	100	6.0	.35		5.0∅	1.0	30	b	30	.30	2.0			4.0		N-ME	Si	200A	T	TO18	
2346	2N758	500	50.0Δ	45	100	8.0	.35		5.0∅	1.0	50	b	30	.30	2.0			4.0		N-ME	Si	200A	T	TO18	
2347	2N759	500	50.0Δ	45	100	8.0	.35		5.0∅	1.0	65	b	30	.30	2.0			4.0		N-ME	Si	200A	T	TO18	
2348	2N760	500	50.0Δ	45	100	8.0	.35		5.0∅	1.0	150	b	30	.30	2.0			4.0		N-ME	Si	200A	T	TO18	
2349	2N761	500	50.0Δ	45	100	6.0	.35		5.0∅	10∅	35†	b	30	.30	2.0			4.0		N-ME	Si	200A	T	TO18	
2350	2N762	500	50.0Δ	45	100	6.0	.35		5.0∅	10∅	70†	b	30	.30	2.0			4.0		N-ME	Si	200A	T	TO18	
2351	2N911	500	50.0§	100		7.0	.35	.025∅	5.0∅	1.0∅	50							15	.08u	N-PL	Si	200J	T	TO18	
2352	2N910	500	60.0§	100		7.0	.35	.025∅	5.0∅	1.0∅	100							15	.08u	N-PL	Si	200J	T	TO18	
2354▼	2N2244	500	60.0	20	100	6.0	.35	.01	4.0	.002	5.0†Δ			50				8.0		N-ME	Si	200		TO18	
2355▼	2N2245	500	60.0	20	100	6.0	.35	.01	4.0	.002	10†Δ			50				8.0		N-ME	Si	200		TO18	
2356▼	2N2246	500	60.0	20	100	6.0	.35	.01	4.0	.002	20†Δ			50				8.0		N-ME	Si	200		TO18	
2357▼	2N2247	500	60.0	45	100	6.0	.35	.01	4.0	.002	5.0†Δ			50				8.0		N-ME	Si	200		TO18	
2358▼	2N2248	500	60.0	45	100	6.0	.35	.01	4.0	.002	10†Δ			50				8.0		N-ME	Si	200		TO18	
2359▼	2N2249	500	60.0	45	100	6.0	.35	.01	4.0	.002	20†Δ			50				8.0		N-ME	Si	200		TO18	
2360▼	2N2250	500	60.0	20	100	6.0	.35	.01	4.0	.002	5.0†Δ			25			4.0		8.0		N-ME	Si	200		TO18
2361▼	2N2251	500	60.0	20	100	6.0	.35	.01	4.0	.002	10†Δ			30			4.0		8.0		N-ME	Si	200		TO18
2362▼	2N2252	500	60.0	20	100	6.0	.35	.01	4.0	.002	20†Δ			50			4.0		8.0		N-ME	Si	200		TO18
2363▼	2N2253	500	60.0	45	100	6.0	.35	.01	4.0	.002	5.0†Δ			25			4.0		8.0		N-ME	Si	200		TO18
2364▼	2N2254	500	60.0	45	100	6.0	.35	.01	4.0	.002	10†Δ			30			4.0		8.0		N-ME	Si	200		TO18
2365▼	2N2255	500	60.0	45	100	6.0	.35	.01	4.0	.002	20†Δ			50			4.0		8.0		N-ME	Si	200		TO18
2366	2N981	500	80.0	80			.35		5.0	1.0	36									P-D	Si				
2367	NS430	500	80.0	10			.35		4.0	2.0	5.0†Δ							8.0∅		N-D	Si			TO18	
2368	NS431	500	80.0	10			.35		4.0	2.0	7.0†Δ							8.0∅		N-D	Si			TO18	
2369	NS432	500	80.0	10			.35		4.0	2.0	15†Δ							8.0∅		N-D	Si			TO18	
2370	NS433	500	80.0	20			.35		4.0	2.0	5.0†Δ							8.0∅		N-D	Si			TO18	
2371	NS434	500	80.0	20			.35		4.0	2.0	7.0†Δ							8.0∅		N-D	Si			TO18	
2372	NS435	500	80.0	20			.35		4.0	2.0	15†Δ							8.0∅		N-D	Si			TO18	
2373	NS436	500	80.0	45			.35		4.0	2.0	5.0†Δ							8.0∅		N-D	Si			TO18	

# 1. JUNCTION TRANSISTORS

IN ORDER OF MAXIMUM COLLECTOR DISSIPATION,  $f_{\alpha b}$ , AND TYPE NO.



LINE No.	TYPE No.	Max. COLL. DISS. in Free Air (mw)	$f_{\alpha b}$ (Mc.)	ABSOLUTE MAX. RATINGS @ 25°C					TYPICAL PARAMETERS @ 25°C										DESCRIPTION					
				BV <sub>cb</sub> (volt)	I <sub>c</sub> (ma)	BV <sub>eb</sub> (volt)	De-rate Free Air C/mw	Max. I <sub>cb0</sub> @ Max. V <sub>cb</sub> (μa)	BIAS		h <sub>fe</sub> or h <sub>FE</sub> - †	CIRCUIT			Max. NF (db)	Gain (db)	C <sub>ob</sub> (pf)	r <sub>bb</sub> × C <sub>ob</sub> (nsec)	t <sub>r</sub> (sec)	Type P - PNP N - NPN	Mat.	Max. Temp. (°C)	S T A T U S	Dwg. No.
									V <sub>cb</sub> (volt)	I <sub>e</sub> (ma)		h <sub>i</sub> (ohm)	h <sub>o</sub> (μmho)	h <sub>r</sub> (×10 <sup>-4</sup> )										
2374	NS437	500	80.0	45			.35		4.0	2.0	7.0†Δ						8.0		N-D	Si			TO18	
2375	NS438	500	80.0	45			.35		4.0	2.0	15†Δ						8.0		N-D	Si			TO18	
2376	2N719A	500	100	120		7.0	.35	.01	10∅	150∅	30†						15	.08u	NPLΔ	Si	200J	T	TO18	
2377	2N756A	500	100	60	100	6.0	.10∅		5.0	1.0	17	b	80∅	1.0∅	10∅		5.0		N-ME	Si	200J		TO18	
2378	2N757A	500	100	60	100	6.0	.10∅		5.0	1.0	29	b	80∅	1.0∅	10∅		5.0		N-ME	Si	200J		TO18	
2379	2N758A	500	100	60	100	8.0	.10∅		5.0	1.0	54	b	80∅	1.0∅	10∅		5.0		N-ME	Si	200J		TO18	
2380	2N759A	500	100	60	100	8.0	.10∅		5.0	1.0	63	b	80∅	1.0∅	10∅		5.0		N-ME	Si	200J		TO18	
2381	2N760A	500	100	60	100	8.0	.10∅		5.0	1.0	204	b	80∅	1.0∅	10∅		5.0		N-ME	Si	200J		TO18	
2382	2N1444	500	100	60∅	250	6.0	.25		.50∅	250∅	25†						32	180n	N-ME	Si	150J	R	TO29	
2383#	TK250A	500	100§	40															P-DA	Si				
2384#	TK251A	500	100§	40															P-DA	Si				
2385	2N720A	500	110	120		7.0	.35	.01	10∅	150∅	65†						15	.08u	NPLΔ	Si	200J	T	TO18	
2386	2N870	500	110	100		7.0	.35	.01	10∅	150∅	70†						15	.08u	NPLΔ	Si	200J	T	TO18	
2387	2N560	500	120	60∅	100	8.0	.25		5.0	10	50						6.0	40n	N-D	Si	150S	MR	TO29	
2388	2N1051	500	120	80∅	100	8.0	.25		5.0∅	5.0∅	40	b	5.8	.50	26		6.0	35n	N-D	Si	150S	R	TO29	
2389	2N734	500	125§	80	100	5.0	.25	1.0	5.0	5.0	20Δ	e	1200		.90		5.0		N-D	Si	175		TO18	
2390	2N738	500	125§	125	100	5.0	.30		5.0∅	5.0	35†						5.0		N-ME	Si			TO18	
2391	2N871	500	130	100		7.0	.35	.01	10∅	150∅	120†						15	.08u	NPLΔ	Si	200J	T	TO18	
2392#	2SC38	500	140§	40	80	3.0		1.0∅	10∅	10	50						4.0		N-ME	Si	150J		TO39	
2393	2N715	500	150§	50		5.0	.33	10	10∅	15∅	30†						3.0		N-ME	Si	175J		TO18	
2394	2N716	500	150§	70		5.0	.33	10	10∅	15∅	30†						3.0		N-ME	Si	175J	A	TO18	
2395	2N728	500	150	30		3.0		5.0	6.0∅	10∅	40†						8.0	1.2n	N-D†	Si	175		TO18	
2396	2N729	500	150	15		3.0		5.0	6.0∅	10∅	40†						8.0	1.2n	N-D†	Si	175		TO18	
2397	2N735	500	150§	80	100	5.0	.25	1.0	5.0	5.0	40Δ	e	1500	65	1.1		5.0		N-D	Si	175		TO18	
2398	2N739	500	150§	125	100	5.0	.30		5.0∅	5.0	70†						5.0		N-ME	Si			TO18	
2399†	2N1139	500	150	15		3.0		5.0	6.0∅	10∅	40†						8.0	1.2n	N-D†	Si	175		TO 5	
2400#	2SC26	500	150	60	100			1.0	10∅	10	50						4.0	.20	N-ME	Si	150J			
2401▼#	2SC27	500	150	60	100			1.0∅	10∅	10	50						4.0	.28	N-ME	Si	150J		TO 5	
2402	2N718A	500	160	75		7.0	.35	.01	10∅	150∅	70†						25	.08u	NPLΔ	Si	200J	T	TO18	
2403	2N736	500	175§	80	100	5.0	.25	1.0	5.0	5.0	80Δ	e	1800	95	1.3		5.0		N-D	Si	175		TO18	
2404	2N740	500	175§	125	100	5.0	.30		5.0∅	5.0	140†						5.0		N-ME	Si			TO18	
2405	2N736A	500	200§	80	100	8.0	.30	.50	5.0∅	5.0	125	e	1000	95	1.3		4.0		N-ME	Si	200A		TO18	
2406	2N752	500	200§	85	100	8.0	.58		10	100	40						5.0		N-ME	Si	200A	T	TO18	
2407	2N956	500	200§	75		7.0	.35	.01∅	10∅	150∅	100Δ†						25	.08u	N-PL	Si	200J	T	TO18	
2408#	2SC31	500	230	60	80	5.0	.25	1.0∅	10∅	10	35						4.0		N-ME	Si	150J	T	TO39	
2409	2N1491	500	250	30	50	1.0	.05	10	20	15	50						13	5.0	N	Si	175A			
2410#	2SC30	500	250	60	80	5.0	.25	1.0∅	10∅	10	45						19	4.0	N-ME	Si	150J		TO39	
2411	2N1492	500	275	60	50	2.0	.05	10	20	15	50						13	5.0	N	Si	175A			
2412#	2SC32	500	280	60	80	5.0	.25	1.0∅	10∅	10	65						4.0		N-ME	Si	150J	T	TO39	
2413	2N1493	500	300	100	50	1.5	.05	10	20	15	50						10	5.0	N	Si	175A			
2414	2N1494	500	320§	20∅	500	4.0	.19		1.5∅	400∅	35†						5.0	15n	P-MD	Ge			TO31	
2415	2N1496	500	320§	40	500	4.0	.30		1.0∅	200∅	60†						10		P-MD	Ge			TO 9	
2416▼	MM511	500	400§	60		5.0	.33	.01∅	10∅	150∅	40†						4.0		NPLEΔ	Si	175J		TO18	
2417▼	MM512	500	400§	60		5.0	.33	.01∅	10∅	150∅	80†						4.0		NPLEΔ	Si	175J		TO18	
2418▼	MM513	500	400§	60		5.0	.33	.01∅	10∅	150∅	100†						4.0		NPLEΔ	Si	175J		TO18	

# 1. JUNCTION TRANSISTORS

IN ORDER OF MAXIMUM COLLECTOR DISSIPATION,  $f_{\alpha b}$ , AND TYPE NO.



LINE No.	TYPE No.	Max. COLL. DISS. in Free Air (mw)	$f_{\alpha b}$ (Mc.)	ABSOLUTE MAX. RATINGS @ 25°C					TYPICAL PARAMETERS @ 25°C										DESCRIPTION					
				$V_{cb}$ (volt)	$I_c$ (ma)	$V_{eb}$ (volt)	De-rate Free Air $^{\circ}C/mw$	Max. $I_{cbo}$ @ Max. $V_{cb}$ ( $\mu a$ )	BIAS		$h_{fe}$ or $h_{FE} - \dagger$	CIRCUIT			Max. NF (db)	Gain (db)	$C_{ob}$ (pf)	$r_{bb} \times C_{ob}$ (nsec)	$t_r$ (sec)	Type P - PNP N - NPN	Mat.	Max. Temp. ( $^{\circ}C$ )	S T A T U S	Dwg. No.
									$V_{cb}$ (volt)	$I_e$ (ma)		$h_i$ (ohm)	$h_o$ ( $\mu mho$ )	$h_r$ ( $\times 10^{-4}$ )										
2422	2N742	500		60	100	8.0	.25		5.0	100	20								N-ME	Si	200A	T	TO18	
2423	2N1765	500		500	500		.25	1000									.20u		PNPN	Si	150	T	TO29	
2424	2N2060	500		100		7.0		2.0 $\emptyset$	10 $\emptyset$	1.0 $\emptyset$	35 $\dagger\Delta$	b	25					10	N-PL	Si	200J	T	TO 5	
2425 $\nabla$	SST610	500		60	500	7.0	.25	2000	7.0	120	10000								NME $\Delta$	Si	150A	T	TO 5	
2426	TLX690	500																	FETA	Si	175J	D	TO12	
2427#	SFT130	550	1.00	24	500	12	.11	20	1.0 $\emptyset$	250 $\emptyset$	30 $\dagger$								P-A	Ge	85J		MS 5	
2428#	SFT145	550	1.00	45	500	25	.11	20	1.0 $\emptyset$	250 $\emptyset$	30 $\dagger$								P-A	Ge	85J		MS 5	
2429#	OC79	550	1.20	26	300		.09	10	6.0	50	42								P-A	Ge	75J		RO 8	
2430#	OC74	550	1.50	20	300		.09	10	6.0	50	65								P-A	Ge	75J		RO 8	
2431#	SFT146	550	1.80	45	500	25	.11	20	1.0 $\emptyset$	250 $\emptyset$	60 $\dagger$								P-A	Ge	85J		MS 5	
2432#	OC80	550	2.00	32	600	20		10	6.0	50	85								P- $\Delta\Delta$	Ge	75J		RO 8	
2433#	SFT131	550	2.00	24	500	12	.11	20	1.0 $\emptyset$	250 $\emptyset$	70 $\dagger$								P-A	Ge	85J		MS 5	
2434 $\nabla$ #	SFT131P	550	2.00	30	500	15	.11	25	1.0 $\emptyset$	250 $\emptyset$	70 $\dagger$								P-A	Ge	85J		MS 5	
2435#	17T1	550		35	500		.11				100 $\dagger$								P	Ge	85J			
2436#	18T1	550		25	500		.11				100 $\dagger$								P	Ge	85J			
2437	TI480	600	1.00	50	60	1.0	.167	2.0	10	5.0	9.0 $\Delta$	b	15	1.0	1.5				N-G	Si	125J		TO11	
2438	TI481	600	1.00	80	60	1.0	.167	2.0	10	5.0	9.0 $\Delta$	b	15	1.0	1.5				N-G	Si	125J		TO11	
2439	TI496	600	1.00	70	60	1.0	.167	2.0	5.0 $\emptyset$	3.0 $\emptyset$	10 $\Delta$ $\dagger$								N-G	Si	125J		TO11	
2440	HT100	600	150 $\$$	40	5.0			1.0 $\emptyset$	10	5.0 $\emptyset$	6.0 $\Delta$								N-ME $\Delta$	Si	175S		TO 5	
2441 $\nabla$ #	2S711	600	5.00	40	200	8.0	1.2	10 $\emptyset$	10	200	20								N-D	Si	100A		TO 5	
2442 $\nabla$ #	2S712	600	5.00	40	200	8.0	1.2	10 $\emptyset$	10	200	40								N-D	Si	100A		TO 5	
2443 $\nabla$ #	ZT1420	600	30.0 $\$$	60		5.0			1.0	10	300								N-ME	Si		D	TO 5	
2444 $\nabla$ #	ZT696	600	40.0 $\$$	60		5.0			1.0	10	60								N-ME	Si		D	TO 5	
2445	2N1983	600	50.0 $\$$	50		5.0	.21	5.0 $\emptyset$	5.0 $\emptyset$	1.0 $\emptyset$	90								N-D	Si	150J	T	TO 5	
2446	2N1984	600	50.0 $\$$	50		5.0	.21	5.0 $\emptyset$	5.0 $\emptyset$	1.0 $\emptyset$	45								N-D	Si	150J	T	TO 5	
2447	2N1985	600	50.0 $\$$	50		5.0	.21	5.0 $\emptyset$	5.0 $\emptyset$	1.0 $\emptyset$	25								N-D	Si	150J	T	TO 5	
2448	2N1986	600	50.0 $\$$	50		5.0	.21	5.0 $\emptyset$	10 $\emptyset$	150 $\emptyset$	150 $\dagger$								N-D	Si	150J	T	TO 5	
2449	2N1987	600	50.0 $\$$	50		5.0	.21	5.0 $\emptyset$	10 $\emptyset$	150 $\emptyset$	50 $\dagger$								N-D	Si	150J	T	TO 5	
2450	2N1988	600	50.0 $\$$	100		5.0	.21	5.0 $\emptyset$	10 $\emptyset$	30 $\emptyset$	65 $\dagger$								N-D	Si	150J	T	TO 5	
2451	2N1989	600	50.0 $\$$	100		5.0	.21	5.0 $\emptyset$	10 $\emptyset$	30 $\emptyset$	40 $\dagger$								N-D	Si	150J	T	TO 5	
2452	2N1990	600	50.0 $\$$	100		3.0	.21		10 $\emptyset$	30 $\emptyset$	20 $\Delta$ $\dagger$								N-D	Si	150J	T	TO 5	
2453	2N1991	600	50.0 $\$$	30		5.0	.21	5.0 $\emptyset$	10 $\emptyset$	150 $\emptyset$	35 $\dagger$								P-D	Si	150J	T	TO 5	
2454 $\nabla$ #	2N2236	600	50.0 $\$$ $\Delta$	40	150 $\emptyset$	6.0		.05 $\emptyset$	9.0 $\emptyset$	20	10 $\Delta$								NPLE	Si	150		TO 5	
2455 $\nabla$ #	ZT697	600	50.0 $\$$	60		5.0			1.0	10	120								N-ME	Si		D	TO 5	
2456	TI482	600	60.0	20	500	5.0	.20	2.0	10 $\emptyset$	150 $\emptyset$	20 $\Delta$ $\dagger$								N-ME	Si	150J		TO 5	
2457	TI483	600	60.0	40	500	5.0	.20	2.0	10 $\emptyset$	150 $\emptyset$	20 $\Delta$ $\dagger$								N-ME	Si	150J		TO 5	
2458	TI484	600	60.0	40	500	5.0	.20	2.0	10 $\emptyset$	150 $\emptyset$	40 $\Delta$ $\dagger$								N-ME	Si	150J		TO 5	
2459 $\nabla$	2N2303	600	90.0	50		5.0	.25	1.0	10 $\emptyset$	150 $\emptyset$	90 $\dagger$								P-ME	Si	175J	T	TO 5	
2460	2N1131	600	100	50		5.0	.25	1.0	10 $\emptyset$	150 $\emptyset$	25 $\dagger$								P-ME $\Delta$	Si	175J	N	TO 5	
2461	2N1132	600	100	50		5.0	.25	1.0	10 $\emptyset$	150 $\emptyset$	40 $\dagger$								P-ME $\Delta$	Si	175J	N	TO 5	
2462	2N1132B	600	100	70		6.0	.25	.01	10 $\emptyset$	150 $\emptyset$	40 $\dagger$	b	30	1.0	8.0				P-PL	Si	175J		TO 5	
2463	2N1507	600	100	60	600	5.0	.25	1.0	10 $\emptyset$	150 $\emptyset$	100 $\Delta$ $\dagger$								N-ME	Si	175J		TO 5	

# I. JUNCTION TRANSISTORS

IN ORDER OF MAXIMUM COLLECTOR DISSIPATION,  $f_{\alpha b}$ , AND TYPE NO.



LINE No.	TYPE No.	Max. COLL. DISS. in Free Air (mw)	$f_{\alpha b}$ (Mc.)	ABSOLUTE MAX. RATINGS @ 25°C					TYPICAL PARAMETERS @ 25°C										DESCRIPTION					
				BV <sub>cb</sub> (volt)	I <sub>c</sub> (ma)	BV <sub>eb</sub> (volt)	De-rate Free Air P/cm <sup>2</sup>	Max. I <sub>cb0</sub> @ Max. V <sub>cb</sub> (μA)	BIAS		h <sub>fe</sub> or h <sub>FE</sub> - †	CIRCUIT			Max. NF (db)	Gain (db)	C <sub>ob</sub> (pf)	r <sub>bb</sub> × C <sub>ob</sub> (nsec)	t <sub>r</sub> (sec)	Type P - PNP N - NPN	Mat.	Max. Temp. (°C)	S T A T U S	Dwg. No.
									V <sub>cb</sub> (volt)	I <sub>e</sub> (ma)		h <sub>i</sub> (ohm)	h <sub>o</sub> (μmho)	h <sub>r</sub> (×10 <sup>-4</sup> )										
2464	2N2237	600	100§	40	1500	6.0		.05	9.0	20	10Δ									NPLE	Si	150		TO 5
2465	2N1564	600	125§	80	100	5.0	.25	1.0	5.0	5.0	35	e	450	25	.90					N-D	Si	175J		TO 5
2466	2N1572	600	125§	125	100	5.0	.25		5.0	5.0	35									N-ME	Si	200S		TO 5
2467	2N696	600	150	60		5.0	.25	1.0	10	150	40†									N-ME	Si	175J	A	TO 5
2468	2N697	600	150	60		5.0	.25	1.0	10	150	75†									N-ME	Si	175J	A	TO 5
2469	2N703	600	150§	25	50	5.0	.50	.50	5.0	10	70†									N-ME	Si	175S	A	TO 18
2470	2N1565	600	150§	80	100	5.0	.25	1.0	5.0	5.0	70	e	660	65	1.1					N-D	Si	175J		TO 5
2471	2N1573	600	150§	125	100	5.0	.25		5.0	5.0	70†									N-NE	Si	200S		TO 5
2472	2N1644	600	150	60		5.0	.25	1.0	10	150	75†									N-ME	Si	175J		TO 5
2473	2N1644A	600	150	60		5.0	.25	1.0	10	15	75†									N-ME	Si	175J		TO 5
2474	HT102	600	150§	20		5.0		5.0	10	50	6.0Δ									N-ME	Si	175S		TO 5
2475	HT103	600	150§	20		3.0		5.0	10	50	6.0Δ									N-ME	Si	175S		TO 5
2476	RT482	600	150	20		5.0	.20	2.0	10	30	50†									N-ME	Si	150J	T	TO 5
2477	RT483	600	150	40		5.0	.20	2.0	10	150	40†									N-ME	Si	150J	T	TO 5
2478	RT484	600	150	40		5.0	.20	2.0	10	150	70†									N-ME	Si	150J	T	TO 5
2479	RT5151	600	150	45		5.0	.20	1.0	10	150	60†									N-ME	Si	150J	T	TO 5
2480	RT5152	600	150	45		5.0	.20	1.0	10	150	60†									N-ME	Si	150J	T	TO 5
2481	RT5203	600	150	40		5.0	.20	2.0												N-ME	Si	150J	T	TO 5
2482	RT5204	600	150	30		5.0	.20	1.0			70†									N-ME	Si	150J	T	TO 5
2483	RT5212	600	150	60		5.0	.20	1.0			70†									N-ME	Si	150J	T	TO 5
2484	RT5230	600	150	30		5.0	.25	.005	4.0	.05	40									N-ME	Si	150J	T	TO 5
2485	2N1972	600	160§	60		5.0	.25	1.0	5.0	1.0	55									N-D	Si	175J	T	TO 5
2486	2N1566	600	175§	80	100	5.0	.25	1.0	5.0	5.0	120	e	1000	95	1.3					N-D	Si	175J		TO 5
2487	2N1574	600	175§	125	100	5.0	.25		5.0	5.0	140†									N-ME	Si	200S		TO 5
2488	HT101	600	175§	40		5.0		1.0	10	50	6.0Δ									N-ME	Si	175S		TO 5
2489	2N699	600	180	120		5.0	.25	2.0	10	150	65†									N-ME	Si	175J	T	TO 5
2490	2N1566A	600	200§	80	100	80	.25	.50	5.0	5.0	125	e	1000	95	1.3					N-ME	Si	200A		TO 5
2491	2N2086	600	225§	120	500	5.0	.25	2.0	1.5	150	70†									N-E	Si	300S		TO 5
2492	2N2087	600	225§	120	500	5.0	.25	2.0	1.0	150	65†									N-E	Si	300S		TO 5
2493	2N1420	600	250	60		5.0	.25	1.0	10	150	140†									N-ME	Si	175J	T	TO 5
2494	2N2320	600	300§	30		5.0	.29	1.0	.40	20	40†									N	Si			TO 5
2495	2N1252	600		30		5.0	.25	10	10	150	35†									NME†	Si	175J	T	TO 5
2496	2N1253	600		30		5.0	.25	10	10	150	45†									NME†	Si	175J	T	TO 5
2497	2N1944	600		20		5.0	.25	1.0	2.0	1.0	300									N-ME	Si	175	T	TO 5
2498	2N1945	600		30		8.0	.25	1.0	2.0	1.0	300									N-ME	Si	175	T	TO 5
2499	2N1946	600		40		10	.25	1.0	2.0	1.0	300									N-ME	Si	175	T	TO 5
2500	2N1947	600		20		5.0	.25	1.0	2.0	100	650									N-ME	Si	175	T	TO 5
2501	2N1948	600		30		8.0	.25	1.0	2.0	100	650									N-ME	Si	175	T	TO 5
2502	2N1949	600		40		10	.25	1.0	2.0	100	650									N-ME	Si	175	T	TO 5
2503	2N1950	600		20		5.0	.25	1.0	2.0	100	375									N-ME	Si	175	T	TO 5
2504	2N1951	600		30		8.0	.25	1.0	2.0	100	375									N-ME	Si	175	T	TO 5
2505	2N1952	600		40		10	.25	1.0	2.0	100	375									N-ME	Si	175	T	TO 5
2506	2N1958	600		60	500	5.0	.25	.50	10	150	45									N-E	Si	175		TO 5
2507	2N1959	600		60	500	5.0	.25	.50	10	150	80									N-E	Si	175		TO 5
2508	2N2195	600		45	1.0	5.0	.29	1.00	45		20Δ†									N-PL	Si	300		TO 5

# 1. JUNCTION TRANSISTORS

IN ORDER OF MAXIMUM COLLECTOR DISSIPATION,  $f_{\alpha b}$ , AND TYPE NO.



LINE No.	TYPE No.	Max. COLL. DISS. in Free Air (mw)	$f_{\alpha b}$ (Mc.)	ABSOLUTE MAX. RATINGS @ 25°C					TYPICAL PARAMETERS @ 25°C											DESCRIPTION						
				$V_{cb}$ (volt)	$I_c$ (ma)	$V_{eb}$ (volt)	De-rate Free Air C/mw	Max. $I_{cbo}$ @ Max. $V_{cb}$ ( $\mu$ a)	BIAS		$h_{fe}$ or $h_{FE} \uparrow$	CIRCUIT			Max. NF (db)	Gain (db)	$C_{ob}$ (pf)	$r_{bb} \times C_{ob}$ (nsec)	$t_r$ (sec)	Type P - PNP N - NPN	Mat.	Max. Temp. (°C)	S T A T U S	Dwg. No.		
									$V_{cb}$ (volt)	$I_e$ (ma)		$h_i$ (ohm)	$h_o$ ( $\mu$ mho)	$h_r$ ( $\times 10^{-4}$ )												
2509	2N2195A	600		45	1.0	5.0	.29	100	45		20Δ†						20Δ		70u	N-PL	Si	300		TO 5		
2510▼	2N2198	600		80	200	6.0		15	5.0		45†						80		70u	N	Si	200		TO 5		
2511#	2SB271	600		25						100∅	80†									P-A	Ge					
2512#	2SB272	600		25						100∅	200†									P-A	Ge					
2513#	2SB273	600		25						100∅	150†									P-A	Ge					
2514#	2SC19	600		40	400	5.0		1.0∅	10∅	150∅	50†						30	.75	40n	NME†	Si	150J		TO 9		
2515#	2SC20	600		40	400	3.0		1.0∅									30	1.0	40n	N-ME	Si	150J		TO 9		
2516	RT5804	600		25			.21													N-ME	Si					
2517▼	TI602	600		60		7.0	.29	.001∅	10∅	150∅	7000†Δ									N-D	Si	200J	T	TO18		
2518#	2SC12	700	13.0§	60	250	8.0	.18		10	200	20									N-ME	Si	150J		TO 9		
2519	RT5401	700	100	30	750	7.0	.25	1.0	10	50	230	b 2.0	1.8	5.0						N	Si	300S		TO 5		
2520	RT5402	700	100	30	750	7.0	.25	1.0	10	50	300	b 2.0	1.8	5.0						N	Si	300S		TO 5		
2521	RT5403	700	100	60	750	7.0	.25	1.0	10	50	220	b 2.0	1.8	5.0						N	Si	300S		TO 5		
2522	RT5404	700	100	60	750	7.0	.25	1.0	10	50	210	b 2.0	1.8	5.0						N	Si	300S		TO 5		
2523	2N1154	750∅	1.00	50	60	1.0	.17	5.0	10	5.0	15		12	1.0	60				30	N-G	Si	150		OV 9		
2524	2N1155	750∅	1.00	80	50	1.0	.17	6.0	10	5.0	15		12	1.0	60				30	N-G	Si	150		OV 9		
2525	2N1156	750∅	1.00	40	40	1.0	.17	8.0	10	5.0	15		12	1.0	60				30	N-G	Si	150		OV 9		
2526	2N347	750	3.00	60	60	1.0		5.0	5.0		49									36	N-G	Si	150J			
2527	2N348	750	3.00	90	50	1.0		6.0	5.0		24									35	N-G	Si	150J			
2528	2N349	750	3.00	125	40	1.0		8.0	5.0		19									34	N-G	Si	150J			
2529	2N1123	750∅	5.00	45	500	45	.10	25	1.0∅	100∅	70†									15	P-A†	Ge	100J		TO31	
2530	2N600	750∅	8.00§	35	500	30	.10	25	1.0∅	100∅	125									15	P-A	Ge	100J	A	TO31	
2531	2N601	750∅	16.0§	30	500	20	.10	25	1.0∅	100∅	175									15	P-A	Ge	100J		TO31	
2532	2N1131A	750	100	60		5.0	.75	.50	10∅	150∅	25†	b 30	1.0	8.0						30	P-MEΔ	Si	175J		TO 5	
2533	2N1132A	750	100	60		5.0	.75	.50	10∅	150∅	40†	b 30	1.0	8.0						30	P-MEΔ	Si	175J		TO 5	
2534	2N1142A	750∅	400§	30	100	.70	.10		10∅	10∅	15†									1.5	P-ME	Ge	100J	T	TO 5	
2535	2N1143A	750∅	400§	30	100	.50	.10		10∅	10∅	15†									1.5	P-ME	Ge	100J	T	TO 5	
2536	2N1143	750∅	480	25	100	.50	.10		10	10∅	32									1.5	P-D	Ge	100J	T	TO 5	
2537	2N1141A	750∅	500§	35	100	1.0	.10		10∅	10∅	15†									1.5	P-ME	Ge	100J	T	TO 5	
2538	2N1142	750∅	600	30	100	.50	.10		10	10∅	32									1.5	P-D	Ge	100J	T	TO 5	
2539	2N1141	750∅	750	35	100	1.0	.10		10	10∅	32									1.5	P-D	Ge	100J	T	TO 5	
2540	2N243	750		60	60						20										N	Si	150J	F	OV 1	
2541	2N244	750		60	60						59										N	Si	150J		OV 1	
2542#	GET105	800	1.00	40	1A		.05	25	5.0∅	50∅	30†									28	P-A	Ge	85J		MM 6	
2543#	GET110	800	1.00	40	1A	12	.05	25	5.0∅	500∅	20†											85J			MM 6	
2544#	GET115	800	1.00	15	1A		.05	25	5.0∅	50∅	30†										26	P-A	Ge	85J		MM 6
2545#	GET116	800	1.00	30	1A		.05	25	5.0∅	50∅	30†										28	P-A	Ge	85J		MM 6
2546#	GET120	800	1.00Δ	30	1A	12	.05	25	5.0∅	500∅	20†											85J			MM 6	
2547	2N2008	800	30.0	175		8.0		2.0∅	50	5.0∅	65	b 6.0	.25	.70							15	NMEΔ	Si	200J		TO 5
2548	2N1975	800	40.0§	100		7.0	.22	.025∅	5.0∅	1.0∅	30										15	N-PL	Si	200J	T	TO 5
2549▼#	2N2216	800	40.0§	150	250	6.0	.22	.10∅	10∅	50∅	25†Δ										15Δ	PPLA	Si	200J		TO 5
2550	2N1974	800	50.0§	100		7.0	.22	.025∅	5.0∅	1.0∅	50										15	N-PL	Si	200J	T	TO 5
2551	2N2049	800	50Δ§	75		7.0	.22	.01∅	10∅	.10∅	60Δ†										3.0	N-PL	Si	200J	T	TO 5
2552▼#	2N2105	800	50.0§	50	600	6.0	.22	.01∅	10∅	150∅	20†Δ										25	N-PL	Si	200J	T	TO 5
2553	2N1973	800	60.0§	100		7.0	.22	.025∅	5.0∅	1.0∅	100										15	N-PL	Si	200J	T	TO 5

# 1. JUNCTION TRANSISTORS

IN ORDER OF MAXIMUM COLLECTOR DISSIPATION,  $f_{\alpha b}$ , AND TYPE NO.



LINE No.	TYPE No.	Max. COLL. DISS. in Free Air (mw)	$f_{\alpha b}$ (Mc.)	ABSOLUTE MAX. RATINGS @ 25°C					TYPICAL PARAMETERS @ 25°C										DESCRIPTION					
				BV <sub>cb</sub> (volt)	I <sub>c</sub> (ma)	BV <sub>eb</sub> (volt)	De-rate Free Air C/mw	Max. I <sub>cb0</sub> @ Max. V <sub>cb</sub> (μa)	BIAS		h <sub>fe</sub> or hFE - †	CIRCUIT			Max. NF (db)	Gain (db)	C <sub>ob</sub> (pf)	r <sub>bb</sub> × C <sub>ob</sub> (nsec)	t <sub>r</sub> (sec)	Type P - PNP N - NPN	Mat.	Max. Temp. (°C)	STATUS	Dwg. No.
									V <sub>cb</sub> (volt)	I <sub>e</sub> (ma)		h <sub>i</sub> (ohm)	h <sub>o</sub> (μmho)	h <sub>r</sub> (×10 <sup>-4</sup> )										
2554▼#	2N2104	800	60.0\$	50	600	6.0	.22	.01	10	150	30†Δ					35	.09u	PPLΔ	Si	200J		TO 5		
2555	2N698	800	70.0\$	120		7.0	.22	.005	10	150	40†				15	.08u	N-PL	Si	200J	T	TO 5			
2556	2N1252A	800	80.0	60			.22		10	150	30†						N-DA	Si	200J		TO 5			
2557	2N1253A	800	80.0	60			.22		10	150	60†						N-DA	Si	200J		TO 5			
2558	2N1889	800	110	100		7.0	.23	.01	10	150	70†				15	.08u	N-PLASi	Si	200J	T	TO 5			
2559	2N1893	800	110	120		7.0	.22	.01	10	150	85†				15	.08u	N-PLASi	Si	200J	N	TO 5			
2560▼	TIX1392	800	120\$	60	1000	5.0	.22	100	10	150	30†Δ				20		N-PL	Si	200J	D	TO 5			
2561	2N1890	800	130	100		7.0	.23	.01	10	150	120†				15	.08u	N-PLASi	Si	200J	T	TO 5			
2562	2N696A	800	150	60		5.0	.22	.10	10	5.0	45	b 5.4	.50	1.0	20		N-MEASi	Si	200	T	TO 5			
2563	2N697A	800	150	60		5.0	.22	.10	10	5.0	70	b 5.4	.50	1.0	20		N-MEASi	Si	200	T	TO 5			
2564#	TX116-1	800	150	60	50	5.0		1.0	20	10	60†	b 35			3.0		P-ME	Si	125A					
2565#	TX116-2	800	150	60	50	5.0		1.0	20	10	60†	b 35			3.0		P-ME	Si	125A					
2566#	TX116-3	800	150	60	50	5.0		1.0	20	10	60†	b 35			3.0		P-ME	Si	125A					
2567	2N1613	800	160	75		7.0	.22	.01	10	150	80†			12	18	.08u	N-PLASi	Si	200J	N	TO 5			
2568#	2SC49	800	160\$	120	300	6.0		2.0	10	150	70†				14		N-ME	Si	175J		TO39			
2569	2N699A	800	180	120		8.0	.22	.10	10	5.0	70	b 5.4	.50	1.0	15		N-MEASi	Si	200	T	TO 5			
2570	2N1420A	800	200	60						150	120†						N-PLASi	Si	200J	T	TO 5			
2571	2N1711	800	200	75		7.0	.22	.01	10	150	125†				25	.08u	N-MEASi	Si	200J	T	TO 5			
2572	2N1409A	800	230	30	500	4.0			10	150	35				35	.60u	N-ME	Si	175J		TO 5			
2573	2N1410A	800	230	45	500	4.0			10	150	65				35	.40u	N-ME	Si	175J		TO 5			
2574	2N1338	800	240	80		3.0		500							10		N-ME	Si	150J		TO 5			
2575	2N1342	800	260	150		5.0		10							8.0		N-ME	Si	175J		TO 5			
2576▼	MM486	800	400\$	60		5.0	.18	.01	10	150	40†				4.0		NPLEASi	Si	175J		TO 5			
2577▼	MM487	800	400\$	60		5.0	.18	.01	10	150	80†				4.0		NPLEASi	Si	175J		TO 5			
2578▼	MM488	800	400\$	60		5.0	.18	.01	10	150	100†				4.0		NPLEASi	Si	175J		TO 5			
2579	2N1508	800		100	1A	5.0	.19	30	3.6	600	20Δ†				28		N-ME	Si	175					
2580	2N1509	800		60	1A	5.0	.19	30	3.6	600	20Δ†				28		N-ME	Si	175					
2581	2N2193	800		80	1.0	8.0	.22	10	80		80†				20	70u	N-PLASi	Si	300		TO 5			
2582	2N2193A	800		80	1.0	8.0	.22	10	80		80†				20	70u	N-PLASi	Si	300		TO 5			
2583	2N2194	800		60	1.0	5.0	.22	10	60		40†				20	70u	N-PLASi	Si	300		TO 5			
2584	2N2194A	800		60	1.0	5.0	.22	10	60		40†				20	70u	N-PLASi	Si	300		TO 5			
2585	2N1335	850	170	120	75	4.0		750	50	30	13			10	4.0		N-MEASi	Si	150J		TO16			
2586	2N1336	850	170	120	75	4.0		750	50	30	13			10	4.0		N-MEASi	Si	150J		TO 5			
2587	2N1337	850	170	120	75	4.0		750	50	30	13			10	4.0		N-MEASi	Si	150J		TO 5			
2588	2N1339	850	220*	120	75	3.0		750	50	30	13			10	4.0		N-MEASi	Si	150J		TO16			
2589	2N1340	850	250*	120	75	3.0		750	50	30	13			10	4.0		N-MEASi	Si	150J		TO 5			
2590	2N1341	850	280*	120	75	3.0		750	50	30	13			10	4.0		N-MEASi	Si	150J		TO16			
2591	2N1409	850		30		4.0		10	10	150	45†				20	.06u	N-MEASi	Si	175J		TO 5			
2592	2N1410	850		45		4.0		10	10	150	90†				20	.06u	N-MEASi	Si	175J		TO 5			
2593	2N699B	870	120\$	120		7.0		.01	10	150	80†				15	.08u	N-PL	Si	200J	T	TO 5			
2594	HA7597	1000	.20	50	50	20	.15	.10	.50	3.0	14			30			P-A	Si	160		X 3			
2595	HA7598	1000	.30	50	50	20	.15	.10	.50	3.0	25			30			P-A	Si	160		X 3			
2596	HA7599	1000	.40	50	50	20	.15	.10	.50	3.0	50			30			P-A	Si	160		X 3			
2597	2N101/13	1000	.60	30	1500		.05	5000	2.0	500	20†						P	Ge	75		TO13			
2598	2N671	1000	.70	40	2A	40	.06	75	1.5	1A	100†						P-AA	Ge	85J		TO26			

# 1. JUNCTION TRANSISTORS

IN ORDER OF MAXIMUM COLLECTOR DISSIPATION,  $f_{\alpha b}$ , AND TYPE NO.



LINE No.	TYPE No.	Max. COLL. DISS. in Free Air (mw)	$f_{\alpha b}$ (Mc.)	ABSOLUTE MAX. RATINGS @ 25°C					TYPICAL PARAMETERS @ 25°C										DESCRIPTION					
				BV <sub>cb</sub> (volt)	I <sub>c</sub> (ma)	BV <sub>eb</sub> (volt)	De-rate Free Air C/mw	Max. I <sub>cb0</sub> @ Max. V <sub>cb</sub> (μa)	BIAS		h <sub>fe</sub> or h <sub>FE</sub> - †	CIRCUIT			Max. NF (db)	Gain (db)	C <sub>ob</sub> (pf)	r <sub>bb</sub> × C <sub>ob</sub> (nsec)	t <sub>r</sub> (sec)	Type P - PNP N - NPN	Mat.	Max. Temp. (°C)	STATUS	Dwg. No.
									V <sub>cb</sub> (volt)	I <sub>e</sub> (ma)		h <sub>i</sub> (ohm)	h <sub>o</sub> (μmho)	h <sub>r</sub> (×10 <sup>-4</sup> )										
2599	2N675	1000	.70	75	2A				1.5	1A∅	100†								P-A†	Ge	85J		TO26	
2600	2N1244	1000	.80	110		110	.14	.10	5.0	1.0	20	b	30	1.2	4.0			95	P-F	Si	160J		X 3	
2601	2N1242	1000	1.00	60		60	.14	.10	5.0	1.0	20	b	30	1.2	4.0			95	P-F	Si	160J		X 3	
2602	2N1243	1000	1.00	60		60	.14	.10	5.0	1.0	42	b	30	1.2	4.0			95	P-F	Si	160J		X 3	
2603♦	HA7516	1000	1.00	90		90	.14	.10	5.0	1.0	45	b	30	1.2	4.0			95	P-A	Si	160J		X 3	
2604♦	HA7517	1000	1.00	110		110	.14	.10	5.0	1.0	45	b	30	1.2	4.0			95	P-A	Si	160J		X 3	
2605♦	HA7518	1000	1.00	60		60	.14	.10	5.0	1.0	65	b	30	1.2	4.0			95	P-A	Si	160J		X 3	
2606	HA7730	1000	1.00	40		20		5.0	10	5.0	22		10	1.5	4.0				P-A	Si	125		X 3	
2607	HA7731	1000	1.00	80		40		2.0	10	5.0	22		10	1.5	4.0				P-A	Si	125		X 3	
2608	HA7732	1000	1.00	40		20		5.0	10	5.0	60		10	1.5	4.0				P-A	Si	125		X 3	
2609	HA7733	1000	1.00	80		40		2.0	10	5.0	60		10	1.5	4.0				P-A	Si	125		X 3	
2610	2N1238	1000	1.20	15		15	.14	.10	5.0	1.0	20	b	30	1.2	15			95	P-F	Si	160J		X 3	
2611	2N1239	1000	1.20	15		15	.14	.10	5.0	1.0	42	b	30	1.2	15			95	P-F	Si	160J		X 3	
2612	2N1240	1000	1.20	35		35	.14	.10	5.0	1.0	20	b	30	1.2	8.0			95	P-F	Si	160J		X 3	
2613	2N1241	1000	1.20	35		35	.14	.10	5.0	1.0	42	b	30	1.2	8.0			95	P-F	Si	160J		X 3	
2614	HA7520	1000	1.20	35	100	35	.14	.10	5.0	1.0	12		30	1.2	10			95	P	Si	160J		X 3	
2615	HA7521	1000	1.20	60	100	60	.14	.10	5.0	1.0	12		30	1.2	10			95	P	Si	160J		X 3	
2616	2N342B	1000∅	6.00	85	60	2.0	.13	50	10∅	5.0	21	b	30	2.0	.30			20	GD	Si	150J		TO11	
2617	2N343B	1000∅	6.00	65	60	2.0	.13	100	10∅	5.0	59	b	30	2.0	.30			20	GD	Si	150J		TO11	
2618†	2N1140	1000	60.0	40		5.0		15	6.0∅	50∅	50†						.20u	N-t	Si	200		TO 5		
2619▼	2N2297	1000	90.0	80		7.0	.175	.01	10∅	150∅	55†						.08u	NPLE	Si	200J	T	TO 5		
2620▼	2N988	1000∅	300§	20	220	3.0	.50	.50∅	1.0∅	10∅	20Δ						11	N	Si	175		TO18		
2621▼	2N989	1000∅	300§	20	220	3.0	.50	.50∅	1.0∅	10∅	20Δ						8.0	N	Si	175		TO18		
2622	2N339	1000∅		55	60	1.0	.13	1.0	10	5.0	50	b	30	2.0	3.0			30	N-G	Si	150J	A	RO28	
2623	2N339A	1000∅		60		3.0		1.0	10∅	1.0	53	b	30	2.0	3.0			30	N	Si	200S		TO11	
2624	2N340	1000∅		85	60	1.0	.13	1.0	10	5.0	50	b	30	2.0	3.0			30	N-G	Si	150J	A	RO28	
2625	2N340A	1000∅		85		3.0		1.0	10∅	1.0	53	b	30	2.0	3.0			30	N	Si	200S		TO11	
2626	2N341	1000∅		125	60	1.0	.13	1.0	10	5.0	50	b	30	2.0	3.0			30	N-G	Si	150J	A	RO28	
2627	2N341A	1000∅		125		3.0		1.0	10∅	1.0	53	b	30	2.0	3.0			30	N	Si	200S		TO11	
2628	2N342	1000∅		60	60	1.0	.13	1.0	10	5.0	20	b	30	2.0	3.0			30	N-G	Si	150J	M	RO28	
2629	2N342A	1000∅		85	60	1.0	.13	1.0	10	5.0	20	b	30	2.0	3.0			30	N-G	Si	150J		TO11	
2630	2N343	1000∅		60	60	1.0	.13	1.0	10	5.0	59	b	30	2.0	3.0			30	N-G	Si	150J	M	RO28	
2631	2N497A	1000∅		60		8.0	5.7	10∅	60Δ	0	36∇								N-ME	Si	200S		TO 5	
2632	2N498A	1000		100		8.0	5.7	10∅	100Δ	0	36∇								N-ME	Si	200S		TO 5	
2633	2N656A	1000		60		8.0	5.7	10∅	60Δ	0	90∇								N-ME	Si	200S		TO 5	
2634	2N657A	1000		100		8.0	5.7	10∅	100Δ	0	90∇								N-ME	Si	200S		TO 5	
2635	2N673	1000		25	2A	25	.06	75									.35u	P-AA	Ge	85J		TO26		
2636#	82T1	1200	1.00	30	1500	10		80	1.0∅	1.0∅	30†								P	Ge	80J			
2637	2N1206	1200	20.0	60		3.0		15	10∅	10∅	35		8.0	.55					N	Si	200		TO 5	
2638	2N1207	1200	20.0	60		3.0		15	10∅	10∅	50		8.0	.55					N	Si	200		TO 5	
2639	PT720	1200	350	25	200	5.0		30	10	.10	80						8.0	15	3.5	N-D	Si	200		TO18
2640	2N919	1200	400	25	220	5.0	16	30	1.0∅	10∅	40†							5.0	N	Si	200		TO18	
2641	2N920	1200	400	25	220	5.0	16	30	1.0∅	10∅	80†							5.0	N	Si	200		TO18	
2642	2N921	1200	400	50	220	5.0	16	30	1.0∅	10∅	40†							4.0	N	Si	200		TO18	
2643	2N922	1200	400	50	220	5.0	16	30	1.0∅	10∅	80†							4.0	N	Si	200		TO18	

# 1. JUNCTION TRANSISTORS

IN ORDER OF MAXIMUM COLLECTOR DISSIPATION,  $f_{cb}$ , AND TYPE NO.



LINE No.	TYPE No.	Max. COLL. DISS. in Free Air (mw)	$f_{cb}$ (Mc.)	ABSOLUTE MAX. RATINGS @ 25°C					TYPICAL PARAMETERS @ 25°C										DESCRIPTION						
				BV <sub>cb</sub> (volt)	I <sub>c</sub> (ma)	BV <sub>eb</sub> (volt)	De-rate Free Air C/mw	Max. I <sub>cbo</sub> @ Max. V <sub>cb</sub> (μa)	BIAS		CIRCUIT			Max. NF (db)	Gain (db)	C <sub>ob</sub> (pf)	$r_{bb} \times C_{ob}$ (nsec)	t <sub>r</sub> (sec)	Type P-NPN N-PNP	Mat.	Max. Temp. (°C)	STATUS	Dwg. No.		
									V <sub>cb</sub> (volt)	I <sub>e</sub> (ma)	h <sub>fe</sub> or hFE-†	h <sub>i</sub> (ohm)	h <sub>o</sub> (μmho)											h <sub>r</sub> (×10 <sup>-4</sup> )	
2644	2N706C	1200		40	50	5.0	.48	1.0	1.0	10	40†										N-†	Si	200J		TO18
2645	2N717A	1800	200§	75		7.0															N-ME†	Si			TO18
2646	PT850	2000	200	120		5.0					90										N-D	Si			TO 5
2647	2N1840	2400	175	25					10	150	12†										N	Si			TO 5
2648#	26T2C	2500	20.0	60	100	1.0		5.0	10	5.0	50	8.0	1.5	3.0							N	Si			
2649#	29T2C	2500	20.0	60	100	1.0		5.0	10	5.0	50	8.0	1.5	3.0							N	Si			
2650	2N1837	2800	175	80					10	150	75†										N-D	Si			TO 5
2651	2N1838	2800	175	45					10	100	90†										N-D	Si			TO 5
2652	2N1839	2800	175	45					10	100	25†										N-D	Si			TO 5
2653	PT850A	2800	200	120		5.0			10	150	90										N-D	Si	175		TO 5
2654	2N1837A	2800	210§	80		8.0					80†										N-MEΔ	Si			TO 5
2655	2N1055	3000	4.00	125						50	45†										N-D	Si			TO 5
2656	RT697M	3000§	150	60		5.0	.25	1.0	5.0	1.0	70	b	26	.20	1.6						N-MEΔ	Si	175J	u	3
2657	2N1693	3000	450§	25	500	2.0				20	90db										P-ME	Ge	100J		
2658	2N1692	3000	500§	25	500	3.0				20	10db										P-ME	Ge	100J		
2659	RT5001	3000		60		5.0	.06	1.0		500	40	e	60								N-ME	Si	175J		TO 5
2660	RT5002	3000		60		5.0	.06	1.0		500	80	e	100								N-ME	Si	175J		TO 5
2661	RT5003	3000		100		5.0	.06	1.0		500	40	e	60								N-ME	Si	175J		TO 5
2662	RT5004	3000		100		5.0	.06	1.0		500	80	e	100								N-ME	Si	175J		TO 5
2663#	2SB180	4000		40	500	12		1000	1.5	500	70†										P-A	Ge	85S		MD13
2664#	2SB181	4000		60	500	12		1000	1.5	500	70†										P-A	Ge	92S		MD13
2665	2N1700	5000	1.20	60	1A	6.0		75	4.0	100	20Δ										N	Si	200		TO 5
2666	2N545	5000	4.00	60						500	25†										N-GD	Si	175A	N	TO 5
2667	2N546	5000	4.00	30						500	25†										N-GD	Si	175A		TO 5
2668	2N547	5000	4.00	60						500	35†										N-GD	Si	175A		TO 5
2669	2N548	5000	4.00	30						500	35†										N-GD	Si	175A		TO 5
2670	2N549	5000	4.00	60						500	35†										N-GD	Si	175A		TO 5
2671	2N550	5000	4.00	30						500	35†										N-GD	Si	175A		TO 5
2672	2N551	5000	4.00	60						500	30†										N-GD	Si	175A		TO 5
2673	2N552	5000	4.00	30						500	30†										N-GD	Si	175A		TO 5
2674	2N1054	5000	4.00	125						200	45†										N-D	Si			TO 5
2675	2N1116	5000	4.00	60						500	70†										N-GD	Si	175A		TO 5
2676	2N1117	5000	4.00	60						200	70†										N-GD	Si	175A		TO 5
2677	2N1052	5000	7.00	60		10		15	6.0	500	25†										N-DA	Si	200A		TO 5



## 2. POWER TRANSISTORS

IN ORDER OF DECREASING MAXIMUM THERMAL RESISTANCE, AND TYPE NO.



LINE No.	TYPE No.	Max. Thermal Res. in Free Air (°C/W)	ABSOLUTE MAX. RATINGS @ 25°C					CURRENT GAIN $h_{FE}$ or $h_{fe} - f$						$f_{\alpha b}$ or $f_{\alpha e - f}$ (Kc)	Max. Sat. Res. (ohm)	$t_r$ ( $\mu$ sec)	MAX. COLL. CUR.		DESCRIPTION				
			$I_C$ (amp.)	$I_B$ (amp.)	$V_{CB}$ (volt)	$V_{EB}$ (volt)	$V_{CE}$ (volt)	BIAS			Min.	Center	Max.				$I_{CBO}$ (ma)	@ $V_{CB}$ (volt)	Type	Mat.	Max. Temp. (°C)	S T A T U S	Dwg. No.
								$V_{CB}$ (volt)	$I_C$ (amp.)														
2700#	2SD43	450	.05		25	12	25	1.0	.05	40	70	110	1000			.014	12	N-A	Ge	75J		TO 1	
2701#	2SB43	340	.05		25	12	25	1.0	.05	40	70	110	1000			.014	12	P-A	Ge	75J		TO 1	
2702#	2SB292	340	.15		30	12	25	1.0	.05	40	80	130	1.0Mc			.01	12	P-A	Ge	75J		TO 9	
2703	2N1176	200	.30	.03	15		15	5.0	.01	20			1500	1.0		.025	10	P-A	Ge	85J		TO 9	
2704	2N1176A	200	.30	.03	40		40	5.0	.01	20			1500	1.0		.030	25	P-A	Ge	85J		TO 9	
2705	2N1176B	200	.30	.03	60		60	5.0	.01	20			1500	1.0		.035	45	P-A	Ge	85J		TO 9	
2706	2N1479	200			60		40		.20	15			1500					N-ME	Si			TO 5	
2707	2N1480	200			100		55		.20	15			1500					N-ME	Si			TO 5	
2708	2N1481	200			60		40		.20	35			1500					N-ME	Si			TO 5	
2709	2N1482	200			100		55		.20	35			1500					N-ME	Si			TO 5	
2710♦#	ZT1479	200	1.5	1.0	60	12	60	4.0	.20	20		60	1500		1.0	10	30	N-ME	Si	200		TO 5	
2711♦#	ZT1480	200	1.5	1.0	100	12	100	4.0	.20	20		60	1500		1.0	10	30	N-ME	Si	200		TO 5	
2712♦#	ZT1481	200	1.5	1.0	60	12	60	4.0	.20	35		100	1500		1.0	10	30	N-ME	Si	200		TO 5	
2713♦#	ZT1482	200	1.5	1.0	100	12	100	4.0	.20	35		100	1500		1.0	10	30	N-ME	Si	200		TO 5	
2714	2N1768	175	3.0	1.5	60	12	40	4.0	.75	35		100	1250	1.0	1.0	.015	30	N-D	Si	200C			
2715	2N1769	175	3.0	1.5	100	12	55	4.0	.75	35		100	1250	1.0	1.0	.015	30	N-D	Si	200C			
2716	2N2017	175	1.0		60	8.0	60	10	200	50		200				.01	30	N-Δ	Si	200J		TO 5	
2717#	2SD120	150	1.5	1.0	60	12	40	4.0	.20	15		100	1.5		.70	10	30	N	Si	175			
2718#	2SD121	150	1.5	1.0	100	12	55	4.0	.20	15		100	1.5		.70	10	30	N	Si	175			
2719▼#	DT1110	150	.50	.05	30	10	30	6.0	.30	20	45	60	500	4.0	1.0	.002	30	N-D	Si	175J		TO 5	
2720▼#	DT1111	150	.50	.05	60	10	60	6.0	.30	20	45	60	500	4.0	1.0	.002	60	N-D	Si	175J		TO 5	
2721▼#	DT1112	150	.50	.05	100	10	100	6.0	.30	20	45	60	500	4.0	1.0	.002	100	N-D	Si	175J		TO 5	
2722▼#	DT1120	150	.50	.05	30	10	30	6.0	.30	40	80	120	1500	4.0	1.0	.002	30	N-D	Si	175J		TO 5	
2723▼#	DT1121	150	.50	.05	60	10	60	6.0	.30	40	80	120	1500	4.0	1.0	.002	60	N-D	Si	175J		TO 5	
2724▼#	DT1122	150	.50	.05	100	10	100	6.0	.30	40	80	120	1500	4.0	1.0	.002	100	N-D	Si	175J		TO 5	
2725▼	NS792	146	1.0	.70	60	5.0	60	2.5	.60	20		60	150M	2.5	20m	.001	30	N-E	Si	200		TO 5	
2726▼	NS793	146	1.0	.70	60	5.0	60	2.5	.60	40		120	150M	2.5	20m	.001	30	N-E	Si	200		TO 5	
2727	2N2106	125			60	8.0		10	.20	12		36	15Mc		2.5	.20	30	N-MEΔ	Si	150J		TO 5	
2728	2N2107	125			60	8.0		10	.20	30		90	15Mc		2.5	.20	30	N-MEΔ	Si	150J		TO 5	
2729	2N2108	125			60	8.0		10	.20	75		200	15Mc		2.5	.20	30	N-MEΔ	Si	150J		TO 5	
2730	2N1483	100			60		40		.75	15			1250					N-ME	Si		A	TO 8	
2731	2N1484	100			100		55		.75	15			1250					N-ME	Si		A	TO 8	
2732	2N1485	100			60		40		.75	35			1250					N-ME	Si		A	TO 8	
2733	2N1486	100			100		55		.75	35			1250					N-ME	Si		A	TO 8	
2734	2N1701	100	2.5	1.0	60	6.0	40	4.0	3.0	20		80	1.0	5.0		100	30	N	Si	200		TO 8	
2735#	2SB200	100	.40		32	12	32	1.0	.15	30	75	150	500			.04	12	P-A	Ge	75J		RO10	
2736#	2SB202	100	.40		32	12	32	1.0	.15	70	140	290	500			.04	12	P-A	Ge	75J		RO10	
2737♦#	ZT1483	100	3.0	1.5	60	12	60	4.0	.75	20		60	1250		1.0	15	30	N-ME	Si	200		TO 8	
2738♦#	ZT1484	100	3.0	1.5	100	12	100	4.0	.75	20		60	1250		1.0	15	30	N-ME	Si	200		TO 8	
2739♦#	ZT1485	100	3.0	1.5	60	12	60	4.0	.75	35		100	1250		1.0	15	30	N-ME	Si	200		TO 8	
2740♦#	ZT1486	100	3.0	1.5	100	12	100	4.0	.75	35		100	1250		1.0	15	30	N-ME	Si	200		TO 8	
2741	ST6510	88			20		20		.15	20								N	Si	200			
2742	ST6511	88			40		20		.15	20								N	Si	200			
2743	ST6512	88			40		20		.15	40								N	Si	200			
2744	2N1092	75	.50	.20	60	12	30	4.0	.20	15	35	75	1500	10	1.2	.50	60	N-D	Si	175A		TO 5	

## 2. POWER TRANSISTORS

IN ORDER OF DECREASING MAXIMUM THERMAL RESISTANCE, AND TYPE NO.



LINE No.	TYPE No.	Max. Thermal Res. in Free Air (°C/W)	ABSOLUTE MAX. RATINGS @ 25°C					CURRENT GAIN $h_{FE}$ or $h_{fe} - f$					$f_{\alpha b}$ or $f_{\alpha e} - f$ (Kc)	Max. Sat. Res. (ohm)	$t_r$ ( $\mu$ sec)	MAX. COLL. CUR.		DESCRIPTION					
			$I_C$ (amp.)	$I_B$ (amp.)	$V_{CB}$ (volt)	$V_{EB}$ (volt)	$V_{CE}$ (volt)	BIAS			Min.	Center				Max.	$I_{CBO}$ (ma)	@ $V_{CB}$ (volt)	Type P - PNP N - NPN	Mat.	Max. Temp. (°C)	STATUS	Dwg. No.
								$V_{CB}$ (volt)	$I_C$ (amp.)														
2745	2N1183	75			45		20		.40 $\Delta$	20			500					P-A	Ge		A	TO 8	
2746	2N1183A	75			60		30		.40 $\Delta$	20			500					P-A	Ge		A	TO 8	
2747	2N1183B	75			80		40		.40 $\Delta$	20			500					P-A	Ge		A	TO 8	
2748	2N1184	75			45		20		.40 $\Delta$	40			500					P-A	Ge		A	TO 8	
2749	2N1184A	75			60		30		.40 $\Delta$	40			500					P-A	Ge		A	TO 8	
2750	2N1184B	75			80		40		.40 $\Delta$	40			500					P-A	Ge		A	TO 8	
2751#	2SC150	75	.10		20	1.0	20	6.0	10	10 $\uparrow$	50 $\uparrow$	100 $\uparrow$	100	10	20	N	Si	175					
2752#	2SC151	75	.10		40	4.0	25	6.0	10	10 $\uparrow$	50 $\uparrow$	100 $\uparrow$	130	10	40	N	Si	175					
2753#	2SC152	75	.10		60	4.0	25	6.0	10	10 $\uparrow$	50 $\uparrow$	100 $\uparrow$	160	10	60	N	Si	175					
2754	2N1505	50			50	3.0	40	28 $\emptyset$	.10	7.0			250M	.05	28	N-ME $\Delta$	Si	175J				TO 5	
2755	2N1506	50			60	4.0	40	28 $\emptyset$	.10	10			250M	.05	28	N-ME $\Delta$	Si	175J				TO 5	
2756#	2SB27	50	.50		15	10	15	1.5 $\emptyset$	.20	18	29	46	7.0 $\uparrow$	.80		P-A	Ge	75J				TO 3	
2757#	2SB28	50	.50		15	10	15	1.5 $\emptyset$	.20	35	68	96	7.0 $\uparrow$	.80	15	P-A	Ge	75J				TO 3	
2758#	2SB29	50	.50		15	10	15	1.5 $\emptyset$	.20	72	115	186	7.0 $\uparrow$	.80	15	P-A	Ge	75J				TO 3	
2759#	2SB30	50	.50		15	10	15	1.5 $\emptyset$	.20	35	68	96	7.0 $\uparrow$	.80	15	P-A $\$$	Ge	75J				TO 3	
2760#	2SB31	50	.50		15	10	15	1.5 $\emptyset$	.20	72	115	186	7.0 $\uparrow$	.80	15	P-A $\$$	Ge	75J				TO 3	
2761	2N497	44 $\emptyset$	.20		60	8.0	60	10 $\emptyset$	.20	12			36	.010	30	N-D	Si	200J	M			TO 5	
2762	2N498	44 $\emptyset$	.20		100	8.0	100	10 $\emptyset$	.20	12			36	.010	30	N-D	Si	200J	M			TO 5	
2763	2N656	44 $\emptyset$	.20		60	8.0	60	10 $\emptyset$	.20	30			90	.010	30	N-D	Si	200J	M			TO 5	
2764	2N657	44 $\emptyset$	.20		100	8.0	100	10 $\emptyset$	.20	30			90	.010	30	N-D	Si	200J	M			TO 5	
2765#	2S017	44	.20		60	8.0	60	10 $\emptyset$	.20	12	20	36	3000	.015	30	N-D	Si	200J				RO30	
2766#	2S018	44	.20		100	8.0	100	10 $\emptyset$	.20	12	20	36	3000	.015	30	N-D	Si	200J				RO30	
2767#	2S019	44	.20		60	8.0	60	10 $\emptyset$	.20	30			90	.010	30	N-D	Si	200J				RO30	
2768#	2S020	44	.20		100	8.0	100	10 $\emptyset$	.20	30			90	.010	30	N-D	Si	200J				RO30	
2769#	2SB142	40	1.0		30	12	30	1.5 $\emptyset$	1.0	12	24	31	7.0 $\uparrow$	1.0	30	P-A	Ge	85J				TO 3	
2770#	2SB143	40	1.0		30	12	30	1.5 $\emptyset$	1.0	23	37	59	7.0 $\uparrow$	1.0	30	P-A	Ge	85J				TO 3	
2771#	2SB144	40	1.0		30	12	30	1.5 $\emptyset$	1.0	45	75	119	7.0 $\uparrow$	1.0	30	P-A	Ge	85J				TO 3	
2772#	2SB145	40	1.0		30	12	30	1.5 $\emptyset$	1.0	23	37	59	7.0 $\uparrow$	1.0	30	P-A $\$$	Ge	85J				TO 3	
2773#	2SB146	40	1.0		30	12	30	1.5 $\emptyset$	1.0	45	75	119	7.0 $\uparrow$	1.0	30	P-A $\$$	Ge	85J				TO 3	
2774	2N2102	35			120		80	10 $\emptyset$	.15	40			120			N-PL $\Delta$	Si						
2775	2N2149	35			100		10	10	.03	40			120	.08		P-D	Si						
2776#	2SB140	35	1.5		40	12	40	1.5 $\emptyset$	1.0	62	74	89	7.0 $\uparrow$	.60	40	P-A	Ge	85J				TO 3	
2777#	2SB141	35	1.5		60	12	60	1.5 $\emptyset$	1.0	62	74	89	7.0 $\uparrow$	.60	60	P-A	Ge	85J				TO 3	
2778#	2SB147	35	1.5		60	12	60	1.5 $\emptyset$	.20	28	60	119	7.0 $\uparrow$	.60	50	P-A	Ge	85J				TO 3	
2779	2N528	30	1.0	.50	40	40	40	1.0 $\emptyset$	.50 $\emptyset$	20	38		8Mc	.50	.50	P-AA	Ge	100	R			TO38	
2780	2N1067	30	.50	.20	60	12	30	4.0	.20	15	35	75	1500	10	1.2	N-D	Si	175A				TO 8	
2781#	2SC41	30	5.0	1.5	150	6.0		10 $\emptyset$	1.0	12	28	92	20	1.0		N-ME	Si	150J				TO 3	
2782#	2SC42	30	5.0	1.5	150	6.0		10 $\emptyset$	1.0	4.0	28	185	20	2.0		N-ME	Si	150J				TO 3	
2783#	2SC43	30	5.0	1.5	100	6.0		10 $\emptyset$	1.0	4.0	28	185	20	2.0		N-ME	Si	150J				TO 3	
2784#	2SC44	30	5.0	1.5	50	6.0		10 $\emptyset$	1.0	4.0	28	185	20	2.0		N-ME	Si	150J				TO 3	
2785#	2SB16A	25 $\emptyset$	.60		20			2.0 $\emptyset$	.05	20	50			.02	5.0	P-A	Ge	70					
2786#	2SB17A	25 $\emptyset$	.60		40			2.0 $\emptyset$	.05	20	50			.02	5.0	P-A	Ge	70					
2787#	2SB18A	25 $\emptyset$	.60		80			2.0 $\emptyset$	.05	20	50			.02	5.0	P-A	Ge	70					
2788	ST5060	25			50		40		.005	9.0 $\uparrow$						N	Si	100					
2789	ST5061	25			80		70		.005	9.0 $\uparrow$						N	Si	100					

## 2. POWER TRANSISTORS

IN ORDER OF DECREASING MAXIMUM THERMAL RESISTANCE, AND TYPE NO.



LINE No.	TYPE No.	Max. Thermal Res. in Free Air (°C/W)	ABSOLUTE MAX. RATINGS @ 25°C					CURRENT GAIN $h_{FE}$ or $h_{fe} - \dagger$					$f_{\alpha b}$ or $f_{\alpha e} - \dagger$ (Kc)	Max. Sat. Res. (ohm)	$t_r$ ( $\mu$ sec)	MAX. COLL. CUR.		DESCRIPTION					
			$I_C$ (amp.)	$I_B$ (amp.)	$V_{CB}$ (volt)	$V_{EB}$ (volt)	$V_{CE}$ (volt)	BIAS			Min.	Center				Max.	$I_{CBO}$ (ma)	@ $V_{CB}$ (volt)	Type P - PNP N - NPN	Mat.	Max. Temp. (°C)	STATUS	Dwg. No.
								$V_{CB}$ (volt)	$I_C$ (amp.)														
2790#	2SA231	22.5	.40		40	12		6.0	.07	30†	60†	110†	2.5			.05	40	P	Ge	70			
2791#	2SA232	22.5	.40		30	12		6.0	.07	30†	60†	175†	4.0			.05	30	P	Ge	70			
2792#	2SB81	22.5	.50		80	12		2.0∅	.10		45		.40			.05	50	P-A	Ge	70J			
2793#	2SB82	22.5	.50		100	12		2.0∅	.10		45		.40			.035	50	P-A	Ge	70J			
2794#	2SD122	21.4	3.0	1.5	60	12	40	4.0	.75	15		100	1.2		2.6	.15	30	N	Si	175			
2795#	2SD123	21.4	3.0	1.5	100	12	55	4.0	.75	15		100	1.2		2.6	.15	30	N	Si	175			
2796	2N2033	20	3.0	1.0	80	6.0	60	4.0	.50	25		75	1.5	.80	1.8	.025	80	N	Si	200		TO 5	
2797	2N2034	20	3.0	1.0	80	6.0	60	4.0	1.0	20		60	1.5	.30	1.8	.025	80	N	Si	200		TO 5	
2798▼	SN101	20∅	1.0	.05	140	2.0	140											N-ME	Si	200A		TO 5	
2799▼	SN102	20∅	1.0	.05	120	2.0	120											N-ME	Si	200A		TO 5	
2800	TA2084	20∅	1.0	.05	140	1.0	140											N-ME	Si	200A	D	TO 5	
2801	2N1068	15	1.5	.50	60	12	30	4.0	.75	15	35	75	1500	2.7	1.6	.50	60	N-D	Si	175A		TO 8	
2802	2N2196	15∅			80	8.0	60	10∅	200	30		90	15Mc			.075	80	N-Δ	Si	175J		MD14	
2803	2N2197	15∅			80	8.0	60	10∅	200	75		200	15Mc			.075	80	N-Δ	Si	175J		MD14	
2804	2N2201	15∅			120	10	100	10∅	200	30		90	15Mc			.05	120	N-Δ	Si	175J		MD14	
2805	2N2202	15∅			120	10	100	10∅	200	30		90	15Mc			.05	120	N-Δ	Si	175J		RO45	
2806	2N2203	15∅			120	10	100	10∅	200	30		90	15Mc			.05	120	N-Δ	Si	175J		RO46	
2807	2N2204	15∅			120	10	100	10∅	200	30		90	15Mc			.05	120	N-Δ	Si	175J		MT19	
2808▼	2N2282	15	3.0		60		30	1.0	.50	30		75	2500	.30		.05	1.0	P-DA	Ge	110J		TO37	
2809▼	2N2283	15	3.0		100		60	1.0	.50	30		75	2500	.30		.05	1.0	P-DA	Ge	110J		TO37	
2810▼	2N2284	15	3.0		200		100	1.0	.50	30		75	2500	.30		.05	1.0	P-DA	Ge	110J		TO37	
2811#	2SB80	15	1.0		25	10		1.5	.50		70		.60			.04	25	P-A	Ge	85J			
2812#	2SB106	15∅	.50		30	10		2.0∅	.20	20	70	120	500			.10	30	P-A	Ge	75J		MM 5	
2813#	2SB109	15∅	.50		40	10		2.0∅	.20	15	70	120	500			.10	40	P-A	Ge	75J		MM 5	
2814#	2SB109A	15∅	.50		60	10		2.0∅	.20	15	70	120	500			.10	60	P-A	Ge	75J		MM 5	
2815#	2SB109B	15∅	.50		80	10		2.0∅	.20	15	70	120	500			.10	80	P-A	Ge	75J		MM 5	
2816	B1013	15	3.0		60		25	1.0∅	.50	30		75	2.5	.30		.03	1.0	P-DAΔ	Ge	110J		TO37	
2817	B1013A	15	3.0		100		50	1.0∅	.50	30		75	2.5	.30		.03	1.0	P-DAΔ	Ge	110J		TO37	
2818#	TF78	13∅	.60		16	5.0	16	.30∅	.05	20	30					.03	16	P-A	Ge	75J			
2819#	TF78/30	13∅	.60		32	10	32	.30∅	.05	20	30					.03	32	P-A	Ge	75J			
2820#	TF78/60	13∅	.60				64	.30∅	.05	20	30					.03	64	P-A	Ge	75J			
2821	2N102/13	12.5∅	1.5		30	15	30	1.5∅	.50	10.5								N	Ge	75J		TO13	
2822	2N144/13	12.5∅	.80		60	30	60	4.0∅	.250	10.5								N	Ge	75J		TO13	
2823	2N1645	12.5	.30	1.0	35	1.0	20	10	.05	9.0†	75†	200†	700M	2.5		15m	20	P-D	Ge	100	R	TO38	
2824#	2SB254	12.5	.60		35	10		1.5	.20	50	100	250				.50	25	P-A	Ge	75J		MD10	
2825#	2SB255	12.5	.60		35	10		1.5	.20	30	50	120				.50	25	P-A	Ge	75J		MD10	
2826#	2SB256	12.5	.60		25	10		1.5	.20	30	75	250				.50	25	P-A	Ge	75J		MD10	
2827#	THP45	12			15				2.0	20		200						P	Ge	85J			
2828#	THP46	12			30				2.0	20		200						P	Ge	85J			
2829#	THP47	12			60				2.0	20		200						P	Ge	85J			
2830	2N1709	11.5			75	4.0	60						210M					N-ME	Si	175J		TO 8	
2831	2N1710	11.5			60	3.0	45						210M					N-ME	Si	175J		TO 8	
2832#	2SC22	11.5	.60		75	5.0	50	10∅	.15	20	50	100	110M\$	10		.002	50	N-ME	Si	175J		TO 8	
2833#	2SC23	11.5	.50		75	5.0	50	10∅	.15	20	50	100	110M\$	10		.005	50	N-ME	Si	175J		TO 8	
2834#	2SC24	11.5	.50		100	5.0	70	10∅	.15	20	50	100	110M\$	10		.005	70	N-ME	Si	175J		TO 8	

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## 2. POWER TRANSISTORS

IN ORDER OF DECREASING MAXIMUM THERMAL RESISTANCE, AND TYPE NO.



LINE No.	TYPE No.	Max. Thermal Res. in Free Air (°C/W)	ABSOLUTE MAX. RATINGS @ 25°C					CURRENT GAIN $h_{FE}$ or $h_{fe} - \dagger$					$f_{\alpha b}$ or $f_{\alpha e - \dagger}$ (Kc)	Max. Sat. Res. (ohm)	$t_r$ (μsec)	MAX. COLL. CUR.		DESCRIPTION					
			$I_C$ (amp.)	$I_B$ (amp.)	$V_{CB}$ (volt)	$V_{EB}$ (volt)	$V_{CE}$ (volt)	BIAS			Min.	Center				Max.	$I_{CBO}$ (ma)	@ $V_{CB}$ (volt)	Type P - PNP N - NPN	Mat.	Max. Temp. (°C)	STATUS	Dwg. No.
								$V_{CB}$ (volt)	$I_C$ (amp.)														
2835	PT600	11.5			60	4.0	45	12	1.0 $\emptyset$	35 $\dagger$			210M		.04			N-ME	Si	175J		TO 8	
2836	PT601	11.5			60	4.0	45	12	1.0 $\emptyset$	65 $\dagger$			210M		.04			N-ME	Si	175J		TO 8	
2837	PT612	11.5	3.0		75	5.0	60	28	.35	7.5		75	90				N	Si	175		TO 8		
2838	PT613	11.5	3.0		100	5.0	100	28	.35	7.5		75	90				N	Si	175		TO 8		
2839	2N1072	10	2.0	2.0	75	6.0	75	5.0 $\emptyset$	.75	20	50		95M	2.0		.1m	5.0	N-D	Si	150S	AR	TO38	
2840	2N1172	10	1.5	.25	40	20	30	2.0	.10	30		90	17 $\dagger$	1.0	3.0	.20	40	P-A	Ge	100J		TO37	
2841	2N1218	10 $\emptyset$	2.0		45		45	1.5 $\emptyset$	.100	40		160			1.5	100	45	N	Ge	85J		MD 9	
2842	2N1609	10 $\emptyset$	1.5	.25	80	40	60	2.0	.10	30		75	17 $\dagger$	2.0	3.0	.10	80	P-A	Ge	100J		TO37	
2843	2N1610	10 $\emptyset$	1.5	.25	80	40	60	2.0	.10	50		125	15 $\dagger$	1.2	3.0	.10	80	P-A	Ge	100J		TO37	
2844	2N1611	10 $\emptyset$	1.5	.25	60	20	40	2.0	.10	30		75	17 $\dagger$	2.0	3.0	.10	60	P-A	Ge	100J		TO37	
2845	2N1612	10 $\emptyset$	1.5	.25	60	20	40	2.0	.10	50		125	15 $\dagger$	1.2	3.0	.10	60	P-A	Ge	100J		TO37	
2846	2N1841	10	2.0	2.0		6.0	50	10 $\emptyset$	.50 $\emptyset$	30 $\dagger$	35 $\dagger$	100 $\dagger$	100M	1.0		.1m	10	N-D	Si	150	DR	TO38	
2847#	2SB62	10 $\emptyset$	.50		60	12		1.0	.50	30	60	125	300			.070	12	P-A	Ge	75J		MD10	
2848#	2SB63	10 $\emptyset$	.50		32	12		1.0	.50	30	60	125	300			.070	12	P-A	Ge	75J		MD10	
2849#	NKT301	10	2.0	.20	60	15	60	1.5	1.0	30			1000			.05	1.5	P	Ge	90		TO 8	
2850#	NKT301A	10	2.0	.20	30	15	30	1.5	1.0	30			1000			.05	1.5	P	Ge	90		TO 8	
2851#	NKT302	10	2.0	.20	60	15	60	1.5	.025	50			1000			.05	1.5	P	Ge	90		TO 8	
2852#	NKT302A	10	2.0	.20	30	15	30	1.5	.025	50			1000			.05	1.5	P	Ge	90		TO 8	
2853#	V15/20IP	10	2.0		15	7	7.0	1.5	.02	20	40	100	300			.05	1.5	P-A	Ge	75J			
2854#	V30/20IP	10	2.0		30	15	15	1.5	.02	20	40	100	300			.05	1.5	P-A	Ge	75J			
2855#	V60/20IP	10	2.0		60	30	30	1.5	.02	20	40	100	300			.05	1.5	P-A	Ge	75J			
2856#	2SB19	8.2 $\emptyset$	2.5		16			2.0 $\emptyset$	.05	20	50	250				.10	5.0	P-A	Ge	70			
2857#	2SB20	8.2 $\emptyset$	2.5		32			2.0 $\emptyset$	.05	20	50	250				.10	5.0	P-A	Ge	70			
2858#	2SB21	8.2 $\emptyset$	2.5		60			2.0 $\emptyset$	.05	20	50	250				.10	5.0	P-A	Ge	70			
2859	2N326	8.0	2.0		35		35	1.0	1.0		35		150	1.2		.50	30	N-A	Ge	85J	M	MD 9	
2860	2N1714	7.5 $\emptyset$	1.0		90#	6.0	60	5.0	.20	20		60	16M $\Delta$	10				N-ME	Si	175		RO29	
2861	2N1715	7.5 $\emptyset$	1.0		150#	6.0	100	5.0	.20	20		60	16M $\Delta$	10				N-ME	Si	175		RO29	
2862	2N1716	7.5 $\emptyset$	1.0		90#	6.0	60	5.0	.20	40		120	16M $\Delta$	10				N-ME	Si	175		RO29	
2863	2N1717	7.5 $\emptyset$	1.0		150#	6.0	100	5.0	.20	40		120	16M $\Delta$	10				N-ME	Si	175		RO29	
2864	2N1718	7.5 $\emptyset$	1.0		90#	6.0	60	5.0	.20	20		60	16M $\Delta$	10				N-ME	Si	175		MT13	
2865	2N1719	7.5 $\emptyset$	1.0		150#	6.0	100	5.0	.20	20		60	16M $\Delta$	10				N-ME	Si	175		MT13	
2866	2N1720	7.5 $\emptyset$	1.0		90#	6.0	60	5.0	.20	40		120	16M $\Delta$	10				N-ME	Si	175		MT13	
2867	2N1721	7.5 $\emptyset$	1.0		150#	6.0	100	5.0	.20	40		120	16M $\Delta$	10				N-ME	Si	175		MT13	
2868#	2SB130	7.5 $\emptyset$	1.5		32	10	16	1.0 $\emptyset$	1.5		20					.10	14	P-A	Ge	75J		MD11	
2869#	AUZ11	7.5	2.0 $\dagger$	.20	50	.70	30								6.0	.10	25	P-D	Ge	75J			
2870#	OC30	7.5	1.4	.25	32	10	32	7.0	1.4			35	300			.012	14	P-A	Ge	75J		MD11	
2871#	OD603	7.5	3.0 $\dagger$		40	10	30									.025	6.0	P-A	Ge	75J			
2872#	OD603/50	7.5	1.0 $\dagger$		60	30	50									.025	6.0	P-A	Ge	75J			
2873	TI486	7.5 $\emptyset$	.75		80	6.0	60	5.0 $\emptyset$	.20	20 $\dagger$		80	20000			3.0m	60	N-ME	Si	175J		TO 5	
2874	TI487	7.5 $\emptyset$	.75		80	6.0	60	5.0 $\emptyset$	.20	20 $\dagger$		80	20000			3.0m	60	N-ME	Si	175J		TO 5	
2875	2N122	7.1	.14		120					3.0			100	200		.10	120	N-G	Si	150J		MS 6	
2876#	2SD124	7.1	6.0	3.0	60	10	40	4.0	1.5	10		75	1.0		1.3	25	30	N	Si	175			
2877#	2SD125	7.1	6.0	3.0	100	10	55	4.0	1.5	10		75	1.0		1.3	25	30	N	Si	175			
2878	2N2035	7.0	3.0	1.0	80	6.0	60	4.0	1.5	15		45	1.5	.27	1.8	.025	80	N	Si	200		TO 8	
2879	2N626	6.5	3.0		30	30		5.0 $\emptyset$	1.0	18K		30K	100	1.0				N	GeSi	90J			

## 2. POWER TRANSISTORS

IN ORDER OF DECREASING MAXIMUM THERMAL RESISTANCE, AND TYPE NO.



LINE No.	TYPE No.	Max. Thermal Res. in Free Air (°C/W)	ABSOLUTE MAX. RATINGS @ 25°C					CURRENT GAIN $h_{FE}$ or $h_{fe} - f$					$f_{\alpha b}$ or $f_{\alpha e - f}$ (Kc)	Max. Sat. Res. (ohm)	$t_r$ ( $\mu$ sec)	MAX. COLL. CUR.		DESCRIPTION					
			$I_C$ (amp.)	$I_B$ (amp.)	$V_{CB}$ (volt)	$V_{EB}$ (volt)	$V_{CE}$ (volt)	BIAS			Min.	Center				Max.	$I_{CBO}$ (ma)	@ $V_{CB}$ (volt)	Type P - PNP N - NPN	Mat.	Max. Temp. (°C)	STATUS	Dwg. No.
								$V_{CB}$ (volt)	$I_C$ (amp.)														
2880	2N676	6.5	3.0		30	30	5.0 $\emptyset$	1.0		15K		100	1.0				P	GeSi	90J				
2881	2N1019	6.5	3.0		30	30	5.0 $\emptyset$	1.0		15K		100	1.0				P-H	GeSi	90J	T			
2882	2N1020	6.5	3.0		30	30	5.0 $\emptyset$	1.0		15K		100	1.0				N-H	GeSi	90J	T			
2883#	2SB143P	6.0	1.0		30	12	30	1.5	1.0	23	37	59	7.0				P-A	Ge	85J				
2884#	2SB144P	6.0	1.0		30	12	30	1.5	1.0	45	75	119	7.0				P-A	Ge	85J				
2885	2N1978	5.8 $\emptyset$			60	5.0	5.0 $\emptyset$	.50	20			60Mc $\delta$	1.5	.04 $\emptyset$			N-PL	Si	200J	T	MT 8		
2886	EM500	5.6	3.0	.001	30		5.0	1.0	26K	30K	50K	7.0	1.0		30	30	N	GeSi	65A	T			
2887	EM600	5.6	3.0	.001	30		5.0	1.0	26K	30K	50K	7.0	1.0		30	30	P	GeSi	65A	T			
2888	2N307	5.0	1.0		35		1.5	.50	21	30					15	35	P-A	Ge	75J		MD 9		
2889	2N1647	5.0	3.0	.50	80	6.0	60	10	.50	15	25	45	10000	3.0	1.4	.10	60	N-DME	Si	150		MT11	
2890	2N1648	5.0	3.0	.50	120	6.0	80	10	.50	15	25	45	10000	3.0	1.4	.10	60	N-DME	Si	150		MT11	
2891	2N1649	5.0	3.0	.50	80	6.0	60	10	.50	30	45	90	10000	3.0	1.4	.10	60	N-DME	Si	150		MT11	
2892	2N1650	5.0	3.0	.50	120	6.0	80	10	.50	30	45	90	10000	3.0	1.4	.10	60	N-DME	Si	150		MT11	
2893	2N1658	5.0 $\emptyset$	1.0 $\emptyset$	.50	80	40	50	2.0 $\emptyset$	.20	30	50	90	500 $\delta$ $\Delta$	.25	5.0	.50	80	P-A	Ge	100J		MT 9	
2894	2N1659	5.0 $\emptyset$	1.0 $\emptyset$	.50	60	40	40	2.0 $\emptyset$	.20	30	50	90	500 $\delta$ $\Delta$	.25	5.0	.50	60	P-A	Ge	100J		MT 9	
2895	2N2018	5.0	2.0	.50	150	6.0	125	10	.50	20	30	60	10	6.0		100	100	N	Si	175		MT11	
2896	2N2019	5.0	2.0	.50	200	6.0	140	10	.50	20	30	60	10	6.0		100	100	N	Si	175		MT11	
2897	2N2020	5.0	2.0	.50	150	6.0	125	10	.50	40	60	100	10	6.0		100	100	N	Si	175		MT11	
2898	2N2021	5.0	2.0	.50	200	6.0	140	10	.50	40	60	100	10	6.0		100	100	N	Si	175		MT11	
2899#	2SB83	5.0	3.0		40	10	32	1.5	.70		70		.40			5.0	40	P	Ge	85			
2900#	2SB84	5.0	3.0		60	10	32	1.5	.70		70		.40			5.0	60	P	Ge	85			
2901#	2SB107	5.0 $\emptyset$	2.0		30	15		2.0 $\emptyset$	1.0	20	70	120	400			.50	30	P-A	Ge	75J		TO 3	
2901a#	2SB238	5.0	1.0		40		30	1.0 $\emptyset$	.30	40	60	80	500			.10	40	P-A	Ge	90J		TO 8	
2902#	2SB239	5.0	1.0		80	30	45	1.0 $\emptyset$	.30	40	60	80	500	.70		.10	80	P-A	Ge	90J		TO 8	
2902a#	2SB239A	5.0	1.0		100	30	50	1.0 $\emptyset$	.30	40	60	80	500	.70		.10	80	P-A	Ge	90J		TO 8	
2903#	2SB240	5.0	1.0		40		30	1.0 $\emptyset$	.30	40	60	80	500			.20	40	P-A	Ge	90J		TO 8	
2904#	2SB240A	5.0	1.0		60		40	1.0 $\emptyset$	.30	40	60	80	500			.20	60	P-A	Ge	90J		TO 8	
2905#	2SB241	5.0	1.0		80	30	45	1.0 $\emptyset$	.30	40	60	80	500	.70		.20	80	P-A	Ge	90J		TO 8	
2906#	2SB241A	5.0	1.0		100	30	50	1.0 $\emptyset$	.30	40	60	80	500	.70		.20	100	P-A	Ge	90J		TO 8	
2907#	2SB242	5.0	1.0		30		20	1.0 $\emptyset$	.30	20	40	60	500			1.0	30	P-A	Ge	90J		TO 8	
2908#	2SB242A	5.0	1.0		60		30	1.0 $\emptyset$	.30	20	40	60	500			1.0	60	P-A	Ge	90J		TO 8	
2909#	2SB243	5.0	1.0		30		20	1.0 $\emptyset$	.30	40	60	150	500			1.0	30	P-A	Ge	90J		TO 8	
2910#	2SB243A	5.0	1.0		60		30	1.0 $\emptyset$	.30	40	60	150	500			1.0	60	P-A	Ge	90J		TO 8	
2911#	2SB244	5.0	1.0		80	30	40	1.0 $\emptyset$	.30	20	40	60	500	1.0		1.0	80	P-A	Ge	90J		TO 8	
2912#	2SB245	5.0	1.0		80	30	40	1.0 $\emptyset$	.30	40	60	150	500			1.0	80	P-A	Ge	90J		TO 8	
2913	2N2036	4.5	1.5		120	6.0		4.0	.20 $\Delta$		50		2000			.10	120	N	Si	200		MT 5	
2914	2N1047	4.4 $\emptyset$	.50			10	80	10 $\emptyset$	.50	12		36	15			.015	30	N-D	Si	200J		MT 5	
2915	2N1047A	4.4 $\emptyset$	.50					10 $\emptyset$	.50	12 $\dagger$		36						N-ME	Si	200J	N		
2916	2N1047B	4.4	.75		80	10	80	10 $\emptyset$	.50	12		36	3.0			.015	30	N-DME	Si	200J		TO18	
2917	2N1048	4.4 $\emptyset$	.50			10	120	10 $\emptyset$	.50	12		36	15			.015	30	N-D	Si	200J		MT 5	
2918	2N1048A	4.4 $\emptyset$	.50					10 $\emptyset$	.50	12 $\dagger$		36						N-ME	Si	200J	N		
2919	2N1048B	4.4	.75		120	10	120	10 $\emptyset$	.50	12		36	3.0			.015	30	N-DME	Si	200J		TO18	
2920	2N1049	4.4 $\emptyset$	.50			10	80	10 $\emptyset$	.50	30		90	15			.015	30	N-D	Si	200J		MT 5	
2921	2N1049A	4.4 $\emptyset$	.50					10 $\emptyset$	.50	30 $\dagger$		90						N-ME	Si	200J	N		
2922	2N1049B	4.4	.75		80	10	80	10 $\emptyset$	.50	30		90	3.0			.015	30	N-DME	Si	200J		TO18	

## 2. POWER TRANSISTORS

IN ORDER OF DECREASING MAXIMUM THERMAL RESISTANCE, AND TYPE NO.



LINE No.	TYPE No.	Max. Thermal Res. in Free Air (°C/W)	ABSOLUTE MAX. RATINGS @ 25°C					CURRENT GAIN $h_{FE}$ or $h_{fe} - f$					$f_{\alpha b}$ or $f_{\alpha e - f}$ (Kc)	Max. Sat. Res. (ohm)	$t_r$ ( $\mu$ sec)	MAX. COLL. CUR.		DESCRIPTION				
			$I_C$ (amp.)	$I_B$ (amp.)	$V_{CB}$ (volt)	$V_{EB}$ (volt)	$V_{CE}$ (volt)	BIAS		Min.	Center	Max.				$I_{CBO}$ (ma)	@ $V_{CB}$ (volt)	Type P - PNP N - NPN	Mat.	Max. Temp. (°C)	STATUS	Dwg. No.
								$V_{CB}$ (volt)	$I_C$ (amp.)													
2923	2N1050	4.4	.50			10	120	10	.50	30		90		15		.015	30	N-D	Si	200J		MT 5
2924	2N1050A	4.4	.50					10	.50	30†		90						N-ME	Si	200J	N	
2925	2N1050B	4.4	.75		120	10	120	10	.50	30		90		3.0		.015	30	N-DME	Si	200J		TO18
2926	STC1311	4.4	1.5		80		60	4.0	.50	12†		36		5.0				N	Si	200J		MT 5
2927	STC1312	4.4	1.5		120		60	4.0	.50	12†		36		5.0				N	Si	200J		MT 5
2928	STC1313	4.4	1.5		80		60	4.0	.50	30†		90		5.0				N	Si	200J		MT 5
2929	STC1314	4.4	1.5		120		60	4.0	.50	30†		90		5.0				N	Si	200J		MT 5
2930	STC1331	4.4	1.5		80		60	4.0	.50	75†		150		5.0				N	Si	200J		MT 5
2931	STC1332	4.4	1.5		120		60	4.0	.50	75†		150		5.0				N	Si	200J		MT 5
2932	2N1690	4.37	.75		80	10	80	10	.50	20		60		15		15u	30	N-D	Si	200		MT 5
2933	2N1691	4.37	.75		120	10	120	10	.50	20		60		15		15u	30	N-D	Si	200		MT 5
2934	PADT50	4.2	.75	.05	75	1.5	75	10	.60				60000	.20		30	50	P	Ge	75		TO 3
2935▼#	GFT4308/40	4.0	4.0	1.0	40	15	40	2.0	.50	30	50	70	10	.40	20	.50	40	P-A	Ge	75J		MD12
2936▼#	GFT4308/60	4.0	4.0	1.0	60	15	60	2.0	.50	30	50	70	10	.40	20	.50	60	P-A	Ge	75J		MD12
2937▼#	GFT4308/80	4.0	4.0	1.0	80	15	80	2.0	.50	30	50	70	10	.40	20	.50	80	P-A	Ge	75J		MD12
2938▼#	GFT4608/40	4.0	4.0	1.0	40	15	40	2.0	.50	60	80	100	12	.40	20	.50	40	P-A	Ge	75J		MD12
2939▼#	GFT4608/60	4.0	4.0	1.0	60	15	60	2.0	.50	60	80	100	12	.40	20	.50	60	P-A	Ge	75J		MD12
2940▼#	GFT4608/80	4.0	4.0	1.0	80	15	80	2.0	.50	60	80	100	12	.40	20	.50	80	P-A	Ge	75J		MD12
2941#	TF80/30	4.0	2.5		32			6.0	.30		45					.10	5.0	P-A	Ge	75J		
2942#	TF80/60	4.0	2.5		64			6.0	.30		45					.10	5.0	P-A	Ge	75J		
2943#	TF80/80	4.0	3.0		80	20	80	1.3	1.5	15	30					.23	60	P	Ge	75J		
2944	2N1208	3.76	5.0		60	10	60	12	2.0	15			12000	2.5	.25	10	60	N-D	Si	200		
2945	2N1209	3.76	5.0		45	5.0	45	12	2.0	20			12000	2.5	.25	20	45	N-D	Si	200		
2946	2N1212	3.76	3.0		60			12	2.0	15			10000	4.0	.25	10	60	N-D	Si	200		
2947#	GFT3008/20	3.75	3.0		20	10	15	2.0	.50	25	33	50	350	.40	20	.50	20	P-A	Ge	75J		MD12
2948#	GFT3008/40	3.75	3.0		40	10	30	2.0	.50	25	33	50	350	.40	20	.50	40	P-A	Ge	75J		MD12
2949#	GFT3008/60	3.75	3.0		60	10	40	2.0	.50	25	33	50	350	.40	20	.50	60	P-A	Ge	75J		MD12
2950#	GFT3408/20	3.75	3.0		20	10	15	2.0	.50	40	60	80	400	.40	20	.50	20	P-A	Ge	75J		MD12
2951#	GFT3408/40	3.75	3.0		40	10	30	2.0	.50	40	60	80	400	.40	20	.50	40	P-A	Ge	75J		MD12
2952#	GFT3408/60	3.75	3.0		60	10	40	2.0	.50	40	60	80	400	.40	20	.50	60	P-A	Ge	75J		MD12
2953#	GTL3	3.75	3.0		20	10	15	2.0	.50	25	33	50	250			5.0	20	P-A	Ge	75J		
2954	TLX2150	3.75			120		120	10	.50	30		90							Si		D	
2955	2N1038	3.5	3.0	1.0	40	20	30	.50	1.0	20	33	60	10†	.25		.125	20	P-A	Ge	100J		RO28
2956	2N1039	3.5	3.0	1.0	60	20	40	.50	1.0	20	33	60	10†	.25		.125	30	P-A	Ge	100J	N	RO28
2957	2N1040	3.5	3.0	1.0	80	20	50	.50	1.0	20	33	60	10†	.25		.125	40	P-A	Ge	100J		RO28
2958	2N1041	3.5	3.0	1.0	100	20	60	.50	1.0	20	33	60	10†	.25		.125	50	P-A	Ge	100J	N	RO28
2959	2N1042	3.5	3.0	1.0	40	20	30	1.0	3.0	20	25	60	10†	.25		.125	20	P-A	Ge	100J	A	MT 6
2960	2N1043	3.5	3.0	1.0	60	20	40	1.0	3.0	20	25	60	10†	.25		.125	30	P-A	Ge	100J	A	MT 6
2961	2N1044	3.5	3.0	1.0	80	20	50	1.0	3.0	20	25	60	10†	.25		.125	40	P-A	Ge	100J	A	MT 6
2962	2N1045	3.5	3.0	1.0	100	20	60	1.0	3.0	20	25	60	10†	.25		.125	50	P-A	Ge	100J	A	MT 6
2963	2N155	3.0	3.0	.50	30	15	30	2.0	.50		32		100	.75		1.0	30	P-A	Ge	85J		TO 3
2964	2N156	3.0	3.0	.50	30	15	30	2.0	.50	21	32		100	.75		1.0	30	P-A	Ge	85J		MM 3
2965	2N158	3.0	3.0	.50	60	30	60	2.0	.50	21			100	.75		1.0	60	P-A	Ge	85J	M	MM 3
2966	2N158A	3.0	3.0	.50	80	30	60	2.0	.50	21			150	.75		1.0	80	P-A	Ge	95J		MM 3
2967	2N242	3.0	2.0		45	45	45					40	300	.50		5.0	40	P	Ge	100J		MD 9

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IN ORDER OF DECREASING MAXIMUM THERMAL RESISTANCE, AND TYPE NO.



LINE No.	TYPE No.	Max. Thermal Res. in Free Air (°C/W)	ABSOLUTE MAX. RATINGS @ 25°C					CURRENT GAIN $h_{FE}$ or $h_{fe} - f$					$f_{\alpha b}$ or $f_{\alpha e - f}$ (Kc)	Max. Sat. Res. (ohm)	$t_r$ ( $\mu$ sec)	MAX. COLL. CUR.		DESCRIPTION				
			$I_C$ (amp.)	$I_B$ (amp.)	$V_{CB}$ (volt)	$V_{EB}$ (volt)	$V_{CE}$ (volt)	BIAS		Min.	Center	Max.				$I_{CBO}$ (ma)	@ $V_{CB}$ (volt)	Type P - PNP N - NPN	Mat.	Max. Temp. (°C)	STATUS	Dwg. No.
								$V_{CB}$ (volt)	$I_C$ (amp.)													
2968	2N255	3.0	3.0	.50	15	15	15	2.0	.50		30	100				1.0	15	P-A	Ge	85J		TO 3
2969	2N255A	3.0	3.0	.50	15	15	15	2.0	.50		30		125			5.0	15	P-A	Ge	85J		TO 3
2970	2N256	3.0	3.0	.50	30	30	30	2.0	.50		30	100				1.0	30	P-A	Ge	85J		TO 3
2971	2N256A	3.0	3.0	.50	30	15	25	2.0	.50		30					5.0	25	P-A	Ge	85J		TO 3
2972	2N296	3.0	2.0				60	1.5	1.0		30							P-A	Ge	85J		MD 9
2973	2N307A	3.0	2.0		35		35	1.5	.50	25	35			.80		5.0	35	P-A	Ge	75J		TO 3
2974	2N1069	3.0	4.0	1.3	60	9	45	4.0	1.5	10	20	50	1200	2.0	1.8	1.0	60	N-D	Si	175B		TO 3
2975	2N1070	3.0	4.0	1.3	60	9	45	4.0	1.5	10	20	50	1200	.67	1.8	1.0	60	N-D	Si	175B		TO 3
2976	2N1292	3.0	3.0	.50	35	15	30	2.0	.50	30			150	1.0		1.0	35	N-A	Ge	85J		TO 3
2977	2N1294	3.0	3.0	.50	60	15	45	2.0	.50	30			150	1.0		2.0	60	N-A	Ge	85J		TO 3
2978	2N1295	3.0	3.0	.50	80	15	80	2.0	.50	40			150	1.0		2.0	80	P-A	Ge	85J		TO 3
2979	2N1296	3.0	3.0	.50	80	15	60	2.0	.50	30			150	1.0		3.0	80	N-A	Ge	85J		TO 3
2980	2N1321	3.0	3.0	.50	35	15	30	2.0	.50	30	50		150	1.0		1.0	35	N-A	Ge	85J		TO10
2981	2N1323	3.0	3.0	.50	60	15	45	2.0	.50	30	50		150	1.0		2.0	60	N-A	Ge	85J		TO10
2982	2N1325	3.0	3.0	.50	80	15	60	2.0	.50	30	50		150	1.0		3.0	80	N-A	Ge	85J		TO10
2983	2N1437	3.0	3.0	.50	100	15	80	2.0	.50	20			150	.75		2.0	100	P-A	Ge	95J		TO13
2984	2N1470	3.0	1.0		60	3.0		5.0	1.0		15†		1000			5.0	60	N-D	Si	200A		TO 3
2985	2N1504/10	3.0	3.0	.50	80	30	60	2.0	.50	21			150	.75		1.0	80	P-A	Ge	95J		TO10
2986	2N1657	3.0	2.0		60	3.0		5.0	1.0	15			1000			5.0	60	N-D	Si	200J	T	MS 3
2987	2N2038	3.0	.50		45	4.0	45	6.0	.20	12	24	36		30		.015	30	N	Si	200J		
2988	2N2039	3.0	.50		75	4.0	75	6.0	.20	12	24	36		30		.015	30	N	Si	200J		
2989	2N2040	3.0	.50		45	4.0	45	6.0	.20	30	60	90		30		.015	30	N	Si	200J		
2990	2N2041	3.0	.50		75	4.0	75	6.0	.20	30	60	90		30		.015	30	N	Si	200J		
2991#	AUY10	3.0	.75	.05	75								60		.20			P-AD	Ge	75		TO 3
2992	CK311	3.0	3.0	.50	80	30	80	2.0	.50	20	40		100	.75		3.0	80	P	Ge	85J		MM 3
2993	CK312	3.0	3.0	.50	100	30	100	2.0	.50	20	40		100	.75		3.0	100	P	Ge	85J		MM 3
2994	CK313	3.0	3.0	.50	120	30	120	2.0	.50	20	36		100	.75		3.0	120	P	Ge	85J		MM 3
2995	CK314	3.0	3.0	.50	150	30	125	2.0	.50	20	36		100	.75		3.0	150	P	Ge	85J		MM 3
2996	CK315	3.0	3.0	.50	200	30		2.0	.50	21			100	.75		5.0	200	P-A	Ge	85J		MM 3
2997#	GTL1	3.0	3.0		30			2.0			15					30	30	P-A	Ge	85J		
2998#	OC22	3.0	1.0	.20	47	12	32	2.0	1.0	50	150		2500			.10	10	P-AD	Ge	75J		TO 3
2999#	OC23	3.0	1.0	.20	55	12	40	2.0	1.0	50	150		2500			.10	10	P-AD	Ge	75J		TO 3
3000#	OC24	3.0	1.0	.20	47	12	32	2.0	1.0	50	150		2500			.10	10	P-AD	Ge	75J		TO 3
3001	ST402	3.0			60			2.0			15							N-D	Si	175A		MS 2
3002	ST403	3.0			45			2.0			15							N-D	Si	175A		MS 2
3003	TI366	3.0	3.0		60		45	1.0	1.0	50				.10		.10	2.0	P-A	Ge		T	TO 3
3004	TI367	3.0	3.0		60		40	1.0	.50	30				.15		.20	2.0	P-A	Ge		T	TO 3
3005	TI368	3.0	3.0		45		25	1.0	1.0	50				.10		.10	2.0	P-A	Ge		T	TO 3
3006	TI369	3.0	3.0		45		23	1.0	.50	30				.15		.20	2.0	P-A	Ge		T	TO 3
3007	TI370	3.0	3.0		30		15	1.0	.50	30				.15		.20	2.0	P-A	Ge		T	TO 3
3008#	2G240	2.66	3.0		80	1.0		2.0	.50	40	70		15000	1.3	.70	1.0	40	P-D	Ge	65J		MD 6
3009	2N1210	2.5	5.0		60	8.0	60	12	2.0		25		15		1.2	10	60	N-D	Si	175S		
3010	2N1211	2.5	5.0		80	8.0	80	12	2.0		25		15		1.2	10	80	N-D	Si	175S		
3011	2N1250	2.5		60				2.0			15							N-D	Si	175A		
3012	2N1487	2.5			60		40	1.5		10			1000					N-ME	Si			TO 3

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IN ORDER OF DECREASING MAXIMUM THERMAL RESISTANCE, AND TYPE NO.



LINE No.	TYPE No.	Max. Thermal Res. in Free Air (°C/W)	ABSOLUTE MAX. RATINGS @ 25°C					CURRENT GAIN $h_{FE}$ or $h_{fe} - \dagger$					$f_{\alpha b}$ or $f_{\alpha e} - \dagger$ (Kc)	Max. Sat. Res. (ohm)	$t_r$ ( $\mu$ sec)	MAX. COLL. CUR.		DESCRIPTION					
			$I_C$ (amp.)	$I_B$ (amp.)	$V_{CB}$ (volt)	$V_{EB}$ (volt)	$V_{CE}$ (volt)	BIAS		Min.	Center	Max.				$I_{CBO}$ (ma)	@ $V_{CB}$ (volt)	Type	Mat.	Max. Temp. (°C)	STATUS	Dwg. No.	
								$V_{CB}$ (volt)	$I_C$ (amp.)														
3013	2N1488	2.5			100		55		1.5	10			1000					N-ME	Si				TO 3
3014	2N1489	2.5			60		40		1.5	25			1000					N-ME	Si				TO 3
3015	2N1490	2.5			100		55		1.5	25			1000					N-ME	Si				TO 3
3016	2N1511	2.5	8.0	3.0	60	10	60	4.0	1.5	10		50	1000	2.0	1.0	25	30	N	Ge	175A			TO36
3017	2N1512	2.5	8.0	3.0	100	10	100	4.0	1.5	10		50	1000	2.0	1.0	25	30	N	Ge	175A			TO36
3018	2N1513	2.5	8.0	3.0	60	10	60	4.0	1.5	25		75	1000	.67	1.0	25	30	N	Ge	175A			TO36
3019	2N1514	2.5	8.0	3.0	100	10	100	4.0	1.5	25		75	1000	.67	1.0	25	30	N	Ge	175A			TO36
3020	2N1616	2.5	5.0		60	8.0	60	12 $\emptyset$	2.0		25		15		1.2	10	60	N-D	Si	175S			
3021	2N1617	2.5	5.0		80	8.0	80	12 $\emptyset$	2.0		25		15		1.2	10	80	N-D	Si	175S			
3022	2N1618	2.5	5.0		100	8.0	100	12 $\emptyset$	2.0		25		15		1.2	10	100	N-D	Si	175S			
3023	2N1619	2.5						1.0	2.0		35		15					N-D	Si				
3024	2N1620	2.5	5.0		100	8.0	100	12 $\emptyset$	2.0		25		15		1.2	10	100	N-D	Si	175S			
3025	2N1755	2.5	3.0	2.0	40	30	40	2.0 $\emptyset$	.50	30	50	75	15 $\dagger$	.23	4.0	3.0	40	P-A	Ge	95J			MS 7
3026	2N1756	2.5	3.0	2.0	60	35	55	2.0 $\emptyset$	.50	30	50	75	15 $\dagger$	.23	4.0	3.0	60	P-A	Ge	95J			MS 7
3027	2N1757	2.5	3.0	2.0	80	35	70	2.0 $\emptyset$	.50	30	50	75	15 $\dagger$	.23	4.0	3.0	80	P-A	Ge	95J			MS 7
3028	2N1758	2.5	3.0	2.0	100	35	80	2.0 $\emptyset$	.50	30	50	75	15 $\dagger$	.23	4.0	3.0	100	P-A	Ge	95J			MS 7
3029	2N1759	2.5	3.0	2.0	40	35	40	2.0 $\emptyset$	.50	60	100	150	15 $\dagger$	.23	3.5	3.0	40	P-A	Ge	95J			MS 7
3030	2N1760	2.5	3.0	2.0	60	35	55	2.0 $\emptyset$	.50	60	100	150	15 $\dagger$	.23	3.5	3.0	60	P-A	Ge	95J			MS 7
3031	2N1761	2.5	3.0	2.0	80	35	70	2.0 $\emptyset$	.50	60	100	150	15 $\dagger$	.23	5.0	3.0	80	P-A	Ge	95J			MS 7
3032	2N1762	2.5	3.0	2.0	100	35	80	2.0 $\emptyset$	.50	60	100	150	15 $\dagger$	.23	5.0	3.0	100	P-A	Ge	95J			MS 7
3033	2N1886	2.5	5.0		60	6.0	60	10 $\emptyset$	.50	20	40	80	10	5.0	1.0	.35	60	N-D	Si	175A			MT11
3034	2N2032	2.5			45				2.0		20							N-D	Si	175A			MS 2
3035	2N2067	2.5	3.0	2.0	40	20	40	14 $\emptyset$	.50	20			7.0 $\dagger$				3.0	40	P-A	Ge	95J		MS 7
3036	2N2067B	2.5	3.0	2.0	40	20	40	14 $\emptyset$	.50	25			7.0 $\dagger$				3.0	40	P-A	Ge	95J		MS 7
3037	2N2067G	2.5	3.0	2.0	40	20	40	14 $\emptyset$	.50	25			7.0 $\dagger$				3.0	40	P-A	Ge	95J		MS 7
3038	2N2067-O	2.5	3.0	2.0	40	20	40	14 $\emptyset$	.50	20			7.0 $\dagger$				3.0	40	P-A	Ge	95J		MS 7
3039	2N2067W	2.5	3.0	2.0	40	20	40	14 $\emptyset$	.50	33			7.0 $\dagger$				3.0	40	P-A	Ge	95J		MS 7
3040	2N2068	2.5	3.0	2.0	80	40	70	14 $\emptyset$	.50	20			7.0 $\dagger$				3.0	80	P-A	Ge	95J		MS 7
3041	2N2068G	2.5	3.0	2.0	80	40	70	14 $\emptyset$	.50	25			7.0 $\dagger$				3.0	80	P-A	Ge	95J		MS 7
3042	2N2068-O	2.5	3.0	2.0	80	40	70	14 $\emptyset$	.50	20			7.0 $\dagger$				3.0	80	P-A	Ge	95J		MS 7
3043#	2SB25	2.5 $\emptyset$	1.5		60	12		1.5	1.0	34	60	110	250				2.0	60	P-A	Ge	75J		TO 3
3044#	2SB26	2.5 $\emptyset$	1.5		25	12		1.5	1.0	34	60	110	250				16	12	P-A	Ge	75J		TO 3
3045#	2SB107A	2.5 $\emptyset$	2.0		60	15		2.0 $\emptyset$	1.0	20	70	120	400				.50	60	P-A	Ge	75J		TO 3
3046#	2SB122	2.5 $\emptyset$	1.5		80	40		1.5	1.0	34	60	110	250	.15			2.0	80	P-A	Ge	75J		TO 3
3047#	2SB215	2.5	3.0		100	20		1.5	1.0	20	70	200		.10			.50	5.0	P-A	Ge	75J		TO 3
3048#	2SB216	2.5 $\emptyset$	1.5		60	10		1.5 $\emptyset$	.20	25	70	200					.50	5.0	P-A	Ge	75J		TO 3
3049#	2SB217	2.5 $\emptyset$	1.5		20	10		1.5 $\emptyset$	.20	25	70	200					.50	5.0	P-A	Ge	75J		TO 3
3050	CST1789	2.5	3.0	2.0	120	35	95	2.0 $\emptyset$	.50	30	50	75	10 $\dagger$				3.0	90	P-A	Ge	95J		MS 7
3051	STC1035	2.5	7.5		30		30	4.0 $\emptyset$	2.0	10 $\dagger$				.75					N	Si	200J		TO 3
3052	STC1035A	2.5	7.5		60		60	4.0 $\emptyset$	2.0	10 $\dagger$				.75					N	Si	200J		TO 3
3053	STC1036	2.5	7.5		30		30	4.0 $\emptyset$	5.0	10 $\dagger$				.50					N	Si	200J		TO 3
3054	STC1036A	2.5	7.5		60		60	4.0 $\emptyset$	5.0	10 $\dagger$				.50					N	Si	200J		TO 3
3054a#	TK400A	2.5 $\emptyset$	10	2.0	30	12	15	1.5 $\emptyset$	10	7.5			250				.10	9.0	P-A	Ge	85		TO 3
3055#	TK401A	2.5 $\emptyset$	10	2.0	80	12	40	1.5 $\emptyset$	10	7.5			250				.10	9.0	P-A	Ge	85		TO 3
3056#	TK402A	2.5 $\emptyset$	10	2.0	80	12	40	1.5 $\emptyset$	10	20			250				.10	9.0	P-A	Ge	85		TO 3



## 2. POWER TRANSISTORS

IN ORDER OF DECREASING MAXIMUM THERMAL RESISTANCE, AND TYPE NO.



LINE No.	TYPE No.	Max. Thermal Res. in Free Air (°C/W)	ABSOLUTE MAX. RATINGS @ 25°C					CURRENT GAIN $h_{FE}$ or $h_{fe} - f$					$f_{\alpha b}$ or $f_{\alpha e - f}$ (Kc)	Max. Sat. Res. (ohm)	$t_r$ ( $\mu$ sec)	MAX. COLL. CUR.		DESCRIPTION					
			$I_C$ (amp.)	$I_B$ (amp.)	$V_{CB}$ (volt)	$V_{EB}$ (volt)	$V_{CE}$ (volt)	BIAS			Min.	Center				Max.	$I_{CBO}$ (ma)	@ $V_{CB}$ (volt)	Type P - PNP N - NPN	Mat.	Max. Temp. (°C)	STATUS	Dwg. No.
								$V_{CB}$ (volt)	$I_C$ (amp.)														
3057#	TK403A	2.50	7.5	2.0	100	12	60	1.50	7.5	7.5		250			.10	9.0	P-A	Ge	85		TO 3		
3058▼#	ZT1487	2.34	6.0	3.0	60	10	60	4.0	1.5	15		45		1.0	25	30	N-ME	Si	200		TO 3		
3059▼#	ZT1488	2.34	6.0	3.0	100	10	100	4.0	1.5	15		45		1.0	25	30	N-ME	Si	200		TO 3		
3060▼#	ZT1489	2.34	6.0	3.0	60	10	60	4.0	1.5	25		75		1.0	25	30	N-ME	Si	200		TO 3		
3061▼#	ZT1490	2.34	6.0	3.0	100	10	100	4.0	1.5	25		75		1.0	25	30	N-ME	Si	200		TO 3		
3062◆#	ZT1511	2.34	6.0	3.0	60	10	60	4.0	1.5	15		45		1.0	25	30	N-ME	Si	200		TO36		
3063◆#	ZT1512	2.34	6.0	3.0	100	10	100	4.0	1.5	15		45		1.0	25	30	N-ME	Si	200		TO36		
3064◆#	ZT1513	2.34	6.0	3.0	60	10	60	4.0	1.5	25		75		1.0	25	30	N-ME	Si	200		TO36		
3065◆#	ZT1514	2.34	6.0	3.0	100	10	100	4.0	1.5	25		75		1.0	25	30	N-ME	Si	200		TO36		
3066	2N1702	2.33§	5.0	2.5	60	6.0	40	4.0	8.0	15		60	1.0	4.0	200	300	N	Si	200		TO 3		
3067	2N1703	2.33§	5.0	2.5	60	6.0	40	4.0	8.0	15		60	1.0	4.0	200	300	N	Si	200		TO36		
3068	F104	2.33	4.0		30	.50		150	1.0	10		50	1000	5.0			N-DA	Si			TO 3		
3069	F105	2.33	4.0		60	.50		150	1.0	10		50	1000	5.0			N-DA	Si			TO 3		
3070	F106	2.33	4.0		100	.50		150	1.0	10		50	1000	5.0			N-DA	Si			TO 3		
3071	F107	2.33	4.0		30	.50		150	1.0	10		50	1500	5.0			N-DA	Si			TO35		
3072	F115	2.33	7.5		60	.50		150	2.0	10		50	1000	5.0			N-DA	Si			TO 3		
3073	F116	2.33	7.5		60	.50		150	2.0	10		50	1000	1.5			N-DA	Si			TO 3		
3074	F117	2.33	4.0		55	.50	55	15	1.0	10			1000	5.0			N-ME	Si	200S		TO 3		
3075	F117A	2.33	4.0		55	.50	55	15	1.0	10			1000	.80			N-ME	Si	200S		TO 3		
3076	F118	2.33	4.0		45	.50	45	15	1.0	10			1000	5.0			N-ME	Si	200S		TO 3		
3077	F118A	2.33	4.0		45	.50	45	15	1.0	10			1000	.80			N-ME	Si	200S		TO 3		
3078	F119	2.33	4.0		35	.50	35	15	1.0	10			1000	5.0			N-ME	Si	200S		TO 3		
3079	F119A	2.33	4.0		35	.50	35	15	1.0	10			1000	.80			N-ME	Si	200S		TO 3		
3080	F120	2.33	4.0		25	.50	25	15	1.0	10			1000	5.0			N-ME	Si	200S		TO 3		
3081	F120A	2.33	4.0		25	.50	25	15	1.0	10			1000	.80			N-ME	Si	200S		TO 3		
3082	2N538	2.20	3.50	.50	90	28	60	2.00	2.0	20	30	50	200§Δ	.30	2.0	80	P-A	Ge	100J		TO10		
3083	2N538A	2.20	Same as 2N538 with added spec.: Gp- 17 to 51mho, and HIE- 24 to 48ohm.																		TO10		
3084	2N539	2.2	3.50	.50	90	28	55	2.00	2.0	30	43	75	200§Δ	.30	2.0	80	P-A	Ge	100J	N	TO10		
3085	2N539A	2.20	Same as 2N539 with added spec.: Gp- 35 to 105 mho, and HIE- 27 to 54 ohm.																		TO10		
3086	2N540	2.20	3.50	.50	90	28	55	2.00	2.0	45	64	113	200§Δ	.30	2.0	80	P-A	Ge	100J		TO10		
3087	2N540A	2.20	Same as 2N540 with added spec.: Gp- 71 - 213mho, and HIE - 30 - 60 ohm.																		TO10		
3088	2N1202	2.20	3.50	.50	90	28	60	2.00	.50	40	86	120	200§Δ	.60	2.0	80	P-A	Ge	100J		TO10		
3089	2N1203	2.20	3.50	.50	130	28	70	2.00	2.0	25	37	75	200§Δ	.30	2.0	120	P-A	Ge	100J		TO10		
3090	2N1261	2.20	3.50	.50	90	28	45	2.00	2.0	20	30	50	200§Δ	.30	2.0	80	P-A	Ge	100J		TO10		
3091	2N1262	2.20	3.50	.50	90	28	45	2.00	2.0	30	43	75	200§Δ	.30	2.0	80	P-A	Ge	100J		TO10		
3092	2N1263	2.20	3.50	.50	90	28	45	2.00	2.0	45	64	113	200§Δ	.30	2.0	80	P-A	Ge	100J		TO10		
3093	2N1501	2.20	3.50	.50	70	28	40	2.00	2.0	25	45	100	200§Δ	.30	2.0	60	P-A	Ge	100J		TO10		
3094	2N1502	2.20	3.50	.50	60	28	40	2.00	2.0	25	45	100	200§Δ	.30	2.0	40	P-A	Ge	100J		TO10		
3095	B177	2.2	3.0				30		.50		150						P	Ge	90J		TO 3		
3096	B178	2.2	3.0				30		.50		40						P	Ge	90J		TO 3		
3097	B179	2.2	3.0				40		.50		25						P	Ge	90J		TO 3		
3098	2N389	2.1	2.0			10	60	150	1.0	12		60		5.0			N-D	Si	200J	N	MS 3		
3099	2N389A	2.1	3.0		60	10		15	1.0Δ		30		2000	.75	10	60	N-D	Si	200		MS 3		
3100	2N424A	2.1	3.0		80	10		15	1.0Δ		30		2000	.75	10	80	N-D	Si	200		MS 3		
3101	2N1616A	2.1	5.0	2.0	60	10	60	4.0	5.0	10	20		1.5	.50	1.8	20	60	N	Si	200		MT10	

## 2. POWER TRANSISTORS

IN ORDER OF DECREASING MAXIMUM THERMAL RESISTANCE, AND TYPE NO.



LINE No.	TYPE No.	Max. Thermal Res. in Free Air (°C/W)	ABSOLUTE MAX. RATINGS @ 25°C					CURRENT GAIN $h_{FE}$ or $h_{fe} - \dagger$					$f_{\alpha b}$ or $f_{\alpha e - \dagger}$ (Kc)	Max. Sat. Res. (ohm)	$t_r$ ( $\mu$ sec)	MAX. COLL. CUR.		DESCRIPTION					
			$I_C$ (amp.)	$I_B$ (amp.)	$BV_{CB}$ (volt)	$BV_{EB}$ (volt)	$BV_{CE}$ (volt)	BIAS			Min.	Center				Max.	$I_{CBO}$ (ma)	@ $V_{CB}$ (volt)	Type P - PNP N - NPN	Mat.	Max. Temp. (°C)	S T A T U S	Dwg. No.
								$V_{CB}$ (volt)	$I_C$ (amp.)														
3102	2N1617A	2.1	5.0	2.0	80	10	70	4.0	5.0	10	20		1.5	.50	1.8	.20	80	N	Si	200		MT10	
3103	2N1618A	2.1	5.0	2.0	100	10	80	4.0	5.0	10	20		1.5	.50	1.8	.20	100	N	Si	200		MT10	
3104	2N1894	2.1	2.0		60	10		15 $\emptyset$	1.0		30							N-D	Si	200J	T	MS 3	
3105	2N1895	2.1	2.0		80	10		15 $\emptyset$	1.0		30							N-D	Si	200J	T	MS 3	
3106	2N1896	2.1	2.0		60	10		15 $\emptyset$	1.0		90 $\dagger$				.10			N-D	Si	200J	T	MS 3	
3107	2N1897	2.1	2.0		80	10		15 $\emptyset$	1.0		90 $\dagger$				.10			N-D	Si	200J	T	MS 3	
3108	2N1898	2.1	2.0		100	10		15 $\emptyset$	1.0		90 $\dagger$				.10			N-D	Si	200J	T	MS 3	
3109	F101	2.1	4.0		30	.50		15 $\emptyset$	1.0	10		50	1000	5.0				N-DA	Si			MS 3	
3110	F102	2.1	4.0		60	.50		15 $\emptyset$	1.0	10		50	1000	5.0				N-DA	Si			MS 3	
3111	F103	2.1	4.0		100	.50		15 $\emptyset$	1.0	10		50	1000	5.0				N-DA	Si			MS 3	
3112	F108	2.1	4.0		60	.50		15 $\emptyset$	1.0	10		50	1500	5.0				N-DA	Si			TO35	
3113	F109	2.1	4.0		100	.50		15 $\emptyset$	1.0	10		50	1500	5.0				N-DA	Si			TO35	
3114	F110	2.1	4.0		60	.50		15 $\emptyset$	1.0	10		50	1500	1.5				N-DA	Si			TO35	
3115	F111	2.1	7.5		60	.50		15 $\emptyset$	2.0	10		50	1500	5.0				N-DA	Si			TO35	
3116	F112	2.1	7.5		60	.50		15 $\emptyset$	2.0	10		50	1000	5.0				N-DA	Si			MS 3	
3117	F113	2.1	7.5		60	.50		15 $\emptyset$	2.0	10		50	1000	1.5				N-DA	Si			MS 3	
3118	F114	2.1	7.5		60	.50		15 $\emptyset$	2.0	10		50	1500	1.5				N-DA	Si			TO35	
3119	F121	2.1	4.0		55	.50	55	15	1.0	10		1000	5.0					N-ME	Si	200S		MS 3	
3120	F121A	2.1	4.0		55	.50	55	15	1.0	10		1000	.80					N-ME	Si	200S		MS 3	
3121	F122	2.1	4.0		45	.50	45	15	1.0	10		1000	5.0					N-ME	Si	200S		MS 3	
3122	F122A	2.1	4.0		45	.50	45	15	1.0	10		1000	.80					N-ME	Si	200S		MS 3	
3123	F123	2.1	4.0		35	.50	35	15	1.0	10		1000	5.0					N-ME	Si	200S		MS 3	
3124	F123A	2.1	4.0		35	.50	35	15	1.0	10		1000	.80					N-ME	Si	200S		MS 3	
3125	F124	2.1	4.0		25	.50	25	15	1.0	10		1000	5.0					N-ME	Si	200S		MS 3	
3126	F124A	2.1	4.0		25	.50	25	15	1.0	10		1000	.80					N-ME	Si	200S		MS 3	
3127	ST450	2.1	2.0		60		5.0	15	1.0 $\Delta$		25		4000		1.8			N-DA	Si	150			
3128	STC1101	2.1	6.0	3.0	60	10	40	4.0 $\emptyset$	1.5	10		50	1000	2.0				N-D	Si	200			
3129	STC1102	2.1	6.0	3.0	100	10	55	4.0 $\emptyset$	1.5	10		50	1000	2.0				N-D	Si	200			
3130	STC1103	2.1	6.0	3.0	60	10	40	4.0 $\emptyset$	1.5	25		75	1000	.67				N-D	Si	200			
3131	STC1104	2.1	6.0	3.0	100	10	55	4.0 $\emptyset$	1.5	25		75	1000	.67				N-D	Si	200			
3132	STC1105	2.1	7.5		30		30	4.0 $\emptyset$	2.0	10 $\dagger$				.75				N	Si	200J		MS 3	
3133	STC1105A	2.1	7.5		60		60	4.0 $\emptyset$	2.0	10 $\dagger$				.75				N	Si	200J		MS 3	
3134	STC1106	2.1	7.5		30		30	4.0 $\emptyset$	5.0	10 $\dagger$				.50				N	Si	200J		MS 3	
3135	STC1106A	2.1	7.5		60		60	4.0 $\emptyset$	5.0	10 $\dagger$				.50				N	Si	200J		MS 3	
3136	ST440	2.08	2.0		60	5.0	60	15 $\emptyset$	1.0	10		25	4000		1.8	20	60	N	Si	150S			
3137	2N424	2.06	2.0		80	10		15	1.0 $\emptyset$		30							N-D	Si	200J	N	MS 3	
3138	2N1660	2.06 $\emptyset$	2.0		60	10	60	15 $\emptyset$	1.0 $\emptyset$	45	90	135	25M $\Delta$		.10	10	60	N-DA	Si	200J		MS 3	
3139	2N1661	2.06 $\emptyset$	2.0		80	10	80	15 $\emptyset$	1.0 $\emptyset$	45	90	135	25M $\Delta$		.10	10	80	N-DA	Si	200J		MS 3	
3140	2N1662	2.06 $\emptyset$	2.0		100	10	100	15 $\emptyset$	1.0 $\emptyset$	45	90	135	25M $\Delta$		.10	10	100	N-DA	Si	200J		MS 3	
3141	TT500	2.06 $\emptyset$	2.0		60	10	60	15 $\emptyset$	1.0 $\emptyset$	45		135	25M $\Delta$			10	60	N-D	Si	200J	T	MT10	
3142	TT501	2.06 $\emptyset$	2.0		80	10	80	15 $\emptyset$	1.0 $\emptyset$	45		135	25M $\Delta$			10	80	N-D	Si	200J	T	MT10	
3143	TT502	2.06 $\emptyset$	2.0		100	10	100	15 $\emptyset$	1.0 $\emptyset$	45		135	25M $\Delta$			10	100	N-D	Si	200J	T	MT10	
3144	2N234A	2.0	3.0	.15			30		.50		25							P	Ge	90J		TO 3	
3145	2N235A	2.0	3.0	.15	50		40		.50		40			.80				P	Ge	95J		TO 3	
3146	2N235B	2.0	3.0	.15	50		40		.50		60			.80				P	Ge	95J		TO 3	

## 2. POWER TRANSISTORS

IN ORDER OF DECREASING MAXIMUM THERMAL RESISTANCE, AND TYPE NO.



LINE No.	TYPE No.	Max. Thermal Res. in Free Air (°C/W)	ABSOLUTE MAX. RATINGS @ 25°C					CURRENT GAIN $h_{FE}$ or $h_{fe} - \dagger$					$f_{\alpha b}$ or $f_{\alpha e} - \dagger$ (Kc)	Max. Sat. Res. (ohm)	$t_r$ (μsec)	MAX. COLL. CUR.		DESCRIPTION					
			$I_C$ (amp.)	$I_B$ (amp.)	$V_{CB}$ (volt)	$V_{EB}$ (volt)	$V_{CE}$ (volt)	BIAS			Min.	Center				Max.	$I_{CBO}$ (ma)	@ $V_{CB}$ (volt)	Type P - PNP N - NPN	Mat.	Max. Temp. (°C)	S T A T U S	Dwg. No.
								$V_{CB}$ (volt)	$I_C$ (amp.)														
3147	2N236A	2.0	3.0	.15	50	40		.75		40			.33		1.0	25	P	Ge	95J		TO 3		
3148	2N236B	2.0	3.0	.15	50	40		.75		60			.33		1.0	25	P	Ge	95J		TO 3		
3149	2N285A	2.0	3.0	.15		40		.50		150			.50		1.0	25	P	Ge	95J		TO 3		
3150	2N297A	2.0	4.0	1.0	60	40	2.0	.50	40		100	12†	.50	5.0	3.0	60	P-A	Ge	100J	A	TO 3		
3151	2N386	2.0	3.0		60	60	1.5	2.5	20	60		700		.50	30	P-Δ	Ge	100J	T		TO27		
3152	2N387	2.0	3.0		80	80	1.5	2.5	20	35		600		5.0	80	P-Δ	Ge	100J	T		TO27		
3153	2N399	2.0	3.0	.15		40		.75		40		400	.83	1.0	25	P	Ge	90J			TO 3		
3154	2N400	2.0	3.0	.15	50	40		1.0		50		500	.33	2.0	25	P	Ge	95J			TO 3		
3155	2N401	2.0	3.0	.15		40		.50		40		400	.83	1.0	25	P	Ge	90J			TO 3		
3156	2N418	2.0	5.0	.50	100	80	2.0	4.0	40	50		400	.50	15	1.5	60	P-†	Ge	100J		TO 3		
3157	2N419	2.0	3.0	.15	55	45		.50		60		300	.50	1.0	25	P	Ge	95J			TO 3		
3158	2N420	2.0	5.0	.50	65	45	2.0	4.0	40	50		400	.50	15	1.5	60	P-†	Ge	100J		TO 3		
3159	2N420A	2.0	5.0	.50	90	70	2.0	4.0	40	50		400	.50	15	.50	25	P-†	Ge	100J		TO 3		
3160	2N463	2.0	5.0	1.0	60	50	2.0	2.0	20	27	60	500	.08	4.6	.30	40	P-A	Ge	100J	NR	TO32		
3161	2N553	2.0	4.0	1.0	80	40	2.0	.50	40	55	80	25†	.30	5.0	2.0	60	P-A	Ge	100J		MD 1		
3162	2N639	2.0	5.0	.50		40	5.0	3.0	15		30		.83	15	1.0	25	P-†	Ge	100J		TO 3		
3163	2N639A	2.0	5.0	.50		70	5.0	3.0	15		30		.83	15	5.0	60	P-†	Ge	100J		TO 3		
3164	2N639B	2.0	5.0	.50		80	5.0	3.0	15		30		.83	15	5.0	60	P-†	Ge	100J		TO 3		
3165	2N665	2.0	5.0	1.0	80	40	2.0	.50	40		80	25†	.30	5.0	2.0	60	P-A	Ge	100J	M	TO 3		
3166	2N1138	2.0	5.0	.50		40	5.0	3.0	100		200		.50		1.0	25	P	Ge	100J		TO 3		
3167	2N1138A	2.0	5.0	.50		70	5.0	3.0	100		200		.50		5.0	60	P	Ge	100J		TO 3		
3168	2N1138B	2.0	5.0	.50		80	5.0	3.0	100		200		.50		5.0	60	P	Ge	100J		TO 3		
3168a	2N2101	2.0	3.0		60	10	60	15	1.0	15		60	1500	5.0			N-ME	Si	200S		MT10		
3169▼#	2N2234	2.0	1.5	.30	40	6.0	20	9.0	.02	20†		100MΔ			.05m	9.0	N-PL	Si	150		TO 3		
3170▼#	2N2235	2.0	1.5	.30	40	6.0	20	9.0	.02	10†		50MΔ			.05m	9.0	N-PL	Si	150		TO 3		
3171▼	2N2266	2.0	5.0	.70	100	28	55	2.0	2.0	25		75	200\$	.15	2.0	80	P-A	Ge	125		TO10		
3172▼	2N2267	2.0	5.0	.70	120	28	55	2.0	2.0	25		75	200\$	.15	2.0	100	P-A	Ge	125		TO10		
3173▼	2N2268	2.0	Same as 2N2266 except the collector is electrically insulated from case														P-A	Ge	125		TO10		
3174▼	2N2269	2.0	Same as 2N2267 except the collector is electrically insulated from case														P-A	Ge	125		TO10		
3175#	2S012A	2.0	2.0	.50	12	70	15	1.5	20	30	50	5000	5.0	1.5	.01	15	N-D	Si	150J		MS 3		
3176#	2S013A	2.0	1.5	.50		12	60	15	1.5	15	25	50	5000	10		.01	15	N-D	Si	150J		MS 3	
3177▼#	2S720	2.0	1.0	.50		5.0	120	10	.50	10	30		3000†	10		10	120	N-D	Si	150A		MS 3	
3178▼#	2S721	2.0	1.0	.50		5.0	60	10	.50	10	30		3000†	10		10	60	N-D	Si	150A		MS 3	
3179#	2SB123	2.0	5.0		40	12		1.5	5.0		50		250	.09	2.0	40	P-A	Ge	75J				
3180#	2SB149	2.0	8.0		40	30		1.5	5.0		60		250	.05	1.0	40	P-A	Ge	75J		TO 3		
3181#	2SB231	2.0	6.0	1.0	120	1.0	120	1.5	5.0	25	50	200	1000	.06	1.2	5.0	120	P-D	Ge	75J		TO 3	
3182#	2SC21	2.0	2.0		60	5.5	60	10	1.0		25				.12	1.0	30	N-MEΔ	Si	150J		TO 3	
3183#	AD103	2.0	15		50		32	.50	.50	30	75				10	50	P	Ge	90J				
3184#	AD104	2.0	10		65		45	.50	.50	28	70				10	65	P	Ge	90J				
3185#	AD105	2.0	8.0		80		60	.50	.50	23	40				10	80	P	Ge	90J				
3186	B1017	2.0	3.0				20	.50			25							P	Ge	85J			
3187	B1085	2.0	10		120	1.5	120	2.0	5.0		40		1500	.15		10	100	D	Ge	100			
3188	CTP1104	2.0	3.0		40	10	40	2.0	2.0	10				1.0	2.0	40	P	Ge	85J		TO 3		
3189#	GET571	2.0	12	2.0	16	6.0	16	.50	12	8.0	15	25	350	.40	2.0	16	P-A	Ge	90J		MD 2		
3190#	GET572	2.0	12	2.0	32	12	32	.50	12	8.0	15	25	350	.40	2.0	32	P-A	Ge	90J		MD 2		

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## 2. POWER TRANSISTORS

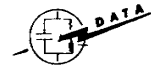
IN ORDER OF DECREASING MAXIMUM THERMAL RESISTANCE, AND TYPE NO.



LINE No.	TYPE No.	Max. Thermal Res. in Free Air (°C/W)	ABSOLUTE MAX. RATINGS @ 25°C					CURRENT GAIN $h_{FE}$ or $h_{fe} - \dagger$					$f_{\alpha b}$ or $f_{\alpha e} - \dagger$ (Kc)	Max. Sat. Res. (ohm)	$t_r$ ( $\mu$ sec)	MAX. COLL. CUR.		DESCRIPTION					
			$I_C$ (amp.)	$I_B$ (amp.)	$V_{CB}$ (volt)	$V_{EB}$ (volt)	$V_{CE}$ (volt)	BIAS			Min.	Center				Max.	$I_{CBO}$ (ma)	@ $V_{CB}$ (volt)	Type P - PNP N - NPN	Mat.	Max. Temp. (°C)	STATUS	Dwg. No.
								$V_{CB}$ (volt)	$I_C$ (amp.)														
3191#	GET573	2.0 $\emptyset$	12	2.0	64	12	40	.50	12	8.0	15	25	350	.40		2.0	64	P-A	Ge	90J		MD 2	
3192#	GET581	2.0	6.0		80	40	60	1.0	6.0	15		30						P-A	Ge	90J	D	TO 3	
3193#	GET582	2.0	6.0		80	40	32	1.0	6.0	20		65						P-A	Ge	90J	D	TO 3	
3194#	GET583	2.0	6.0		60	20	32	1.0	6.0	20		45						P-A	Ge	90J	D	TO 3	
3195#	GET584	2.0	6.0		60	20	32	1.0	6.0	35		80						P-A	Ge	90J	D	TO 3	
3196#	GET585	2.0	4.0		40	10	40	1.0	4.0		12							P-A	Ge	90J	D	TO 3	
3197#	GET586	2.0	3.0		32	10		1.0	3.0	15		50						P-A	Ge	90J	D	TO 3	
3198#	OC25	2.0 $\emptyset$	4.0		40		40		1.0	15								P	Ge	90J	T		
3199▼	SEC1077	2.0 $\emptyset$			50	9.0	50 $\S$		.50	1000				2.0				N	Si	200		MS 3	
3200▼	SEC1078	2.0 $\emptyset$			100	9.0	100 $\S$		.50	1000				2.0				N	Si	200		MS 3	
3201▼	SEC1079	2.0 $\emptyset$			50	9.0	50 $\S$		2.0	1000				2.0				N	Si	200		MS 3	
3202▼	SEC1080	2.0 $\emptyset$			100	9.0	100 $\S$		2.0	1000				2.0				N	Si	200		MS 3	
3203#	SFT212	2.0 $\emptyset$	3.0	.50	30	7.5		2.0 $\emptyset$	2.0	20	40	150	200 $\Delta$			1.0	30	P-A	Ge	85J		TO 3	
3204#	TK200A	2.0 $\emptyset$	.50	.60 $\emptyset$	40	6.0	20	9.0 $\emptyset$	.02	8.0 $\dagger$			50MA $\S$		.001	9.0	N-D	Si	150		TO 3		
3205#	TK201A	2.0 $\emptyset$	.50	.60 $\emptyset$	40	6.0	20	9.0 $\emptyset$	.02	20 $\dagger$			100MA $\S$		.001	9.0	N-D	Si	150		TO 3		
3206#	V15/10DP	2.0 $\emptyset$	3.0		15	5.0	5.0	1.5	.20	10	18	20	200			.10	1.5	P-A	Ge	75J		TO 3	
3207#	V15/10P	2.0	3.0		15	5	5.0	1.5	.02	10	18	20	200			.10	1.5	P-A	Ge	75J		TO 3	
3208#	V15/20DP	2.0 $\emptyset$	3.0		15	5.0	5.0	1.5	.20	20	24	30	200			.10	1.5	P-A	Ge	75J		TO 3	
3209#	V15/20P	2.0	3.0		15	5	5.0	1.5	.20	20	24	30	200			.10	1.5	P-A	Ge	75J		TO 3	
3210#	V15/30DP	2.0 $\emptyset$	3.0		15	5.0	5.0	1.5	.20	30	38	30	200			.10	1.5	P-A	Ge	75J		TO 3	
3211#	V15/30P	2.0	3.0		15	5.0	5.0	1.5	.20	30	38		200			.10	1.5	P-A	Ge	75J		TO 3	
3212#	V30/10DP	2.0 $\emptyset$	3.0		30	10	10	1.5	.20	10	18	20	200			.10	1.5	P-A	Ge	75J		TO 3	
3213#	V30/10P	2.0	3.0		30	10	10	1.5	.20	10	18	20	200			.10	1.5	P-A	Ge	75J		TO 3	
3214#	V30/20DP	2.0 $\emptyset$	3.0		30	10	10	1.5	.20	20	24	30	200			.10	1.5	P-A	Ge	75J		TO 3	
3215#	V30/20P	2.0	3.0		30	10	10	1.5	.20	20	24	30	200			.10	1.5	P-A	Ge	75J		TO 3	
3216#	V30/30DP	2.0 $\emptyset$	3.0		30	10	10	1.5	.20	20	38		200			.10	1.5	P-A	Ge	75J		TO 3	
3217#	V30/30P	2.0	3.0		30	10	10	1.5	.20	30	38		200			.10	1.5	P-A	Ge	75J		TO 3	
3218#	V60/10DP	2.0 $\emptyset$	3.0		60	20	20	1.5	.20	10	18	20	200			.10	1.5	P-A	Ge	75J		TO 3	
3219#	V60/10P	2.0	3.0		60	20	20	1.5	.20	10	18	20	200			.10	1.5	P-A	Ge	75J		TO 3	
3220#	V60/20DP	2.0 $\emptyset$	3.0		60	20	20	1.5	.20	20	24	30	200			.10	1.5	P-A	Ge	75J		TO 3	
3221#	V60/20P	2.0	3.0		60	20	20	1.5	.20	20	24	30	200			.10	1.5	P-A	Ge	75J		TO 3	
3222#	V60/30DP	2.0 $\emptyset$	3.0		60	20	20	1.5	.20	30	38		200			.10	1.5	P-A	Ge	75J		TO 3	
3223#	V60/30P	2.0	3.0		60	20	20	1.5	.20	30	38		200			.10	1.5	P-A	Ge	75J		TO 3	
3224	2N1430	1.7	10		100		100		5.0	30		120	1500					P-DA	Ge	110J		TO 3	
3225	2N257	1.5	3.0	2.0	40	10	40	2.0 $\emptyset$	2.0 $\emptyset$		40		5.0 $\dagger$		2.0	40	P-A	Ge	90J		TO 3		
3226	2N257B	1.5	3.0	2.0	40	10	40	2.0 $\emptyset$	2.0		50		5.0 $\dagger$		5.0	40	P-A	Ge	90J		TO 3		
3227	2N257G	15	3.0	2.0	40	10	40	2.0 $\emptyset$	2.0		40		5.0 $\dagger$		5.0	40	P-A	Ge	90J		TO 3		
3228	2N257W	1.5	3.0	2.0	40	10	40	2.0 $\emptyset$	2.0		60		5.0 $\dagger$		5.0	40	P-A	Ge	90J		TO 3		
3229	2N268	1.5	3.0	2.0	80	40	60	2.0 $\emptyset$	2.0		40		5.0 $\dagger$		2.0	80	P-A	Ge	90J		TO 3		
3230	2N268A	1.5	3.0	2.0	80	20	60	2.0 $\emptyset$	2.0	20	40	80			2.0	80	P-A	Ge	90J		TO 3		
3231	2N297	1.5	5.0	2.0	60		60	2.0 $\emptyset$	2.0	12		40	5.0 $\dagger$	5.0		3.0	60	P-A	Ge	90J	A	TO 3	
3232	2N392	1.5 $\emptyset$	5.0	1.0	60	40	45	2.0	1.0			200	10 $\dagger$	.17		8.0	60	P-A	Ge	100J		TO 3	
3233	2N451	1.5	5.0	.50	65	10		10 $\emptyset$	1.0	10				4.0		20	65	N-D	Si	150J	T	MT 4	
3234	2N452	1.5	5.0	.50	65	10		20 $\emptyset$	2.0	8.0	12		400	2.5		50	65	N-D	Si	150J	T	MT 4	
3235	2N453	1.5	2.0	.50	30	10		20 $\emptyset$	1.0	20	30		400	6.0		20	30	N-D	Si	150J	T	MT 4	

## 2. POWER TRANSISTORS

IN ORDER OF DECREASING MAXIMUM THERMAL RESISTANCE, AND TYPE NO.



LINE No.	TYPE No.	Max. Thermal Res. in Free Air (°C/W)	ABSOLUTE MAX. RATINGS @ 25°C					CURRENT GAIN $h_{FE}$ or $h_{fe} - \dagger$					$f_{\alpha b}$ or $f_{\alpha e} - \dagger$ (Kc)	Max. Sat. Res. (ohm)	$t_r$ ( $\mu$ sec)	MAX. COLL. CUR.		DESCRIPTION					
			$I_C$ (amp.)	$I_B$ (amp.)	$V_{CB}$ (volt)	$V_{EB}$ (volt)	$V_{CE}$ (volt)	BIAS			Min.	Center				Max.	$I_{CBO}$ (ma)	@ $V_{CB}$ (volt)	Type P - PNP N - NPN	Mat.	Max. Temp. (°C)	S T A T U S	Dwg. No.
								$V_{CB}$ (volt)	$I_C$ (amp.)														
3236	2N454	1.5	2.0	.50	25	10	20	1.0	8.0	15		400	10		20	65	N-D	Si	150J	T	MT 4		
3237	2N561	1.5	5.0	20	80	60	50	1.5	1.0	75		650	90	.50	30		P- $\Delta$	Ge	100B		TO 3		
3238	2N677	1.5	15	1.5	50		30	2.0	10	20	40	60	.10	15	2.0	15	P- $\dagger$	Ge	100J		TO 3		
3239	2N677A	1.5	15	1.5	60		40	2.0	10	20	40	60	.10	15	2.0	25	P- $\dagger$	Ge	100J		TO 3		
3240	2N677B	1.5	15	1.5	90		70	2.0	10	20	40	60	.10	15	5.0	60	P- $\dagger$	Ge	100J		TO 3		
3241	2N677C	1.5	15	1.5	100		80	2.0	10	20	40	60	.10	15	5.0	60	P- $\dagger$	Ge	100J		TO 3		
3242	2N678	1.5	15	1.5	50		30	2.0	10	50	75	100	.10	15	2.0	15	P- $\dagger$	Ge	100J		TO 3		
3243	2N678A	1.5	15	1.5	60		40	2.0	10	50	75	100	.10	15	2.0	25	P- $\dagger$	Ge	100J		TO 3		
3244	2N678B	1.5	15	1.5	90		70	2.0	10	50	75	100	.10	15	5.0	60	P- $\dagger$	Ge	100J		TO 3		
3245	2N678C	1.5	15	1.5	100		80	2.0	10	50	75	100	.10	15	5.0	60	P- $\dagger$	Ge	100J		TO 3		
3246	2N1007	1.5	3.0		40	15	30	14	.50	50			5.0	1.0	1.0	25	P	Ge	100				
3247	2N1029	1.5	15	1.5	50		30	2.0	10	20	40	60	.10	15	2.0	15	P- $\dagger$	Ge	100J		TO 3		
3248	2N1029A	1.5	15	1.5	60		40	2.0	10	20	40	60	.10	15	2.0	25	P- $\dagger$	Ge	100J		TO 3		
3249	2N1029B	1.5	15	1.5	90		70	2.0	10	20	40	60	.10	15	5.0	60	P- $\dagger$	Ge	100J		TO 3		
3250	2N1029C	1.5	15	1.5	100		80	2.0	10	20	40	60	.10	15	5.0	60	P- $\dagger$	Ge	100J		TO 3		
3251	2N1030	1.5	15	1.5	50		30	2.0	10	50	75	100	.10	15	2.0	15	P- $\dagger$	Ge	100J		TO 3		
3252	2N1030A	1.5	15	1.5	60		40	2.0	10	50	75	100	.10	15	2.0	15	P- $\dagger$	Ge	100J		TO 3		
3253	2N1030B	1.5	15	1.5	90		70	2.0	10	50	75	100	.10	15	5.0	60	P- $\dagger$	Ge	100J		TO 3		
3254	2N1030C	1.5	15	1.5	100		80	2.0	10	50	75	100	.10	15	5.0	60	P- $\dagger$	Ge	100J		TO 3		
3255	2N1031	1.5	15	1.5	50		30	2.0	10	20	40	60	.10	15	2.0	15	P- $\dagger$	Ge	100J		TO 3		
3256	2N1031A	1.5	15	1.5	60		40	2.0	10	20	40	60	.10	15	2.0	25	P- $\dagger$	Ge	100J		TO 3		
3257	2N1031B	1.5	15	1.5	90		70	2.0	10	20	40	60	.10	15	5.0	60	P- $\dagger$	Ge	100J		TO 3		
3258	2N1031C	1.5	15	1.5	100		80	2.0	10	20	40	60	.10	15	5.0	60	P- $\dagger$	Ge	100J		TO 3		
3259	2N1032	1.5	15	1.5	50		30	2.0	10	50	75	100	.10	15	2.0	15	P- $\dagger$	Ge	100J		TO 3		
3260	2N1032A	1.5	15	1.5	60		40	2.0	10	50	75	100	.10	15	2.0	15	P- $\dagger$	Ge	100J		TO 3		
3261	2N1032B	1.5	15	1.5	90		70	2.0	10	50	75	100	.10	15	5.0	60	P- $\dagger$	Ge	100J		TO 3		
3262	2N1032C	1.5	15	1.5	100		80	2.0	10	50	75	100	.10	15	5.0	60	P- $\dagger$	Ge	100J		TO 3		
3263	2N1120	1.5	15	1.0	80	40		2.0	10	20		50	3.0	$\dagger$ $\Delta$	.10	15	80	P- $\Delta$	Ge	95J	A	TO 3	
3264	2N1168	1.5	5.0	1.0	50	20		2.0	1.0	70	110		10	$\dagger$		8.0	50	P-A	Ge	100J		TO 3	
3265	2N1227	1.5	3.0		40	15	30	14	.50	50			5.0	1.0	1.0	25	P	Ge	100				
3266	2N1666	1.5	6.0			2.0	60		6.0			32	200		.10	.50	P- $\Delta$	Ge	90J				
3267	2N1667	1.5	6.0			2.0	32		6.0			90	200		.10	.50	P- $\Delta$	Ge	90J				
3268	2N1668	1.5	6.0			2.0	32		6.0			50	200		.10	.50	P- $\Delta$	Ge	90J				
3269	2N1669	1.5	6.0			2.0	32		6.0			70	200		.10	.50	P- $\Delta$	Ge	90J				
3270	2N1675	1.5	10			5.0	60	10	1.0	25	37		80M	.50		1m	5.0	N-D	Si	150	R	TO32	
3271	2N1722	1.5	7.5	5.0	120	10		15	2.0	20		90	10Mc	$\dagger$ $\Delta$	.50			N-ME	Si	175		MS 3	
3272	2N1724	1.5	7.5	5.0	120	10		15	2.0	20		90	10Mc	$\dagger$ $\Delta$	.50			N-ME	Si	175		MT10	
3273	2N1905	1.5	10	3.0	60	1.0	40	2.0	1.0	50	90	150	7.5M	$\dagger$	1.0	.10	.50	40	P-D	Ge	100J		TO 3
3274	2N1906	1.5	10	3.0	100	1.0	40	2.0	5.0	75	125	200	7.5M	$\dagger$	1.0	.10	.50	40	P-D	Ge	100J		TO 3
3275	2N1971	1.5	4.0	1.0	80	40	40	2.0	.50	25	55	60	25	$\dagger$	.30	5.0	2.0	60	P-A	Ge	100J		MD 1
3276	2N2061	1.5	3.0	2.0	20	10	20	2.0	2.0	10	30					2.0	20	P	Ge	95J		TO 3	
3277	2N2062	1.5	3.0	2.0	20	10	20	2.0	2.0	20	50					2.0	20	P	Ge	95J		TO 3	
3278	2N2063	1.5	3.0	2.0	40	20	35	2.0	2.0	10						10	40	P	Ge	95J		TO 3	
3279	2N2064	1.5	3.0	2.0	40	20	35	2.0	2.0	20						10	40	P	Ge	95J		TO 3	
3280	2N2065	1.5	3.0	2.0	80	30	65	2.0	2.0	10						10	80	P	Ge	95J		TO 3	

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## 2. POWER TRANSISTORS

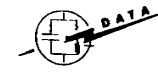
IN ORDER OF DECREASING MAXIMUM THERMAL RESISTANCE, AND TYPE NO.



LINE No.	TYPE No.	Max. Thermal Res. in Free Air (°C/W)	ABSOLUTE MAX. RATINGS @ 25°C					CURRENT GAIN $h_{FE}$ or $h_{fe} - \dagger$					$f_{\alpha b}$ or $f_{\alpha e} - \dagger$ (Kc)	Max. Sat. Res. (ohm)	$t_r$ ( $\mu$ sec)	MAX. COLL. CUR.		DESCRIPTION				
			$I_C$ (amp.)	$I_B$ (amp.)	$V_{CB}$ (volt)	$V_{EB}$ (volt)	$V_{CE}$ (volt)	BIAS		Min.	Center	Max.				$I_{CBO}$ (ma)	@ $V_{CB}$ (volt)	Type P - PNP N - NPN	Mat.	Max. Temp. (°C)	STATUS	Dwg. No.
								$V_{CB}$ (volt)	$I_C$ (amp.)													
3281	2N2066	1.5	3.0	2.0	80	30	65	2.0	2.0	20					10	80	P	Ge	95J	TO 3		
3282▼#	2S024	1.5	7.5	2.0	32	10	32	15	2.0	20	30				1.0	32	N-ME	Si	175J	MS 3		
3283▼#	2S025	1.5	7.5	2.0	60	10	60	15	2.0	20	30				1.0	60	N-ME	Si	175J	MS 3		
3284▼#	2S026	1.5	7.5	2.0	100	10	100	15	2.0	20	30				1.0	100	N-ME	Si	175J	MS 3		
3287#	2SB41	1.5	1.2	1.2	40	10	32				63				2.0	30	P-A	Ge	91S	MD 4		
3288#	2SB42	1.5	1.2	1.2	60	10	32				63				2.0	30	P-A	Ge	91S	MD 4		
3289♦#	2SB126	1.5	3.5		32	10	16	1.0	3.0	15		50			.22	14	P-A	Ge	90J	TO 3		
3290♦#	2SB127	1.5	3.5		32	10	16	1.0	3.0	26		100			.22	14	P-A	Ge	90J	TO 3		
3291♦#	2SB128	1.5	6.0		80	40	40	1.0	6.0	16		36			.22	14	P-A	Ge	90J	TO 3		
3292♦#	2SB128A	1.5	6.0		120	60	60	1.0	6.0	16		36			.22	14	P-A	Ge	90J	TO 3		
3293♦#	2SB129	1.5	6.0		80	40	40	1.0	6.0	30		80			.22	14	P-A	Ge	90J	TO 3		
3294♦#	2SB129A	1.5	6.0		120	60	60	1.0	6.0	30		80			.22	14	P-A	Ge	90J	TO 3		
3295▼#	2SB232	1.5	6.0		130	.50		1.0	.20	20					.22	14	P-D	Ge	90J	TO 3		
3296▼#	2SB233	1.5	6.0		130	.50		1.0	.20	100					.22	14	P-D	Ge	90J	TO 3		
3297▼#	2SB234	1.5	6.0		180	1.3		1.0	6.0	15					.22	14	P-D	Ge	90J	TO 3		
3298▼#	2SB295	1.5	5.0		100	40	80	1.0	1.0	30	70	120	.20		3.0	100	P-A†	Ge	85J	MD 4		
3299#	ASZ15	1.5	6.0	1.0	80	40	60	1.0	1.0		20	55			.10	.50	P-†	Ge	90J	TO 3		
3300#	ASZ16	1.5	6.0	1.0	60	20	48	1.0	1.0		45	130			.10	.50	P-†	Ge	90J	TO 3		
3301#	ASZ17	1.5	6.0	1.0	60	20	48	1.0	1.0		25	75			.10	.50	P-†	Ge	90J	TO 3		
3302#	ASZ18	1.5	6.0	1.0	80	40	60	1.0	1.0		30	110			.10	.50	P-†	Ge	90J	TO 3		
3303	CDT1309	1.5	3.0	2.0	40	10	40					120			2.0	40	P	Ge	100J	TO 3		
3304	CDT1310	1.5	5.0	2.0	40	20	40	2.0	2.0	40		120			5.0	40	P-A†	Ge	100J	TO 3		
3305	CDT1311	1.5	5.0	2.0	60	30	55	2.0	2.0	40		120			5.0	60	P-A†	Ge	100J	TO 3		
3306	CDT1312	1.5	5.0	2.0	80	40	70	2.0	2.0	40		120			5.0	80	P-A†	Ge	100J	TO 3		
3307	CDT1313	1.5	5.0	2.0	100	50	80	2.0	2.0	40		120			5.0	100	P-A†	Ge	100J	TO 3		
3308	CDT1315	1.5	8.0	.30	100		75	2.0	5.0	60		150			20	100	P-A†	Ge	85J	TO 3		
3309	CDT1319	1.5	5.0	2.0	40	30	38	2.0	2.0	20		60			5.0	40	P-A†	Ge	100J	TO 3		
3310	CDT1320	1.5	5.0	2.0	60	30	55	2.0	2.0	20		60			5.0	60	P-A†	Ge	100J	TO 3		
3311	CDT1321	1.5	5.0	2.0	80	30	70	2.0	2.0	20		60			5.0	80	P-A†	Ge	100J	TO 3		
3312	CDT1322	1.5	5.0	2.0	100	30	80	2.0	2.0	20		60			5.0	100	P-A†	Ge	100J	TO 3		
3313	CTP1111	1.5	3.0	2.0	80	40	60	2.0	2.0	20					5.0	80	P-A†	Ge	90J	TO 3		
3314#	NKT401	1.5	6.0	1.0	80			1.5	6.0	15†		50†	600		5.0	80	P	Ge	90			
3315#	NKT402	1.5	6.0	1.0	60			1.5	6.0	30†		90†	600		5.0	60	P	Ge	90			
3316#	NKT403	1.5	6.0	1.0	80			1.5	1.0	50†		150†	600		5.0	80	P	Ge	90			
3317#	NKT404	1.5	6.0	1.0	60			1.5	1.0	50†		150†	600		5.0	60	P	Ge	90			
3318#	OC28	1.5	6.0			2.0	60		6.0			32	200		.10	.50	P-AΔ	Ge	90J			
3319#	OC29	1.5	6.0			2.0	32		6.0			90	200		.10	.50	P-AΔ	Ge	90J			
3320#	OC35	1.5	6.0			2.0	32		6.0			50	200		.10	.50	P-AΔ	Ge	90J			
3321#	OC36	1.5	6.0			2.0	32		6.0			70	200		.10	.50	P-AΔ	Ge	90J			
3322♦#	SFT213	1.5	3.0	.50	40	20	30	2.0	2.0	20	40	150	200Δ	.13	1.0	40	P-A	Ge	85J	TO 3		
3323♦#	SFT214	1.5	3.0	.50	60	30	40	2.0	2.0	20	40	150	200Δ	.13	1.0	60	P-A	Ge	85J	TO 3		
3324♦#	SFT238	1.5	6.0	1.0	40	20	30	2.0	5.0	20	30		300	.07	6.0	3.0	40	P-A	Ge	95J	TO 3	
3325♦#	SFT239	1.5	6.0	1.0	60	30	40	2.0	5.0	20	30		300	.07	6.0	3.0	60	P-A	Ge	95J	TO 3	
3326♦#	SFT240	1.5	6.0	1.0	80	40	60	2.0	5.0	20	30		300	.07	6.0	3.0	80	P-A	Ge	95J	TO 3	
3327♦#	SFT250	1.5	3.0	.50	80	40	60	2.0	2.0	20	40	150	200Δ	.13	1.0	80	P-A	Ge	85J	TO 3		

## 2. POWER TRANSISTORS

IN ORDER OF DECREASING MAXIMUM THERMAL RESISTANCE, AND TYPE NO.



LINE No.	TYPE No.	Max. Thermal Res. in Free Air (°C/W)	ABSOLUTE MAX. RATINGS @ 25°C					CURRENT GAIN $h_{FE}$ or $h_{fe} - \dagger$					$f_{\alpha b}$ or $f_{\alpha e - \dagger}$ (Kc)	Max. Sat. Res. (ohm)	$t_r$ ( $\mu$ sec)	MAX. COLL. CUR.		DESCRIPTION				
			$I_C$ (amp.)	$I_B$ (amp.)	$V_{CB}$ (volt)	$V_{EB}$ (volt)	$V_{CE}$ (volt)	BIAS		Min.	Center	Max.				$I_{CBO}$ (ma)	@ $V_{CB}$ (volt)	Type	Mat.	Max. Temp. (°C)	STATUS	Dwg. No.
								$V_{CB}$ (volt)	$I_C$ (amp.)													
3328	2N1021	1.4	7.0	3.0	100	20	50	1.5	5.0	30	60	90	430	.10		.50	50	P-A	Ge	100J		TO 3
3329	2N1022	1.4	7.0	3.0	120	20	50	1.5	5.0	30	60	90	430	.10		.50	60	P-A	Ge	100J		TO 3
3330#	2SB296	1.4	10		130	3.0	130	1.5	10	25	50	200	1.5Mc			.33	12	P-A	Ge	75J		TO 3
3331#	2SB85	1.32	5.0	2.0	40	20	25	1.5	4.0	14	30					3.0	40	P-A	Ge	91J		
3332#	2SB86	1.32	5.0	2.0	60	20	35	1.5	4.0	14	30					3.0	60	P-A	Ge	91J		
3333#	2SB87	1.32	5.0	2.0	80	60	50	1.5	4.0	20	30					3.0	80	P-A	Ge	91J		
3334#	2SB228	1.32	5.0	2.0	80	50	35	1.5	4.0	20	28	54		.16		5.0	80	P-A	Ge	91J		
3335#	2SB229	1.32	5.0	2.0	100	50	40	1.5	4.0	20	28	54		.16		5.0	100	P-A	Ge	91J		
3336#	2SB230	1.32	5.0	2.0	120	50	50	1.5	4.0	20	28	54		.16		5.0	120	P-A	Ge	91J		
3337#	2SB151	1.3	5.0		80	60	50	1.5	1.0		75				90	.50	30	P-A†	Ge	100S		MD 4
3338#	2SB152	1.3	5.0		100	60	65	1.5	1.0		75				90	.50	30	P-A†	Ge	100S		MD 4
3339	2N378	1.2	5.0		40			2.0	2.0		30			.50	25	.50	25	P-A†	Ge	100J		
3340	2N379	1.2	5.0		80			2.0	2.0		30			.50	25	.50	25	P-A†	Ge	100J		
3341	2N380	1.2	5.0		60			2.0	2.0		50			.50	25	.50	25	P-A†	Ge	100J		
3342	2N459	1.2	5.0		105			2.0	2.0	20	30	70		.50	25	.50	25	P-A†	Ge	100J		
3343	2N637	1.2	5.0	.50	60		30	5.0	3.0	30		60			8.0	1.0	25	P-†	Ge	100J		TO 3
3344	2N637A	1.2	5.0	.50	90		55	5.0	3.0	30		60			8.0	1.0	60	P-†	Ge	100J		TO 3
3345	2N637B	1.2	5.0	.50	100		65	5.0	3.0	30		60			8.0	1.0	60	P-†	Ge	100J		TO 3
3346	2N638	1.2	5.0	.50	60		30	5.0	3.0	20		40			10	1.0	25	P-†	Ge	100J		TO 3
3347	2N638A	1.2	5.0	.50	90		55	5.0	3.0	20		40			10	1.0	60	P-†	Ge	100J		TO 3
3348	2N638B	1.2	5.0	.50	100		65	5.0	3.0	20		40			10	1.0	60	P-†	Ge	100J		TO 3
3349	2N1011	1.2	5.0	1.0	80	40	40	2.0	3.0	30		75		.50	5.0	15	80	P-A	Ge	100J	A	TO 3
3350	2N1073	1.2	10	1.0	40	1.0	40	2.0	5.0	20		60	1500	.20	5.0	2.0	25	P-DA†	Ge	110J		TO 3
3351	2N1073A	1.2	10	1.0	80	1.0	80	2.0	5.0	20		60	1500	.20	5.0	5.0	60	P-DA†	Ge	110J		TO 3
3352	2N1073B	1.2	10	1.0	120	1.0	120	2.0	5.0	20		60	1500	.20	5.0	10	100	P-DA†	Ge	110J		TO 3
3353	2N1136	1.2	6.0		60		30	5.0	3.0	50		100		.33	5.0	1.0	25	P	Ge	100J		MD 8
3354	2N1136A	1.2	6.0		90		55	5.0	3.0	50		100		.33	5.0	1.0	60	P	Ge	100J		MD 8
3355	2N1136B	1.2	6.0		100		65	5.0	3.0	50		100		.33	5.0	1.0	60	P	Ge	100J		MD 8
3356	2N1137	1.2	6.0		60		30	5.0	3.0	75		150		.33	5.0	1.0	25	P	Ge	100J		MD 8
3357	2N1137A	1.2	6.0		90		55	5.0	3.0	75		150		.33	5.0	1.0	60	P	Ge	100J		MD 8
3358	2N1137B	1.2	6.0		100		65	5.0	3.0	75		150		.33	5.0	1.0	60	P	Ge	100J		MD 8
3359	2N1159	1.2	5.0	1.0	80	20	60	2.0	3.0	30		75	10†	.33	10	8.0	80	P-A	Ge	100J		TO 3
3360	2N1160	1.2	7.0	1.0	80	20	60	2.0	5.0	20		50	10†		10	8.0	80	P-A	Ge	100J		TO 3
3361	2N1162	1.2	25		50		35	1.0	25	15	25	65	4.0	.04	19	15	50	P-A	Ge	90J		TO 3
3362	2N1163	1.2	25		50		35	1.0	25	15	25	65	4.0	.04	19	15	50	P-A	Ge	90J		TO41
3363	2N1164	1.2	25		80		60	1.0	25	15	25	65	4.0	.04	19	15	50	P-A	Ge	90J		TO 3
3364	2N1165	1.2	25		80		60	1.0	25	15	25	65	4.0	.04	19	15	50	P-A	Ge	90J	N	TO41
3365	2N1166	1.2	25		100		75	1.0	25	15	25	65	4.0	.04	19	15	100	P-A	Ge	90J		TO 3
3366	2N1167	1.2	25		100		75	1.0	25	15	25	65	4.0	.04	19	15	100	P-A	Ge	90J		TO41
3367	2N2137	1.2	3.0		30	15	20	2.0	.50	30	45	60	12Δ†			2.0	30	P-A	Ge	100J		TO 3
3368	2N2137A	1.2	3.0		30	15	20	2.0	.50	30	45	60	12Δ†			2.0	30	P-A	Ge	100J		TO 3
3369	2N2138	1.2	3.0		45	25	30	2.0	.50	30	45	60	12Δ†			2.0	45	P-A	Ge	100J		TO 3
3370	2N2138A	1.2	3.0		45	25	30	2.0	.50	30	45	60	12Δ†			2.0	45	P-A	Ge	100J		TO 3
3371	2N2139	1.2	3.0		60	30	45	2.0	.50	30	45	60	12Δ†			2.0	60	P-A	Ge	100J		TO 3
3372	2N2139A	1.2	3.0		60	30	45	2.0	.50	30	45	60	12Δ†			2.0	60	P-A	Ge	100J		TO 3

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## 2. POWER TRANSISTORS

IN ORDER OF DECREASING MAXIMUM THERMAL RESISTANCE, AND TYPE NO.



LINE No.	TYPE No.	Max. Thermal Res. in Free Air (°C/W)	ABSOLUTE MAX. RATINGS @ 25°C					CURRENT GAIN $h_{FE}$ or $h_{fe} - \dagger$					$f_{\alpha b}$ or $f_{\alpha e - \dagger}$ (Kc)	Max. Sat. Res. (ohm)	$t_r$ (μsec)	MAX. COLL. CUR.		DESCRIPTION				
			$I_C$ (amp.)	$I_B$ (amp.)	$V_{CB}$ (volt)	$V_{EB}$ (volt)	$V_{CE}$ (volt)	BIAS		Min.	Center	Max.				$I_{CBO}$ (ma)	@ $V_{CB}$ (volt)	Type P - PNP N - NPN	Mat.	Max. Temp. (°C)	STATUS	Dwg. No.
								$V_{CB}$ (volt)	$I_C$ (amp.)													
3373	2N2140	1.2∅	3.0		75	40	60	2.0∅	.50	30	45	60	12Δ†			2.0	75	P-A	Ge	100J		TO 3
3374	2N2140A	1.2∅	3.0		75	40	60	2.0∅	.50	30	45	60	12Δ†			2.0	75	P-A	Ge	100J		TO 3
3375	2N2141	1.2∅	3.0		90	45	65	2.0∅	.50	30	45	60	12Δ†			2.0	90	P-A	Ge	100J		TO 3
3376	2N2141A	1.2∅	3.0		90	45	65	2.0∅	.50	30	45	60	12Δ†			2.0	90	P-A	Ge	100J		TO 3
3377	2N2142	1.2∅	3.0		30	15	20	2.0∅	.50	50	70	100	12Δ†			2.0	30	P-A	Ge	100J		TO 3
3378	2N2142A	1.2∅	3.0		30	15	20	2.0∅	.50	50	70	100	12Δ†			2.0	30	P-A	Ge	100J		TO 3
3379	2N2143	1.2∅	3.0		45	25	30	2.0∅	.50	50	70	100	12Δ†			2.0	45	P-A	Ge	100J		TO 3
3380	2N2143A	1.2∅	3.0		45	25	30	2.0∅	.50	50	70	100	12Δ†			2.0	45	P-A	Ge	100J		TO 3
3381	2N2144	1.2∅	3.0		60	30	45	2.0∅	.50	50	70	100	12Δ†			2.0	60	P-A	Ge	100J		TO 3
3382	2N2144A	1.2∅	3.0		60	30	45	2.0∅	.50	50	70	100	12Δ†			2.0	60	P-A	Ge	100J		TO 3
3383	2N2145	1.2∅	3.0		75	40	60	2.0∅	.50	50	70	100	12Δ†			2.0	75	P-A	Ge	100J		TO 3
3384	2N2145A	1.2∅	3.0		75	40	60	2.0∅	.50	50	70	100	12Δ†			2.0	75	P-A	Ge	100J		TO 3
3385	2N2146	1.2∅	3.0		90	45	65	2.0∅	.50	50	70	100	12Δ†			2.0	90	P-A	Ge	100J		TO 3
3386	2N2146A	1.2∅	3.0		90	45	65	2.0∅	.50	50	70	100	12Δ†			2.0	90	P-A	Ge	100J		TO 3
3387#	2SB124	1.2∅	15		60	25		1.5	15		70		300	.02		10	60	P-A	Ge	75J		MS 1
3388#	2SB125	1.2∅	15		36	25		1.5	15		70		300	.02		10	36	P-A	Ge	75J		MS 1
3389#	2SB148	1.2∅	15		80	25		1.5	15		70		300	.02		10	80	P-A	Ge	75J		MS 1
3390#	2SB246	1.2			40		25		2.0		60		350					P-A	Ge			
3391#	2SB247	1.2			60		35		2.0		60		350					P-A	Ge			
3392#	2SB248	1.2			40		25		2.0		60		350					P-A	Ge			
3393#	2SB248A	1.2			60		35		2.0		60		350					P-A	Ge			
3394#	2SB249	1.2			80		40		2.0		60		350					P-A	Ge			
3395#	2SB250	1.2			30		20		2.0		60		350					P-A	Ge			
3396#	2SB250A	1.2			60		40		2.0		60		350					P-A	Ge			
3397#	2SB251	1.2			30		20		2.0		40		350					P-A	Ge			
3398#	2SB251A	1.2			60		40		2.0		40		350					P-A	Ge			
3399#	2SB252	1.2			80		50		2.0		60		350					P-A	Ge			
3400#	2SB252A	1.2			120		80		2.0		60		350					P-A	Ge			
3401#	2SB253	1.2			80		50		2.0		40		350					P-A	Ge			
3402#	2SB253A	1.2			120		80		2.0		60		350					P-A	Ge			
3403	B1151	1.2	15		30	25	25	2.0	4.0	20			400	.25		2.0	25	P	Ge	100		TO 3
3404	B1151A	1.2	15		50	25	40	2.0	4.0	20			400	.25		2.0	25	P	Ge	100		TO 3
3405	B1151B	1.2	15		80	25	70	2.0	4.0	20			400	.25		2.0	25	P	Ge	100		TO 3
3406	B1152	1.2	15		30	25	25	2.0	8.0	20			400	.13		2.0	25	P	Ge	100		TO 3
3407	B1152A	1.2	15		50	25	40	2.0	8.0	20			400	.13		2.0	25	P	Ge	100		TO 3
3408	B1152B	1.2	15		80	25	70	2.0	8.0	20			400	.13		2.0	25	P	Ge	100		TO 3
3409	B1178	1.2	10		160	1.5	160	2.0	5.0		40		1000	.15	2.0	10	100	P-DA	Ge	110		TO 3
3410	B1274	1.2	10				40		5.0	60		120						P-DAΔ		110J		TO 5
3411	B1274A	1.2	10				80		5.0	60		120						P-DAΔ		110J		TO 5
3412	B1274B	1.2	10				120		5.0	60		120						P-DAΔ		110J		TO 5
3413	BC1073	1.2	10		40		40	2.0∅	5.0	20		60	1500			1.0	25	P-DAΔ	Ge	110J		TO 3
3414	BC1073A	1.2	10		80		80	2.0∅	5.0	20		60	1500			1.0	60	P-DAΔ	Ge	110J		TO 3
3415	BC1073B	1.2	10		120		120	2.0∅	5.0	20		60	1500			2.0	100	P-DAΔ	Ge	110J		TO 3
3416#	OC16	1.2	1.5	.20	32	10	32	1.0	2.0		22		200			.10	14	P-A	Ge	75J		
3417#	OC26	1.2	3.5		32	10	32	1.0∅	1.0	20	33	60	150			.20	14	P-A	Ge	90J		TO 3



## 2. POWER TRANSISTORS

IN ORDER OF DECREASING MAXIMUM THERMAL RESISTANCE, AND TYPE NO.



LINE No.	TYPE No.	Max. Thermal Res. in Free Air (°C/W)	ABSOLUTE MAX. RATINGS @ 25°C					CURRENT GAIN $h_{FE}$ or $h_{fe} - f$					$f_{\alpha b}$ or $f_{\alpha e - f}$ (Kc)	Max. Sat. Res. (ohm)	$t_r$ (μsec)	MAX. COLL. CUR.		DESCRIPTION					
			$I_C$ (amp.)	$I_B$ (amp.)	$V_{CB}$ (volt)	$V_{EB}$ (volt)	$V_{CE}$ (volt)	BIAS			Min.	Center				Max.	$I_{CBO}$ (ma)	@ $V_{CB}$ (volt)	Type	Mat.	Max. Temp. (°C)	STATUS	Dwg. No.
								$V_{CB}$ (volt)	$I_C$ (amp.)														
3418	2N2015	1.17∅	10	6.0	100	10	50	4.0∅	5.0	15		50	25†	.25		.05	30	N-D	Si	200C		TO36	
3419	2N2016	1.17∅	10	6.0	130	10	65	4.0∅	10	7.5			25†	.25		.05	30	N-D	Si	200C		TO36	
3420	2N250	1.1∅	3.0		30			1.5	.50	30	90		8.0					P-A	Ge	85J		MD 6	
3421	2N251	1.1∅	3.0		60			1.5	.50	30	90		8.0					P-A	Ge	85J		MD 6	
3422	2N456	1.1∅	5.0		40	20		1.5	.50	10	30				26	.50	20	P-A	Ge	95J		MD 6	
3423	2N456A	1.1∅	7.0	3.0	40	20	20	1.5∅	5.0	30	60	90	430§	.10		.50	20	P-A	Ge	100J		TO 3	
3424	2N457	1.1∅	5.0	3.0	60	20		1.5	.50	10	30				26	.50	30	P-A	Ge	95J		MD 6	
3425	2N457A	1.1∅	7.0	3.0	60	20	30	1.5∅	5.0	30	60	90	430§	.10		.50	30	P-A	Ge	100J		TO 3	
3426	2N458	1.1∅	5.0	3.0	80	20		1.5	.50	10	30				26	.50	40	P-A	Ge	95J		MD 6	
3427	2N458A	1.1∅	7.0	3.0	80	20	40	1.5∅	5.0	30	60	90	430§	.10		.50	40	P-A	Ge	100J		TO 3	
3428	2N176	1.0	3.0		40		30	12∅	.50∅	30		70		.80		3.0	30	PA	Ge	90J		MD 3	
3429	2N178	1.0	3.0		40		30	2.0∅	.50	15		45		.20		3.0	30	P-A	Ge	90J		MD 3	
3430	2N301	1.0	2.0		40	12	40	1.5	1.0			70				3.0	30	P-A	Ge	91S		TO 3	
3431	2N301A	1.0	2.0		60	12	40	1.5	1.0			70				3.0	30	P-A	Ge	91S		TO 3	
3432	2N350	1.0	3.0		40		30	2.0∅	.70	20		60	300	1.3		3.0	30	P-A	Ge	90J		MD 3	
3433	2N350A	1.0			40		30		.70		30		300			3.0	30	P-A	Ge	90J		MD 3	
3434	2N351	1.0	3.0		40		30	2.0∅	.70	25		90	400	1.3		3.0	30	P-A	Ge	90J		MD 3	
3435	2N351A	1.0			40		30		.70		45		400			3.0	30	P-A	Ge	90J		MD 3	
3436	2N376	1.0	3.0		40			2.0∅	.70	35		120	500	1.3		3.0	30	P-A	Ge	90J		MD 3	
3437	2N376A	1.0			40		30		.70		60		500					P-A	Ge	90J		MD 3	
3438	2N554	1.0	3.0		30				1.0		45		400	.20		10	15	P-A	Ge	90J		MD 3	
3439	2N555	1.0	3.0		40				1.0	30		100	400	.20		20	30	P-A	Ge	90J		TO 3	
3440	2N627	1.0	10		40		30	2.0∅	10	10		30	400	.10		3.0	40	P-A	Ge	90J		TO 3	
3441	2N628	1.0	10		60		45	2.0∅	10	10		30	400	.10		3.0	60	P-A	Ge	90J		TO 3	
3442	2N629	1.0	10		80		60	2.0∅	10	10		30	400	.10		3.0	80	P-A	Ge	90J		TO 3	
3443	2N630	1.0	10		100		75	2.0∅	10	10		30	400	.10		3.0	100	P-A	Ge	90J		TO 3	
3444	2N669	1.0∅	3.0		40		30	2.0∅	.50		100	250	500§			3.0	30	P-A	Ge	100J		TO 3	
3445	2N1314	1.0	3.5		32	10	32	6.0	3.5			33	150			.10	.50	P-A	Ge	90J		TO 3	
3446	2N1899	1.0	15	5.0	140	5.0	100	2.0	10	10			50M§Δ			120∇	60	N-ME	Si	150J		MT 3	
3447	2N1900	1.0	15	5.0	140	5.0	100	2.0	10	10		20	50M§Δ			120∇	60	N-ME	Si	150J		MT 3	
3448	2N1901	1.0	15	5.0	140	5.0	100	2.0	10	15		40	50M§Δ			120∇	60	N-ME	Si	150J		MT 3	
3449	2N1902	1.0	15	5.0	140	5.0		2.0	10	10			50M§Δ			120∇	60	N-MEΔ	Si	150J		MT16	
3450	2N1903	1.0	15	5.0	140	5.0		2.0	10	10		20	50M§Δ			120∇	60	N-MEΔ	Si	150J		MT16	
3451	2N1904	1.0	15	5.0	140	5.0		2.0	10	15		40	50M§Δ			120∇	60	N-MEΔ	Si	150J		MT16	
3452	2N2069	1.0	12		40	20	30	2.0∅	5.0	30		200				15	40	P	Ge	95J		TO 3	
3453	2N2070	1.0	12		80	30	60	2.0∅	5.0	30						15	80	P	Ge	95J		TO 3	
3454#	2SB131	1.0	1.5	1.5∅	40	10	32				63					3.0	30	P-A	Ge	91S		MD 4	
3455#	2SB132	1.0	1.5	1.5∅	60	10	32				63					3.0	30	P-A	Ge	91S		MD 4	
3456	3N45	1.0∅	12∅	1.5	60	28	35	2.0∅	5.0	30	55	120	600§Δ	.08	4.0	3.0	60	P-A4	Ge	100J		TO15	
3457	3N46	1.0∅	12∅	1.5	80	28	50	2.0∅	5.0	20	40	80	300§Δ	.08	6.0	3.0	80	P-A4	Ge	100J		TO15	
3458	3N47	1.0∅	12∅	1.5	40	28	25	2.0∅	5.0	30	55	120	500§Δ	.08	4.0	3.0	40	P-A4	Ge	100J		TO15	
3459	3N48	1.0∅	12∅	1.5	60	28	40	2.0∅	5.0	20	40	80	300§Δ	.08	6.0	3.0	60	P-A4	Ge	100J		TO15	
3460♦#	ADZ11	1.0	15	2.0	50	30	40	2.0∅	1.2	40		120	80			8.0	50	P-A	Ge	90J		TO36	
3461♦#	ADZ12	1.0	15	2.0	80	50	60	2.0∅	1.2	40		120	100			8.0	80	P-A	Ge	90J		TO36	
3462	CTP1500	1.0	15	5.0	100	80	80	2.0∅	5.0	30		75				8.0	100	P-†	Ge	95J		TO 3	

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## 2. POWER TRANSISTORS

IN ORDER OF DECREASING MAXIMUM THERMAL RESISTANCE, AND TYPE NO.



LINE No.	TYPE No.	Max. Thermal Res. in Free Air (°C/W)	ABSOLUTE MAX. RATINGS @ 25°C					CURRENT GAIN $h_{FE}$ or $h_{fe} - f$					$f_{\alpha b}$ or $f_{\alpha e - f}$ (Kc)	Max. Sat. Res. (ohm)	$t_r$ ( $\mu$ sec)	MAX. COLL. CUR.		DESCRIPTION					
			$I_C$ (amp.)	$I_B$ (amp.)	$V_{CB}$ (volt)	$V_{EB}$ (volt)	$V_{CE}$ (volt)	BIAS		Min.	Center	Max.				$I_{CBO}$ (ma)	@ $V_{CB}$ (volt)	Type P - PNP N - NPN	Mat.	Max. Temp. (°C)	STATUS	Dwg. No.	
								$V_{CB}$ (volt)	$I_C$ (amp.)														
3463	CTP1503	1.0	15	5.0	80	60	70	2.0 $\emptyset$	5.0	30		75				8.0	80	P- $\dagger$	Ge	95J		TO 3	
3464	CTP1504	1.0	15	5.0	60	40	50	2.0 $\emptyset$	5.0	30		75				8.0	60	P- $\dagger$	Ge	95J		TO 3	
3465	CTP1508	1.0	15	5.0	40	20	40	2.0 $\emptyset$	5.0	30		75				8.0	40	P- $\dagger$	Ge	95J		TO 3	
3466	CTP1544	1.0	25		60	30	35	2.0 $\emptyset$	25	25		125				15	60	P-A $\dagger$	Ge	95J		TO 3	
3467	CTP1545	1.0	25		80	30	60	2.0 $\emptyset$	25	25		125				15	80	P-A $\dagger$	Ge	95J		TO 3	
3468	CTP1552	1.0	25		40	30	30	2.0 $\emptyset$	25	25		125				15	40	P-A $\dagger$	Ge	95J		TO 3	
3469	CTP1553	1.0	25		100	30	75	2.0 $\emptyset$	25	25		125				15	100	P-A $\dagger$	Ge	95J		TO 3	
3470	CTP3500	1.0	15	5.0	100	80	80	2.0 $\emptyset$	5.0	30		75				8.0	100	P- $\dagger$	Ge	95J		TO 3	
3471	CTP3503	1.0	15	5.0	80	60	70	2.0 $\emptyset$	5.0	30		75				8.0	80	P- $\dagger$	Ge	95J		TO 3	
3472	CTP3504	1.0	15	5.0	60	40	50	2.0 $\emptyset$	5.0	30		75				8.0	60	P- $\dagger$	Ge	95J		TO 3	
3473	CTP3508	1.0	15	5.0	40	20	40	2.0 $\emptyset$	5.0	30		75				8.0	40	P- $\dagger$	Ge	95J		TO 3	
3474	CTP3544	1.0	25		60	30	40	2.0 $\emptyset$	25	25		125				15	60	P-A $\dagger$	Ge	95J		TO 3	
3475	CTP3545	1.0	25		80	30	60	2.0 $\emptyset$	25	25		125				15	80	P-A $\dagger$	Ge	95J		TO 3	
3476	CTP3552	1.0	25		40	30	30	2.0 $\emptyset$	25	25		125				15	40	P-A $\dagger$	Ge	95J		TO 3	
3477	CTP3553	1.0	25		100	30	75	2.0 $\emptyset$	25	25		125				15	100	P-A $\dagger$	Ge	95J		TO 3	
3478#	OD650	1.0	15	3.0	60	20	25	2.0 $\emptyset$	15	10	25		100			2.0	60	P-A	Ge	70J		MT15	
3479#	OD650B	1.0	5.0	1.0	60	20	25	2.0 $\emptyset$	5.0	15	25		100			2.0	60	P-A	Ge	70J		MT15	
3480#	OD651	1.0	15	3.0	60	25	40	2.0 $\emptyset$	15	10	15		100			2.0	60	P-A	Ge	70J		MT15	
3481#	OD651A	1.0	15	3.0	60	25	30	2.0 $\emptyset$	15	10	25		100			2.0	60	P-A	Ge	70J		MT15	
3482#	OD652	1.0	15	3.0	60	25	15	2.0 $\emptyset$	30	10	15		100			2.0	60	P-A	Ge	70J		MT15	
3483	PT900	1.0	10		80	4.0	50	2.0 $\emptyset$	10	10			50000	.20	.05	30	10	N-MEA $\Delta$	Si	150J		MT 3	
3484#	SFT265	1.0 $\emptyset$	15	2.5	40	20	40	2.0 $\emptyset$	12		20		300	.06	9.0	8.0	40	P-A	Ge	95J		TO36	
3485#	SFT266	1.0 $\emptyset$	15	2.5	60	40	50	2.0 $\emptyset$	12		20		300	.06	9.0	8.0	60	P-A	Ge	95J		TO36	
3486#	SFT267	1.0 $\emptyset$	15	2.5	80	60	60	2.0 $\emptyset$	12		20		300	.06	9.0	8.0	80	P-A	Ge	95J		TO36	
3487#	2G220	.88	10	5.0	40	30		1.5 $\emptyset$	10	10	12		200	.05	11	2.0	20	P-A	Ge	95J			
3488#	2G221	.88	10	5.0	60	30		1.5 $\emptyset$	10	10	12		200	.05	11	2.0	30	P-A	Ge	95J		MD 4	
3489#	2G222	.88	10	5.0	80	30		1.5 $\emptyset$	10	10	12		200	.05	11	2.0	40	P-A	Ge	95J		MD 4	
3490#	2G223	.88	15	5.0	40	30		1.5 $\emptyset$	15	10	12		250	.05	11	2.0	20	P-A	Ge	95J		MD 4	
3491#	2G224	.88	15	5.0	60	30		1.5 $\emptyset$	15	10	12		250	.05	11	2.0	30	P-A	Ge	95J		MD 4	
3492#	2G225	.88	15	5.0	80	30		1.5 $\emptyset$	15	10	12		250	.05	11	2.0	40	P-A	Ge	95J		MD 4	
3493#	2G226	.88	20	5.0	40	30		1.5 $\emptyset$	20	10	12		300	.05	10	2.0	20	P-A	Ge	95J		MD 4	
3494#	2G227	.88	20	5.0	60	30		1.5 $\emptyset$	20	10	12		300	.05	10	2.0	30	P-A	Ge	95J		MD 4	
3495#	2G228	.88	20	5.0	80	30		1.5 $\emptyset$	20	10	12		300	.05	10	2.0	40	P-A	Ge	95J		MD 4	
3496#	2G229	.88	25	5.0	40	30		1.5 $\emptyset$	25	10	12		350	.05	10	2.0	40	P-A	Ge	95J		MD 4	
3497#	2G230	.88	25	5.0	60	30		1.5 $\emptyset$	25	10	12		350	.05	10	2.0	40	P-A	Ge	95J		MD 4	
3498#	2G231	.88	25	5.0	80	30		1.5 $\emptyset$	25	10	12		350	.05	10	2.0	40	P-A	Ge	95J		MD 4	
3499	2N375	.80	3.0		80		60	4.0 $\emptyset$	1.0 $\emptyset$	35	55	90				10	3.0	60	P- $\Delta$	Ge	100J		TO 3
3500	2N618	.80	3.0		80		60	4.0 $\emptyset$	1.0 $\emptyset$	60	90	140				10	3.0	60	P- $\Delta$	Ge	100J		TO 3
3501	2N1146	.80	15	5.0	40	30	40	2.0 $\emptyset$	15	30						15	40	P	Ge	95J		TO 3	
3502	2N1146A	.80	15	5.0	60	30	60	2.0 $\emptyset$	15	30						15	60	P	Ge	95J		TO 3	
3503	2N1146B	.80	15	5.0	80	30	80	2.0 $\emptyset$	15	30						15	80	P	Ge	95J		TO 3	
3504	2N1146C	.80	15	5.0	100	30	100	2.0 $\emptyset$	15	30						15	100	P	Ge	95J		TO 3	
3505	2N1147	.80	15	5.0	40	30	40	2.0 $\emptyset$	15	30						15	40	P	Ge	95J		TO 3	
3506	2N1147A	.80	15	5.0	60	30	60	2.0 $\emptyset$	15	30						15	60	P	Ge	95J		TO 3	
3507	2N1147B	.80	15	5.0	80	30	80	2.0 $\emptyset$	15	30						15	80	P	Ge	95J		TO 3	

## 2. POWER TRANSISTORS

IN ORDER OF DECREASING MAXIMUM THERMAL RESISTANCE, AND TYPE NO.



LINE No.	TYPE No.	Max. Thermal Res. in Free Air (°C/W)	ABSOLUTE MAX. RATINGS @ 25°C					CURRENT GAIN $h_{FE}$ or $h_{fe} - \bar{f}$					$f_{\alpha b}$ or $f_{\alpha e - \bar{f}}$ (Kc)	Max. Sat. Res. (ohm)	$t_r$ ( $\mu$ sec)	MAX. COLL. CUR.		DESCRIPTION					
			$I_C$ (amp.)	$I_B$ (amp.)	$V_{CB}$ (volt)	$V_{EB}$ (volt)	$V_{CE}$ (volt)	BIAS			Min.	Center				Max.	$I_{CBO}$ (ma)	@ $V_{CB}$ (volt)	Type	Mat.	Max. Temp. (°C)	STATUS	Dwg. No.
								$V_{CB}$ (volt)	$I_C$ (amp.)														
3508	2N1147C	.80	15	5.0	100	30	100	2.0 $\bar{\phi}$	15	30					15	100	P	Ge	95J		TO 3		
3509	2N1162A	.80	25		50	25	35	1.0 $\bar{\phi}$	25	15		65	4.0 $\bar{\dagger}$	.04	19	15	50	P-AA	Ge	100J		TO 3	
3510	2N1163A	.80	25		50	25	35	1.0 $\bar{\phi}$	25	15		65	4.0 $\bar{\dagger}$	.04	19	15	50	P-AA	Ge	100J		TO41	
3511	2N1164A	.80	25		80	40	60	1.0 $\bar{\phi}$	25	15		65	4.0 $\bar{\dagger}$	.04	19	15	80	P-AA	Ge	100J		TO 3	
3512	2N1165A	.80	25		80	40	60	1.0 $\bar{\phi}$	25	15		65	4.0 $\bar{\dagger}$	.04	19	15	80	P-AA	Ge	100J		TO41	
3513	2N1166A	.80	25		100	50	75	1.0 $\bar{\phi}$	25	15		65	4.0 $\bar{\dagger}$	.04	19	15	100	P-AA	Ge	100J		TO 3	
3514	2N1167A	.80	25		100	50	75	1.0 $\bar{\phi}$	25	15		65	4.0 $\bar{\dagger}$	.04	19	15	100	P-AA	Ge	100J		TO41	
3515	2N1182	.80	5.0		50	12	60	12	.50	35		85	8.0 $\bar{\dagger}$			.50	50	P-A	Ge	100J		TO 3	
3516	2N1359	.80	3.0		50		40	4.0 $\bar{\phi}$	1.0 $\bar{\phi}$	35	55	90	10 $\bar{\dagger}$		10	3.0	40	P- $\Delta$	Ge	100J		TO 3	
3517	2N1360	.80	3.0		50		40	4.0 $\bar{\phi}$	1.0 $\bar{\phi}$	60	90	140	8.5 $\bar{\dagger}$		10	3.0	40	P- $\Delta$	Ge	100J		TO 3	
3518	2N1362	.80	3.0		100		75	4.0 $\bar{\phi}$	1.0 $\bar{\phi}$	35	55	90	10 $\bar{\dagger}$		10	3.0	75	P- $\Delta$	Ge	100J		TO 3	
3519	2N1363	.80	3.0		100		75	4.0 $\bar{\phi}$	1.0 $\bar{\phi}$	60	90	140	8.5 $\bar{\dagger}$		10	3.0	75	P- $\Delta$	Ge	100J		TO 3	
3520	2N1364	.80	3.0		120		100	4.0 $\bar{\phi}$	1.0 $\bar{\phi}$	35	55	90	10 $\bar{\dagger}$		10	3.0	100	P- $\Delta$	Ge	100J		TO 3	
3521	2N1365	.80	3.0		120		100	4.0 $\bar{\phi}$	1.0 $\bar{\phi}$	60	90	140	8.5 $\bar{\dagger}$		10	3.0	100	P- $\Delta$	Ge	100J		TO 3	
3522	2N1419	.80			70		40	2.0 $\bar{\phi}$	25	40		100		.35	20	15	80	P	Ge		T	TO 3	
3523	2N1518	.80 $\bar{\phi}$	25	4.0	50	30	40	4.0 $\bar{\phi}$	15	15		40	4.0 $\bar{\dagger}$	.03	20	4.0	50	P-A $\bar{\dagger}$	Ge	100J		TO36	
3524	2N1519	.80 $\bar{\phi}$	25	4.0	80	30	60	4.0 $\bar{\phi}$	15	15		40	4.0 $\bar{\dagger}$	.03	20	4.0	80	P-A $\bar{\dagger}$	Ge	100J		TO36	
3525	2N1520	.80 $\bar{\phi}$	35	6.0	50	30	40	4.0 $\bar{\phi}$	15	17		35	4.0 $\bar{\dagger}$	.02	25	4.0	50	P-A $\bar{\dagger}$	Ge	100J		TO36	
3526	2N1521	.80 $\bar{\phi}$	35	6.0	80	30	60	4.0 $\bar{\phi}$	15	17		35	4.0 $\bar{\dagger}$	.02	25	4.0	80	P-A $\bar{\dagger}$	Ge	100J		TO36	
3527	2N1522	.80 $\bar{\phi}$	50	8.0	50	30	40	4.0 $\bar{\phi}$	15	22	37	45	4.0 $\bar{\dagger}$	.01	30	4.0	50	P-A $\bar{\dagger}$	Ge	100J		TO36	
3528	2N1523	.80 $\bar{\phi}$	50	8.0	80	30	60	4.0 $\bar{\phi}$	15	22	37	45	4.0 $\bar{\dagger}$	.01	30	4.0	80	P-A $\bar{\dagger}$	Ge	100J		TO36	
3529	2N1529	.80 $\bar{\phi}$	5.0		40	20	30	2.0 $\bar{\phi}$	3.0	20	30	40	10 $\bar{\dagger}$		10	2.0	25	P-AA	Ge	100J		TO 3	
3530	2N1529A	.80 $\bar{\phi}$	5.0		40	20	20	2.0 $\bar{\phi}$	3.0	20		40	10 $\bar{\dagger}$	.50	10	2.0	25	P-AA	Ge	100J		TO 3	
3531	2N1530	.80 $\bar{\phi}$	5.0		60	30	45	2.0 $\bar{\phi}$	3.0	20	30	40	10 $\bar{\dagger}$		10	2.0	40	P-AA	Ge	100J		TO 3	
3532	2N1530A	.80 $\bar{\phi}$	5.0		60	30	30	2.0 $\bar{\phi}$	3.0	20		40	10 $\bar{\dagger}$	.50	10	2.0	40	P-AA	Ge	100J		TO 3	
3533	2N1531	.80 $\bar{\phi}$	5.0		80	40	60	2.0 $\bar{\phi}$	3.0	20	30	40	10 $\bar{\dagger}$		10	2.0	55	P-AA	Ge	100J		TO 3	
3534	2N1531A	.80 $\bar{\phi}$	5.0		80	40	40	2.0 $\bar{\phi}$	3.0	20		40	10 $\bar{\dagger}$	.50	10	2.0	55	P-AA	Ge	100J		TO 3	
3535	2N1532	.80 $\bar{\phi}$	5.0		100	50	75	2.0 $\bar{\phi}$	3.0	20	30	40	10 $\bar{\dagger}$		10	2.0	65	P-AA	Ge	100J		TO 3	
3536	2N1532A	.80 $\bar{\phi}$	5.0		100	50	50	2.0 $\bar{\phi}$	3.0	20		40	10 $\bar{\dagger}$	.50	10	2.0	65	P-AA	Ge	100J		TO 3	
3537	2N1533	.80 $\bar{\phi}$	5.0		120	60	90	2.0 $\bar{\phi}$	3.0	20	30	40	10 $\bar{\dagger}$		10	2.0	80	P-AA	Ge	100J		TO 3	
3538	2N1534	.80 $\bar{\phi}$	5.0		40	20	20	2.0 $\bar{\phi}$	3.0	35	50	70	8.5 $\bar{\dagger}$	.40	8.0	2.0	25	P-AA	Ge	100J		TO 3	
3539	2N1534A	.80 $\bar{\phi}$	5.0		40	20	20	2.0 $\bar{\phi}$	3.0	35		70	8.5 $\bar{\dagger}$	.40	8.0	2.0	25	P-AA	Ge	100J		TO 3	
3540	2N1535	.80 $\bar{\phi}$	5.0		60	30	30	2.0 $\bar{\phi}$	3.0	35	50	70	8.5 $\bar{\dagger}$	.40	8.0	2.0	40	P-AA	Ge	100J		TO 3	
3541	2N1535A	.80 $\bar{\phi}$	5.0		60	30	30	2.0 $\bar{\phi}$	3.0	35		70	8.5 $\bar{\dagger}$	.40	8.0	2.0	40	P-AA	Ge	100J		TO 3	
3542	2N1536	.80 $\bar{\phi}$	5.0		80	40	60	2.0 $\bar{\phi}$	3.0	35	50	70	8.5 $\bar{\dagger}$		8.0	2.0	55	P-AA	Ge	100J		TO 3	
3543	2N1536A	.80 $\bar{\phi}$	5.0		80	40	40	2.0 $\bar{\phi}$	3.0	35		70	8.5 $\bar{\dagger}$	.40	8.0	2.0	55	P-AA	Ge	100J		TO 3	
3544	2N1537	.80 $\bar{\phi}$	5.0		100	50	75	2.0 $\bar{\phi}$	3.0	35	50	70	8.5 $\bar{\dagger}$		8.0	2.0	66	P-AA	Ge	100J		TO 3	
3545	2N1537A	.80 $\bar{\phi}$	5.0		100	50	50	2.0 $\bar{\phi}$	3.0	35		70	8.5 $\bar{\dagger}$	.40	8.0	2.0	65	P-AA	Ge	100J		TO 3	
3546	2N1538	.80 $\bar{\phi}$	5.0		120	60	90	2.0 $\bar{\phi}$	3.0	35	50	70	8.5 $\bar{\dagger}$		8.0	2.0	80	P-AA	Ge	100J		TO 3	
3547	2N1539	.80 $\bar{\phi}$	5.0		40	20	30	2.0 $\bar{\phi}$	3.0	50	75	100	4.0 $\bar{\dagger}$		5.0	2.0	25	P-AA	Ge	100J		TO 3	
3548	2N1539A	.80 $\bar{\phi}$	5.0		40	20	20	2.0 $\bar{\phi}$	3.0	50		100	4.0 $\bar{\dagger}$	.30	5.0	2.0	25	P-AA	Ge	100J		TO 3	
3549	2N1540	.80 $\bar{\phi}$	5.0		60	30	45	2.0 $\bar{\phi}$	3.0	50	75	100	4.0 $\bar{\dagger}$		5.0	2.0	40	P-AA	Ge	100J		TO 3	
3550	2N1540A	.80 $\bar{\phi}$	5.0		60	30	30	2.0 $\bar{\phi}$	3.0	50		100	4.0 $\bar{\dagger}$	.30	5.0	2.0	40	P-AA	Ge	100J		TO 3	
3551	2N1541	.80 $\bar{\phi}$	5.0		80	40	60	2.0 $\bar{\phi}$	3.0	50	75	100	4.0 $\bar{\dagger}$		5.0	2.0	55	P-AA	Ge	100J		TO 3	
3552	2N1541A	.80 $\bar{\phi}$	5.0		80	40	40	2.0 $\bar{\phi}$	3.0	50		100	4.0 $\bar{\dagger}$	.30	5.0	2.0	55	P-AA	Ge	100J		TO 3	

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## 2. POWER TRANSISTORS

IN ORDER OF DECREASING MAXIMUM THERMAL RESISTANCE, AND TYPE NO.



LINE No.	TYPE No.	Max. Thermal Res. in Free Air (°C/W)	ABSOLUTE MAX. RATINGS @ 25°C					CURRENT GAIN $h_{FE}$ or $h_{fe} - \dagger$					$f_{\alpha b}$ or $f_{\alpha e - \dagger}$ (Kc)	Max. Sat. Res. (ohm)	$t_r$ ( $\mu$ sec)	MAX. COLL. CUR.		DESCRIPTION				
			$I_C$ (amp.)	$I_B$ (amp.)	$V_{CB}$ (volt)	$V_{EB}$ (volt)	$V_{CE}$ (volt)	BIAS		Min.	Center	Max.				$I_{CBO}$ (ma)	@ $V_{CB}$ (volt)	Type P - PNP N - NPN	Mat.	Max. Temp. (°C)	S T A T U S	Dwg. No.
								$V_{CB}$ (volt)	$I_C$ (amp.)													
3553	2N1542	.80	5.0		100	50	75	2.0	3.0	50	75	100	4.0		5.0	2.0	65	P-AA	Ge	100J		TO 3
3554	2N1542A	.80	5.0		100	50	50	2.0	3.0	50		100	4.0	.30	5.0	2.0	65	P-AA	Ge	100J		TO 3
3555	2N1543	.80	5.0		120	60	90	2.0	3.0	50	75	100	4.0		5.0	2.0	80	P-AA	Ge	100J		TO 3
3556	2N1544	.80	5.0		40	20	30	2.0	3.0	75	110	150	4.0		5.0	2.0	25	P-AA	Ge	100J		TO 3
3557	2N1544A	.80	5.0		40	20	20	2.0	3.0	75		150	4.0	.15	5.0	2.0	25	P-AA	Ge	100J		TO 3
3558	2N1545	.80	5.0		60	30	45	2.0	3.0	75	110	150	4.0		5.0	2.0	40	P-AA	Ge	100J		TO 3
3559	2N1545A	.80	5.0		60	30	30	2.0	3.0	75		150	4.0	.15	5.0	2.0	40	P-AA	Ge	100J		TO 3
3560	2N1546	.80	5.0		80	40	60	2.0	3.0	75	110	150	4.0		5.0	2.0	55	P-AA	Ge	100J		TO 3
3561	2N1546A	.80	5.0		80	40	40	2.0	3.0	75		150	4.0	.15	5.0	2.0	55	P-AA	Ge	100J		TO 3
3562	2N1547	.80	5.0		100	50	75	2.0	3.0	75	110	150	4.0		5.0	2.0	65	P-AA	Ge	100J		TO 3
3563	2N1547A	.80	5.0		100	50	50	2.0	3.0	75		150	4.0	.15	5.0	2.0	65	P-AA	Ge	100J		TO 3
3564	2N1548	.80	5.0		120	60	90	2.0	3.0	75	110	150	4.0		5.0	2.0	80	P-AA	Ge	100J		TO 3
3565	2N1549	.80	15		40	20	30	2.0	10	10	20	30	10		5.0	3.0	25	P-AA	Ge	100J		TO 3
3566	2N1549A	.80	15		40	20	20	2.0	10	10		30	10	.10	5.0	3.0	25	P-AA	Ge	100J		TO 3
3567	2N1550	.80	15		60	30	45	2.0	10	10	20	30	10		5.0	3.0	40	P-AA	Ge	100J		TO 3
3568	2N1550A	.80	15		60	30	30	2.0	10	10		30	10	.10	5.0	3.0	40	P-AA	Ge	100J		TO 3
3569	2N1551	.80	15		80	40	60	2.0	10	10	20	30	10		5.0	3.0	55	P-AA	Ge	100J		TO 3
3570	2N1551A	.80	15		80	40	40	2.0	10	10		30	10	.10	5.0	3.0	55	P-AA	Ge	100J		TO 3
3571	2N1552	.80	15		100	50	75	2.0	10	10	20	30	10		5.0	3.0	65	P-AA	Ge	100J		TO 3
3572	2N1552A	.80	15		100	50	50	2.0	10	10		30	10	.10	5.0	3.0	65	P-AA	Ge	100J		TO 3
3573	2N1553	.80	15		40	20	30	2.0	10	30	45	60	6.0		10	3.0	25	P-AA	Ge	100J		TO 3
3574	2N1553A	.80	15		40	20	20	2.0	10	30		60	6.0	.07	10	3.0	25	P-AA	Ge	100J		TO 3
3575	2N1554	.80	15		68	30	40	2.0	10	30	45	60	6.0		10	3.0	40	P-AA	Ge	100J		TO 3
3576	2N1554A	.80	15		60	30	30	2.0	10	30		60	6.0	.07	10	3.0	40	P-AA	Ge	100J		TO 3
3577	2N1555	.80	15		80	40	60	2.0	10	30	45	60	6.0		10	3.0	55	P-AA	Ge	100J		TO 3
3578	2N1555A	.80	15		80	40	40	2.0	10	30		60	6.0	.07	10	3.0	55	P-AA	Ge	100J		TO 3
3579	2N1556	.80	15		100	50	75	2.0	10	30	45	60	6.0		10	3.0	65	P-AA	Ge	100J		TO 3
3580	2N1556A	.80	15		100	50	50	2.0	10	30		60	6.0	.07	10	3.0	65	P-AA	Ge	100J		TO 3
3581	2N1557	.80	15		40	20	30	2.0	10	50	75	100	5.0		10	3.0	25	P-AA	Ge	100J		TO 3
3582	2N1557A	.80	15		40	20	20	2.0	10	50		100	5.0	.05	10	3.0	25	P-AA	Ge	100J		TO 3
3583	2N1558	.80	15		60	30	40	2.0	10	50	75	100	5.0		10	3.0	40	P-AA	Ge	100J		TO 3
3584	2N1558A	.80	15		60	30	30	2.0	10	50		100	5.0	.05	10	3.0	40	P-AA	Ge	100J		TO 3
3585	2N1559	.80	15		80	40	60	2.0	10	50	75	100	5.0		10	3.0	55	P-AA	Ge	100J		TO 3
3586	2N1559A	.80	15		80	40	40	2.0	10	50		100	5.0	.05	10	3.0	55	P-AA	Ge	100J		TO 3
3587	2N1560	.80	15		100	50	75	2.0	10	50	75	100	5.0		10	3.0	65	P-AA	Ge	100J		TO 3
3588	2N1560A	.80	15		100	50	50	2.0	10	50		100	5.0	.05	10	3.0	65	P-AA	Ge	100J		TO 3
3589	2N1651	.80	25	2.5	60	1.5	60	1.5	25	20	40		1500		7.0	5.0	60	P-DA†	Ge	110J		TO41
3590	2N1652	.80	25	2.5	100	1.5	100	1.5	25	20	40		1500		7.0	5.0	80	P-DA†	Ge	110J		TO41
3591	2N1653	.80	25	2.5	120	1.5	120	1.5	25	20	40		1500		7.0	5.0	100	P-DA†	Ge	110J		TO41
3592	2N1751	.80	25	2.5	80	2.5	80	1.5	20	30	60	90	2000	.03		5.0	80	P-DA	Ge	110		TO 3
3594▼	2N2285	.80	25	2.5	60	1.5	60	1.5	25	20	40		1500	.25	7.0	5.0	60	P-DA	Ge	110J		TO 3
3595▼	2N2286	.80	25	2.5	100	1.5	100	1.5	25	20	40		1500	.25	7.0	5.0	80	P-DA	Ge	110J		TO 3
3596▼	2N2287	.80	25	2.5	120	1.5	120	1.5	25	20	40		1500	.25	7.0	5.0	100	P-DA	Ge	110J		TO 3
3597▼	2N2288	.80	10	1.0	40	1.0	40	2.0	5.0	20		60	1000	.20	5.0	2.0	25	P-DA	Ge	110J		TO 3
3598▼	2N2289	.80	10	1.0	80	1.0	80	2.0	5.0	20		60	1000	.20	5.0	5.0	60	P-DA	Ge	110J		TO 3

## 2. POWER TRANSISTORS

IN ORDER OF DECREASING MAXIMUM THERMAL RESISTANCE, AND TYPE NO.



LINE No.	TYPE No.	Max. Thermal Res. in Free Air (°C/W)	ABSOLUTE MAX. RATINGS @ 25°C					CURRENT GAIN $h_{FE}$ or $h_{fe} - \dagger$					$f_{\alpha b}$ or $f_{\alpha e} - \dagger$ (Kc)	Max. Sat. Res. (ohm)	$t_r$ ( $\mu$ sec)	MAX. COLL. CUR.		DESCRIPTION					
			$I_C$ (amp.)	$I_B$ (amp.)	$V_{CB}$ (volt)	$V_{EB}$ (volt)	$V_{CE}$ (volt)	BIAS			Min.	Center				Max.	$I_{CBO}$ (ma)	@ $V_{CB}$ (volt)	Type P - PNP N - NPN	Mat.	Max. Temp. (°C)	STATUS	Dwg. No.
								$V_{CB}$ (volt)	$I_C$ (amp.)														
3599▼	2N2290	.80	10	1.0	120	1.0	120	2.0	5.0	20		60	1000	.20	5.0	5.0	100	P-DA	Ge	110J		TO 3	
3600▼	2N2291	.80	10	1.0	40	1.0	40	2.0	5.0	50		120	1000	.20	5.0	2.0	25	P-DA	Ge	110J		TO 3	
3601▼	2N2292	.80	10	1.0	80	1.0	80	2.0	5.0	50		120	1000	.20	5.0	5.0	60	P-DA	Ge	110J		TO 3	
3602▼	2N2293	.80	10	1.0	120	1.0	120	2.0	5.0	50		120	1000	.20	5.0	5.0	100	P-DA	Ge	110J		TO 3	
3603▼	2N2294	.80	10	1.0	40	1.0	40	2.0	5.0	50		120	1000	.20	5.0	2.0	25	P-DA	Ge	110J		TO41	
3604▼	2N2295	.80	10	1.0	80	1.0	80	2.0	5.0	50		120	1000	.20	5.0	5.0	60	P-DA	Ge	110J		TO41	
3605▼	2N2296	.80	10	1.0	120	1.0	120	2.0	5.0	50		120	1000	.20	5.0	5.0	100	P-DA	Ge	110J		TO41	
3606#	2SB203	.80			40	40	30	1.5 $\emptyset$	15	20	40		3.0 $\dagger$	.07	5.0	40	P-A	Ge	85J				
3607#	2SB204	.80			40	40	30	1.5 $\emptyset$	15	50	100		3.0 $\dagger$	.05	5.0	40	P-A	Ge	85J				
3608#	2SB205	.80			80	40	60	1.5 $\emptyset$	15	20	40		3.0 $\dagger$	.07	5.0	80	P-A	Ge	85J				
3609#	2SB206	.80			80	40	60	1.5 $\emptyset$	15	50	100		3.0 $\dagger$	.05	5.0	80	P-A	Ge	85J				
3610#	2SB207	.80			100	40	75	1.5 $\emptyset$	15	20	40		3.0 $\dagger$	.07	5.0	100	P-A	Ge	85J				
3611#	2SB208	.80			100	40	75	1.5 $\emptyset$	15	50	100		3.0 $\dagger$	.50	5.0	100	P-A	Ge	85J				
3612#	2SB209	.80			40	40	30	1.5 $\emptyset$	15	20	40		3.0 $\dagger$	.07	5.0	40	P-A	Ge	85J				
3613#	2SB210	.80			40	40	30	1.5 $\emptyset$	15	50	100		3.0 $\dagger$	.05	5.0	40	P-A	Ge	85J				
3614#	2SB211	.80			80	40	60	1.5 $\emptyset$	15	20	40		3.0 $\dagger$	.07	5.0	80	P-A	Ge	85J				
3615#	2SB212	.80			80	40	60	1.5 $\emptyset$	15	50	100		3.0 $\dagger$	.05	5.0	80	P-A	Ge	85J				
3616#	2SB213	.80			100	40	75	1.5 $\emptyset$	15	20	40		3.0 $\dagger$	.07	5.0	100	P-A	Ge	85J				
3617#	2SB214	.80			100	40	75	1.5 $\emptyset$	15	20	40		3.0 $\dagger$	.05	5.0	100	P-A	Ge	85J				
3618#	2SB235	.80	15		80	25	80	1.5 $\emptyset$	15	43	70	190	230		10	80	P-A*	Ge	75J		TO36		
3619#	2SB236	.80	15		60	40	60	1.5 $\emptyset$	15	43	70	190	230		10	60	P-A*	Ge	75J		TO36		
3620#	2SB237	.80	15		36	25	36	1.5 $\emptyset$	15	43	70	190	230		10	36	P-A*	Ge	75J		TO36		
3621#	2SB258	.80			120	1.0	115	1.5 $\emptyset$	15	15	35	55	1500		20	120	P-D*	Ge	75J		TO36		
3622#	2SB259	.80			80	1.0	75	1.5 $\emptyset$	15	15	35	55	1500		20	80	P-D*	Ge	75J		TO36		
3623#	2SB260	.80	15		50	1.0	45	1.5 $\emptyset$	15	15	35	55	1500		20	50	P-D*	Ge	75J		TO36		
3624	3N49	.80 $\emptyset$	15 $\emptyset$	2.0	60	28	35	2.0 $\emptyset$	5.0	30	55	120	600 $\Delta$	.08	4.0	3.0	60	P-A4	Ge	100J		TO36	
3625	3N50	.80 $\emptyset$	15 $\emptyset$	2.0	80	28	50	2.0 $\emptyset$	5.0	20	40	80	300 $\Delta$	.08	6.0	3.0	80	P-A4	Ge	100J		TO36	
3626	3N51	.80 $\emptyset$	15 $\emptyset$	2.0	40	28	25	2.0 $\emptyset$	5.0	30	55	120	500 $\Delta$	.08	4.0	3.0	40	P-A4	Ge	100J		TO36	
3627	3N52	.80 $\emptyset$	15 $\emptyset$	2.0	60	28	40	2.0 $\emptyset$	5.0	20	40	80	300 $\Delta$	.08	6.0	3.0	60	P-A4	Ge	100J		TO36	
3628	B1181	.80	25		160	2.0	160	1.5	15		60		2000	.03	2.0	10	100	P-DA		110		TO 3	
3629▼	TS610	.80	5.0		25	10	20	2.0	2.0	15			4.0		25	5.0	25	P-A	Ge	100		TO 3	
3630	2N1015	.70 $\emptyset$	7.5	5.0	30	25	30	4.0 $\emptyset$	2.0	10	14		300	.75	6.0	10	30	N-FA	Si	150J		MT 1	
3631	2N1015A	.70 $\emptyset$	7.5	5.0	60	25	60	4.0 $\emptyset$	2.0	10	14		300	.75	6.0	10	60	N-FA	Si	150J		MT 1	
3632	2N1015B	.70 $\emptyset$	7.5	5.0	100	25	100	4.0 $\emptyset$	2.0	10	14		300	.75	6.0	10	100	N-FA	Si	150J		MT 1	
3633	2N1015C	.70 $\emptyset$	7.5	5.0	150	25	150	4.0 $\emptyset$	2.0	10	14		300	.75	6.0	10	150	N-FA	Si	150J		MT 1	
3634	2N1015D	.70 $\emptyset$	7.5	5.0	200	25	200	4.0 $\emptyset$	2.0	10	14		300	.75	6.0	10	200	N-FA	Si	150J		MT 1	
3635	2N1016	.70 $\emptyset$	7.5	5.0	30	25	30	4.0 $\emptyset$	5.0	10	18		300	.50	6.0	10	30	N-FA	Si	150J		MT 1	
3636	2N1016A	.70 $\emptyset$	7.5	5.0	60	25	60	4.0 $\emptyset$	5.0	10	18		300	.50	6.0	10	60	N-FA	Si	150J		MT 1	
3637	2N1016B	.70 $\emptyset$	7.5	5.0	100	25	100	4.0 $\emptyset$	5.0	10	18		300	.50	6.0	10	100	N-FA	Si	150J	F	MT 1	
3638	2N1016C	.70 $\emptyset$	7.5	5.0	150	25	150	4.0 $\emptyset$	5.0	10	18		300	.50	6.0	10	150	N-FA	Si	150J		MT 1	
3639	2N1016D	.70 $\emptyset$	7.5	5.0	200	25	200	4.0 $\emptyset$	5.0	10	18		300	.50	6.0	10	200	N-FA	Si	150J		MT 1	
3640◆#	NKT501	.70	25	4.0	60	12	60	1.5	25	12			650			.30	1.5	P	Ge	100		TO36	
3641◆#	NKT502	.70	25	4.0	30	12	30	1.5	25	12			650			.30	1.5	P	Ge	100		TO36	
3642◆#	NKT503	.70	25	4.0	60	12	60	1.5	10	12			650			.30	1.5	P	Ge	100		TO36	
3643◆#	NKT504	.70	25	4.0	30	12	30	1.5	10	12			650			.30	1.5	P	Ge	100		TO36	

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## 2. POWER TRANSISTORS

IN ORDER OF DECREASING MAXIMUM THERMAL RESISTANCE, AND TYPE NO.



LINE No.	TYPE No.	Max. Thermal Res. in Free Air (°C/W)	ABSOLUTE MAX. RATINGS @ 25°C					CURRENT GAIN $h_{FE}$ or $h_{fe} - f$					$f_{\alpha b}$ or $f_{\alpha e - f}$ (Kc)	Max. Sat. Res. (ohm)	$t_r$ (μsec)	MAX. COLL. CUR.		DESCRIPTION					
			$I_C$ (amp.)	$I_B$ (amp.)	$V_{CB}$ (volt)	$V_{EB}$ (volt)	$V_{CE}$ (volt)	BIAS			Min.	Center				Max.	$I_{CBO}$ (ma)	@ $V_{CB}$ (volt)	Type P - PNP N - NPN	Mat.	Max. Temp. (°C)	STATUS	Dwg. No.
								$V_{CB}$ (volt)	$I_C$ (amp.)														
3644▼	SEC1477	.70∅			50	9.0	50§		.50	1000				2.0				N	Si	200		MT 1	
3645▼	SEC1478	.70∅			100	9.0	100§		.50	1000				2.0				N	Si	200		MT 1	
3646▼	SEC1479	.70∅			50	9.0	50§		2.0	1000				2.0				N	Si	200		MT 1	
3647▼	SEC1480	.70∅			100	9.0	100§		2.0	1000				2.0				N	Si	200		MT 1	
3648#	STX5/3010	.70	5.0		30	2.0	30	15	5.0	10		25	10M			5.0	30	N	Si	150			
3649#	STX5/3025	.70	5.0		30	2.0	30	15	5.0	25			10M			5.0	30	N	Si	150			
3650#	STX5/5010	.70	5.0		50	2.0	50	15	5.0	10		25	10M			5.0	30	N	Si	150			
3651#	STX5/5025	.70	5.0		50	2.0	50	15	5.0	25			10M			5.0	50	N	Si	150			
3652#	STX5/6010	.70	5.0		60	2.0	60	15	5.0	10		25	10M			5.0	60	N	Si	150			
3653#	STX5/6025	.70	5.0		60	2.0	60	15	5.0	25			10M			5.0	60	N	Si	150			
3654#	STX5/7010	.70	5.0		70	2.0	70	15	5.0	10		25	10M			5.0	70	N	Si	150			
3655#	STX5/7025	.70	5.0		70	2.0	70	15	5.0	25			10M			5.0	70	N	Si	150			
3656	2N173	.60∅	15	4.0	60	40	45	2.0	5.0	35		70	10†	.09	15	4.0	60	P-A	Ge	100J		TO36	
3657	2N174	.60∅	15	4.0	80	60	55	2.0	5.0	25		50	10†	.08	15	4.0	80	P-A	Ge	100J	M	TO36	
3658	2N174A	.60∅	13	4.0	80	60	40	2.0	1.2	40	55	80	100	.06	15	15	80	P-A	Ge	100J	F	TO 6	
3659	2N277	.60∅	15	4.0	40	20	25	2.0	5.0	35		70	10†		15	8.0	40	P-A	Ge	100J		TO36	
3660	2N278	.60∅	15	4.0	50	30	30	2.0	5.0	35		70	10†	.09	15	4.0	50	P-A	Ge	100J		TO36	
3661	2N441	.60∅	15	4.0	40	20	25	2.0	5.0	20		40	10†		15	8.0	40	P-A	Ge	100J		TO36	
3661a	2N442	.60∅	15	4.0	50	30	30	2.0	5.0	20		40	10†		15	4.0	50	P-A	Ge	100J		TO36	
3662	2N443	.60∅	15	4.0	60	40	45	2.0	5.0	20		40	10†	.09	15	4.0	60	P-A	Ge	100J		TO36	
3663	2N1099	.60∅	15	4.0	80	40	55	2.0	5.0	35		70	10†	.06	15	4.0	80	P-A	Ge	100J		TO36	
3664	2N1100	.60∅	15	4.0	100	80	65	2.0	5.0	25		50	10†	.06	15	4.0	100	P-A	Ge	100J	N	TO36	
3665	2N1358	.60∅	15	4.0	80	60	40	2.0	1.2	40	55	80	10†	.06	15	4.0	80	P-A	Ge	100J	A	TO36	
3666	2N1412	.60∅	15	4.0	100	60	65	2.0	5.0	25		50	10†	.06	15	4.0	100	P-A	Ge	100J	N	TO36	
3667	2N1970	.60∅	15	4.0	100	40	50	2.0	5.0	17		40	10†	.09	15	4.0	100	P-A	Ge	100J		TO36	
3668▼#	2G210	.50	6.0	2.0	60	20	60	1.5∅	5.0	25		90	400§	.10		1.0	20	P-A	Ge	95J		MD 6	
3669	2N511	.50∅	25	5.0	40	30	50	2.0∅	10	20		60	260§	.05		2.0	20	P-A	Ge	100J		MD 4	
3670	2N511A	.50∅	25	5.0	60	30	60	2.0∅	10	20		60	260§	.05		2.0	30	P-A	Ge	100J		MD 4	
3671	2N511B	.50∅	25	5.0	80	30	65	2.0∅	10	20		60	260§	.05		2.0	40	P-A	Ge	100J		MD 4	
3672	2N512	.50∅	25	5.0	40	30	50	2.0∅	10	20		60	260§	.70		2.0	20	P-A	Ge	100J		MD 4	
3673	2N512A	.50∅	25	5.0	60	30	60	2.0∅	10	20		60	260§	.70		2.0	30	P-A	Ge	100J		MD 4	
3674	2N512B	.50∅	25	5.0	80	30	65	2.0∅	15	20		60	280§	.07		2.0	40	P-A	Ge	100J		MD 4	
3675	2N513	.50∅	25	5.0	40	30	50	2.0∅	20	20		60	300§	.75		2.0	20	P-A	Ge	100J		MD 4	
3676	2N513A	.50∅	25	5.0	60	30	60	2.0∅	20	20		60	300§	.75		2.0	30	P-A	Ge	100J		MD 4	
3677	2N513B	.50∅	25	5.0	80	30	65	2.0∅	20	20		60	300§	.75		2.0	40	P-A	Ge	100J		MD 4	
3678	2N514	.50∅	25	5.0	40	30	50	2.0∅	25	20		60	350§	.80		2.0	20	P-A	Ge	100J		MD 4	
3679	2N514A	.50∅	25	5.0	60	30	60	2.0∅	25	20		60	350§	.80		2.0	30	P-A	Ge	100J		MD 4	
3680	2N514B	.50∅	25	5.0	80	30	65	2.0∅	25	20		60	350§	.80		2.0	40	P-A	Ge	100J		MD 4	
3681	2N1046	.50∅	10	1.3	100	1.5	50	1.0∅	1.5	40	110		20000	1.0		1.0	40	P-DA	Ge	100J	N	MD 5	
3682	2N1046A	.50∅	10	1.3	130	1.5	50	1.0∅	4.0	20	30		20000	.25		1.0	40	P-DA	Ge	100J		MD 5	
3683	2N1046B	.50∅	10	1.3	130	1.5	50	1.0∅	10	10	25		20000	.10		1.0	40	P-DA	Ge	100J		MD 5	
3684	2N1907	.50∅	20	3.0	100	1.5	100	1.5∅	15	10			20000§	.07		.30	3.0	P-ADA	Ge	100J		TO 3	
3685	2N1908	.50∅	20	3.0	130	1.5	130	1.5∅	15	10			20000§	.07		.30	3.0	P-ADA	Ge	100J		TO 3	
3686	2N1936	.50∅	30		4.0	60		10	10	10		50	7000§	.25				N-ME	Si	175J		MT18	
3687	2N1937	.50∅	30		4.0	80		10	10	10		50	7000§	.25				N-ME	Si	175J		MT18	

## 2. POWER TRANSISTORS

IN ORDER OF DECREASING MAXIMUM THERMAL RESISTANCE, AND TYPE NO.



LINE No.	TYPE No.	Max. Thermal Res. in Free Air (°C/W)	ABSOLUTE MAX. RATINGS @ 25°C					CURRENT GAIN $h_{FE}$ or $h_{fe} - f$					$f_{\alpha b}$ or $f_{\alpha e - f}$ (Kc)	Max. Sat. Res. (ohm)	$t_r$ (µsec)	MAX. COLL. CUR.		DESCRIPTION					
			$I_C$ (amp.)	$I_B$ (amp.)	$V_{CB}$ (volt)	$V_{EB}$ (volt)	$V_{CE}$ (volt)	BIAS			Min.	Center				Max.	$I_{CBO}$ (ma)	@ $V_{CB}$ (volt)	Type P - PNP N - NPN	Mat.	Max. Temp. (°C)	S T A T U S	Dwg. No.
								$V_{CB}$ (volt)	$I_C$ (amp.)														
3688	2N1980	.50	15	5.0	50	20	30	2.0	5.0	50		100	3.0	.10		.30	2.0	P-A	Ge	100J		TO36	
3689	2N1981	.50	15	5.0	70	20	40	2.0	5.0	50		100	3.0	.10		.30	2.0	P-A	Ge	100J		TO36	
3690	2N1982	.50	15	5.0	90	20	50	2.0	5.0	50		100	3.0	.10		.30	2.0	P-A	Ge	100J		TO36	
3691	2N2075	.50	15		80	40	65	2.0	5.0	20		40	10		6.0	15	80	P	Ge	110J		TO36	
3692	2N2075A	.50	15		80	40	65	2.0	5.0	20		40	10		6.0	15	80	P	Ge	110J		TO36	
3693	2N2076	.50	15		70	35	55	2.0	5.0	20		40	10		6.0	15	70	P	Ge	110J		TO36	
3694	2N2076A	.50	15		70	35	55	2.0	5.0	20		40	10		6.0	15	70	P	Ge	110J		TO36	
3695	2N2077	.50	15		50	25	45	2.0	5.0	20		40	10		6.0	15	50	P	Ge	110J		TO36	
3696	2N2077A	.50	15		50	25	45	2.0	5.0	20		40	10		6.0	15	50	P	Ge	110J		TO36	
3697	2N2078	.50	15		40	20	25	2.0	5.0	20		40	10		6.0	15	40	P	Ge	110J		TO36	
3698	2N2078A	.50	15		40	20	25	2.0	5.0	20		40	10		6.0	15	40	P	Ge	110J		TO36	
3699	2N2079	.50	15		80	40	65	2.0	5.0	35		70	10		12	15	80	P	Ge	110J		TO36	
3700	2N2079A	.50	15		80	40	65	2.0	5.0	35		70	10		12	15	80	P	Ge	110J		TO36	
3701	2N2080	.50	15		70	35	55	2.0	5.0	35		70	10		12	15	70	P	Ge	110J		TO36	
3702	2N2080A	.50	15		70	35	55	2.0	5.0	35		70	10		12	15	70	P	Ge	110J		TO36	
3703	2N2081	.50	15		50	25	45	2.0	5.0	35		70	10		12	15	50	P	Ge	110J		TO36	
3704	2N2081A	.50	15		50	25	45	2.0	5.0	35		70	10		12	15	50	P	Ge	110J		TO36	
3705	2N2082	.50	15		40	20	25	2.0	5.0	35		70	10		12	15	40	P	Ge	110J		TO36	
3706	2N2082A	.50	15		40	20	25	2.0	5.0	35		70	10		12	15	40	P	Ge	110J		TO36	
3707	2N2152	.50	30		45	25	30	2.0	5.0	50		100	2.0		4.0	45	P-A	Ge	110J		TO36		
3708	2N2152A	.50	30		45	25	30	2.0	5.0	50		100	2.0		4.0	45	P-A	Ge	110J		TO36		
3709	2N2153	.50	30		60	30	45	2.0	5.0	50		100	2.0		4.0	60	P-A	Ge	110J		TO36		
3710	2N2153A	.50	30		60	30	45	2.0	5.0	50		100	2.0		4.0	60	P-A	Ge	110J		TO36		
3711	2N2154	.50	30		75	40	60	2.0	5.0	50		100	2.0		4.0	75	P-A	Ge	110J		TO36		
3712	2N2154A	.50	30		75	40	60	2.0	5.0	50		100	2.0		4.0	75	P-A	Ge	110J		TO36		
3713	2N2155	.50	30		90	45	75	2.0	5.0	50		100	2.0		4.0	90	P-A	Ge	110J		TO36		
3714	2N2155A	.50	30		90	45	75	2.0	5.0	50		100	2.0		4.0	90	P-A	Ge	110J		TO36		
3715	2N2156	.50	30		45	25	30	2.0	5.0	80		160	2.0		4.0	45	P-A	Ge	110J		TO36		
3716	2N2156A	.50	30		45	25	30	2.0	5.0	80		160	2.0		4.0	45	P-A	Ge	110J		TO36		
3717	2N2157	.50	30		60	30	45	2.0	5.0	80		160	2.0		4.0	60	P-A	Ge	110J		TO36		
3718	2N2157A	.50	30		60	30	45	2.0	5.0	80		160	2.0		4.0	60	P-A	Ge	110J		TO36		
3719	2N2158	.50	30		75	40	60	2.0	5.0	80		160	2.0		4.0	75	P-A	Ge	110J		TO36		
3720	2N2158A	.50	30		75	40	60	2.0	5.0	80		160	2.0		4.0	75	P-A	Ge	110J		TO36		
3721	2N2159	.50	30		90	45	75	2.0	5.0	80		160	2.0		4.0	90	P-A	Ge	110J		TO36		
3722	2N2159A	.50	30		90	45	75	2.0	5.0	80		160	2.0		4.0	90	P-A	Ge	110J		TO36		
3723	2N2226	.50	10	1.0	50	15	50	6.0	10	100	360		11	.35	100			N-FA	Si	150J		MT 1	
3724	2N2227	.50	10	1.0	100	15	100	6.0	10	100	360		11	.35	100			N-FA	Si	150J		MT 1	
3725	2N2228	.50	10	1.0	150	15	150	6.0	10	100	360		11	.35	100			N-FA	Si	150J		MT 1	
3726	2N2230	.50	10	1.0	50	15	50	6.0	10	400	660		11	.35	150			N-FA	Si	150J		MT 1	
3727	2N2231	.50	10	1.0	100	15	100	6.0	10	400	660		11	.35	150			N-FA	Si	150J		MT 1	
3728	2N2232	.50	10	1.0	150	15	150	6.0	10	400	660		11	.35	150			N-FA	Si	150J		MT 1	
3729	MP500	.50	60		45	25	30	2.0	15	30		60	2.0			4.0	45	P-A	Ge	110J		TO36	
3730	MP500A	.50	60		45	25	30	2.0	15	30		60	2.0			4.0	45	P-A	Ge	110J		TO36	
3731	MP501	.50	60		60	30	45	2.0	15	30		60	2.0			4.0	60	P-A	Ge	110J		TO36	
3732	MP501A	.50	60		60	30	45	2.0	15	30		60	2.0			4.0	60	P-A	Ge	110J		TO36	

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## 2. POWER TRANSISTORS

IN ORDER OF DECREASING MAXIMUM THERMAL RESISTANCE, AND TYPE NO.



LINE No.	TYPE No.	Max. Thermal Res. in Free Air (°C/W)	ABSOLUTE MAX. RATINGS @ 25°C					CURRENT GAIN $h_{FE}$ or $h_{fe} - f$					$f_{\alpha b}$ or $f_{\alpha e - f}$ (Kc)	Max. Sat. Res. (ohm)	$t_r$ ( $\mu$ sec)	MAX. COLL. CUR.		DESCRIPTION					
			$I_C$ (amp.)	$I_B$ (amp.)	$V_{CB}$ (volt)	$V_{EB}$ (volt)	$V_{CE}$ (volt)	BIAS			Min.	Center				Max.	$I_{CBO}$ (ma)	@ $V_{CB}$ (volt)	Type P - PNP N - NPN	Mat.	Max. Temp. (°C)	S T A T U S	Dwg. No.
								$V_{CB}$ (volt)	$I_C$ (amp.)														
3733	MP502	.50	60		75	40	60	2.0	15	30		60	2.0			4.0	75	P-A	Ge	110J		TO36	
3734	MP502A	.50	60		75	40	60	2.0	15	30		60	2.0			4.0	75	P-A	Ge	110J		TO36	
3735	MP503	.50	60		90	45	75	2.0	15	30		60	2.0			4.0	90	P-A	Ge	110J		TO36	
3736	MP503A	.50	60		90	45	75	2.0	15	30		60	2.0			4.0	90	P-A	Ge	110J		TO36	
3737	MP504	.50	60		45	25	30	2.0	15	50		100	2.0			4.0	45	P-A	Ge	110J		TO36	
3738	MP504A	.50	60		45	25	30	2.0	15	50		100	2.0			4.0	45	P-A	Ge	110J		TO36	
3739	MP505	.50	60		60	30	45	2.0	15	50		100	2.0			4.0	60	P-A	Ge	110J		TO36	
3740	MP505A	.50	60		60	30	45	2.0	15	50		100	2.0			4.0	60	P-A	Ge	110J		TO36	
3741	MP506	.50	60		75	40	60	2.0	15	50		100	2.0			4.0	75	P-A	Ge	110J		TO36	
3742	MP506A	.50	60		75	40	60	2.0	15	50		100	2.0			4.0	75	P-A	Ge	110J		TO36	
3743	MP507	.50	60		90	45	75	2.0	15	50		100	2.0			4.0	90	P-A	Ge	110J		TO36	
3744	MP507A	.50	60		90	45	75	2.0	15	50		100	2.0			4.0	90	P-A	Ge	110J		TO36	
3745	ST106	.50	15	4.0	60	28	50	2.0	10	9.0		22	6.0	.05	15	7.0	60	P-A	Ge	100J		TO36	
3746	ST107	.50	15	4.0	80	28	50	2.0	10	9.0		22	6.0	.05	15	7.0	80	P-A	Ge	100J		TO36	
3747	ST108	.50	15	4.0	60	28	50	2.0	10	19		42	5.0	.05	12	7.0	60	P-A	Ge	100J		TO36	
3748	ST109	.50	15	4.0	80	28	50	2.0	10	19		42	5.0	.05	12	7.0	80	P-A	Ge	100J		TO36	
3749	ST110	.50	15	4.0	60	28	45	2.0	10	38		84	3.0	.05	10	7.0	60	P-A	Ge	100J		TO36	
3750	ST111	.50	15	4.0	80	28	45	2.0	10	38		84	3.0	.05	10	7.0	80	P-A	Ge	100J		TO36	
3751	ST112	.50	15	4.0	60	28	35	2.0	10	25			3.0	.05	10	20	60	P-A	Ge	100J		TO36	
3752	TS609	.50	15	4.0	25	20	40	2.0	5.0	20			10		15	8.0	25	P-A	Ge	100		TO36	
3753	2N1809	.45	30	10	50	15	50	4.0	10	10	14		14	.15	120	10	50	N-FA	Si	175J		MT14	
3754	2N1810	.45	30	10	100	15	100	4.0	10	10	14		14	.15	120	10	100	N-FA	Si	175J		MT14	
3755	2N1811	.45	30	10	150	15	150	4.0	10	10	14		14	.15	120	10	150	N-FA	Si	175J		MT14	
3756	2N1812	.45	30	10	200	15	200	4.0	10	10	14		14	.15	120	10	200	N-FA	Si	175J		MT14	
3757	2N1816	.45	30	10	50	15	50	4.0	15	10	13.5		14.5	.10	170	10	50	N-FA	Si	175J		MT14	
3758	2N1817	.45	30	10	100	15	100	4.0	15	10	13.5		14.5	.10	170	10	100	N-FA	Si	175J		MT14	
3759	2N1818	.45	30	10	150	15	150	4.0	15	10	13.5		14.5	.10	170	10	150	N-FA	Si	175J		MT14	
3760	2N1819	.45	30	10	200	15	200	4.0	15	10	13.5		14.5	.10	150	10	200	N-FA	Si	175J		MT14	
3761	2N1823	.45	30	10	50	15	50	4.0	20	10	12.5		16	.075	200	10	50	N-FA	Si	175J		MT14	
3762	2N1824	.45	30	10	100	15	100	4.0	20	10	12.5		16	.075	200	10	100	N-FA	Si	175J		MT14	
3763	2N1825	.45	30	10	150	15	150	4.0	20	10	12.5		16	.075	200	10	150	N-FA	Si	175J		MT14	
3764	2N1826	.45	30	10	200	15	200	4.0	20	10	12.5		16	.075	200	10	200	N-FA	Si	175J		MT14	
3765	2N2109	.45	30	10	50	15	50	4.0	10	10	14		14	.15	120	10	50	N-FA	Si	175J		MT14	
3766	2N2110	.45	30	10	100	15	100	4.0	10	10	14		14	.15	120	10	100	N-FA	Si	175J		MT17	
3767	2N2111	.45	30	10	150	15	150	4.0	10	10	14		14	.15	120	10	150	N-FA	Si	175J		MT17	
3768	2N2112	.45	30	10	200	15	200	4.0	10	10	14		14	.15	120	10	200	N-FA	Si	175J		MT17	
3769	2N2116	.45	30	10	50	15	50	4.0	15	10	13.5		14.5	.10	170	10	50	N-FA	Si	175J		MT17	
3770	2N2117	.45	30	10	100	15	100	4.0	15	10	13.5		14.5	.10	170	10	100	N-FA	Si	175J		MT17	
3771	2N2118	.45	30	10	150	15	150	4.0	15	10	13.5		14.5	.10	170	10	150	N-FA	Si	175J		MT17	
3772	2N2119	.45	30	10	200	15	200	4.0	15	10	13.5		14.5	.10	170	10	200	N-FA	Si	175J		MT17	
3773	2N2123	.45	30	10	50	15	50	4.0	20	10	12.5		16	.075	200	10	50	N-FA	Si	175J		MT17	
3774	2N2124	.45	30	10	100	15	100	4.0	20	10	12.5		16	.075	200	10	100	N-FA	Si	175J		MT17	
3775	2N2125	.45	30	10	150	15	150	4.0	20	10	12.5		16	.075	200	10	150	N-FA	Si	175J		MT17	
3776	2N2126	.45	30	10	200	15	200	4.0	20	10	12.5		16	.075	200	10	200	N-FA	Si	175J		MT17	
3777	2N574	.40	100	2.0	60	28	55	2.0	10	9.0	15	22	100	.02	20	7.0	60	P-A	Ge	100J	A	MT 7	
3778	2N574A	.40	100	2.0	80	28	60	2.0	10	9.0	15	22	100	.02	20	20	80	P-A	Ge	100J		MT 7	
3779	2N575	.40	250	3.75	60	28	50	2.0	25	10			150	.02	15	7.0	60	P-A	Ge	100J	A	MT 7	
3780	2N575A	.40	250	3.75	80	28	55	2.0	25	10			150	.02	15	20	80	P-A	Ge	100J		MT 7	
3781	2N1157	.40	40	6.0	60	28	45	2.0	40	10			200	.02	10	7.0	60	P-A	Ge	100J		MT 7	
3782	2N1157A	.40	40	6.0	80	28	50	2.0	40	10			200	.02	10	20	80	P-A	Ge	100J		MT 7	
3783	2SB64	.20	6.0		100	1.0	100	1.5	1.0	30	60	120	1500			5.0	100	P-D*	Ge	75J		TO 3	
3784	2SB69	.20	6.0		60	1.0	60	1.5	1.0	30	60	120	1500			5.0	60	P-D*	Ge	75J		TO 3	



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1T3	FTHF	687	2G527	SGSI	1858	2N78A	ΔGESY	415	2N123/5	SYL	1275	2N167A	GESY	468
2G101	TIIB	373	2G577	SGSI	1862		ETC			KSC			ETC	
2G102	TIIB	374	2G601	SGSI	1736	2N94	ΔSYL	209	2N124	ETC	171	2N168A	ΔGESY	409
2G103	TIIB	1435	2G602	SGSI	1755		ETC		2N125	ETC	227		SYL	
2G104	TIIB	1436	2G1024	SGSI	1831	2N94A	ΔSYL	230	2N126	ETC	228	2N169	ΔGESY	417
2G108	SGSI	1038	2G1025	SGSI	1843		ETC		2N128	ΔPHIL	58		ETC	
2G109	SGSI	1042	2G1026	SGSI	1849	2N97	ΔRDR	190		SPR		2N169A	ΔGESY	418
2G110	TIIB	2068	2G1027	SGSI	1859		ETC		2N129	SPR	104		ETC	
2G138	SGSI	1735	2N34	ETC	1054	2N98	RDR	208	2N130A	ETC	741		SYL	
2G139	SGSI	1742		SYL			ETC		2N131A	ETC	744	2N170	ΔGESY	47
2G140	SGSI	1762		UST		2N99	RDR	223	2N132A	ETC	747		ETC	
2G141	SGSI	1773	2N34A	ETC	176		ETC		2N133A	ETC	745	2N172	ETC	424
2G210	TIIB	3668	2N34/5	SYL	1055	2N101/13	SYL	2597	2N135	ETC	773	2N173	ΔDEL	3656
2G220	TIIB	3487	2N35	ETC	1080	2N102/13	SYL	2821		FTHF			BEN	
2G221	TIIB	3488		SYL		2N103	RDR	185	2N136	ETC	782		FTHF	
2G222	TIIB	3489	2N35/5	SYL	1081		ETC			FTHF			MOTA	
2G223	TIIB	3490	2N36	ETC	287	2N104	ΔRCAS	1071	2N137	ETC	801		RCAS	
2G224	TIIB	3491	2N37	ETC	288		ETC			FTHF			SOI	
2G225	TIIB	3492	2N38	ETC	289	2N105	ΔRCAS	326	2N138	ETC	1471		TUNE	
2G226	TIIB	3493	2N43	FTHF	1876		ETC		2N139	ΔRCAS	595	2N174	ΔDEL	3657
2G227	TIIB	3494		ETC		2N106	ETC	743		ETC			BEN	
2G228	TIIB	3495		GESY		2N107	ΔGESY	191		SYL			FTHF	
2G229	TIIB	3496	2N43A	ΔGESY	1877		ETC		2N140	ΔRCAS	606		MOTA	
2G230	TIIB	3497		ETC		2N108	ETC	290		ETC			RADF	
2G231	TIIB	3498		UST		2N109	ΔRCAS	1469		SYL			RCAS	
2G240	TIIB	3008	2N44	ΔGESY	1874		ETC		2N144/13	SYL	2822		SOI	
2G270	SGSI	1840		ETC			SYL		2N145	ETC	421		TUNE	
2G271	SGSI	1856		FTHF		2N109/5	SYL	1470	2N146	ETC	422	2N174A	ΔDEL	3658
2G301	TIIB	483		UST		2N110	ΔWEC	1719	2N147	ETC	423		FTHF	
2G302	TIIB	505	2N44A	GESY	1569	2N111	ETC	1024	2N155	BEN	2963		MOTA	
2G303	TIIB	484		ETC		2N111A	ETC	1025		CLE			SOI	
2G304	TIIB	506	2N45	ETC	1094	2N112	ETC	1026		SYL			TUNE	
2G306	TIIB	1369		UST		2N112A	ETC	1027	2N156	KSC	2964	2N175	ΔRCAS	187
2G319	SGSI	1829		ETC		2N113	ETC	1028		RAYN			ETC	
2G320	SGSI	1841	2N59	ETC	1640	2N114	ETC	1031	2N158	KSC	2965	2N176	BEN	3428
2G321	SGSI	1857	2N59A	ETC	1641	2N117	ΔTII	1188		RAYN			CLE	
2G322	SGSI	1036	2N59B	ETC	1642		TEC		2N158A	KSC	2966		MOTA	
2G323	SGSI	1039	2N59C	ETC	1642	2N118	ΔTII	1210		RAYN			RCAS	
2G324	SGSI	1043	2N60	ETC	1628		TEC		2N160	ΔRDR	1189		SYL	
2G394	SGSI	1299	2N60A	ETC	1629	2N118A	TII	1273	2N160A	ΔRDR	1190	2N178	ΔMOTA	3429
2G395	SGSI	1717	2N60B	ETC	1630		TEC		2N161	ΔRDR	1211	2N180	ETC	1072
2G396	SGSI	1743	2N60C	ETC	1631	2N119	ΔTII	1237	2N161A	ΔRDR	1212	2N181	ETC	1920
2G397	SGSI	1774	2N61	ETC	1620		TEC		2N162	ΔRDR	1276	2N182	ETC	768
2G398	SGSI	1128	2N61A	ETC	1621	2N120	ΔTII	1258	2N162A	ΔRDR	1277	2N183	ETC	783
2G401	TIIB	829	2N61B	ETC	1622		TEC		2N163	ΔRDR	1238	2N184	ETC	808
2G402	TIIB	830	2N61C	ETC	1623		TEC		2N163A	ΔRDR	1239	2N185	ETC	1472
2G403	TIIB	833	2N63	ETC	740	2N122	ΔTII	2375	2N164A	ETC	408		STCA	
2G508	SGSI	1046	2N64	ETC	742	2N123	ΔGESY	1274	2N165	ETC	305	2N186	ETC	746
2G524	SGSI	1830	2N77	ETC	133		ETC		2N166	ETC	48		FTHF	
2G525	SGSI	1842	2N78	ΔGESY	402		ITC		2N167	ΔGESY	416			
2G526	SGSI	1848		ETC			KSC			ETC				

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2N186A	ΔGESY ETC FTHF	1659	2N217	ΔRCAS ETC SYL	1473	2N243	ΔTII NAS	2540	2N277	ΔDEL BEN	3659	2N297A	ΔDEL BEN CLE MOTA	3150
2N187	ETC FTHF	748	2N218	ΔRCAS ETC SYL	596	2N244	ΔTII NAS	2541		FTHF MOTA RCAS SOI		2N301	ΔRCAS BEN CLE SYL TUNE	3430
2N187A	ETC FTHF GESY	1660	2N219	ΔRCAS ETC	607	2N247	SYL	632		TUNE				
2N188	ETC	754	2N220	ΔRCAS ETC	188	2N249	ETC	2214	2N278	ΔDEL	3660	2N301A	ΔRCAS BEN CLE SYL TUNE	3431
2N188A	ΔGESY ETC FTHF	1664	2N223	ΔPHIL ETC	1916	2N250	ΔTII BEN CLE STCA	3420		BEN MOTA RCAS SOI TUNE				
2N189	ΔGESY ETC FTHF	454	2N224	ΔPHIL ETC	1914	2N251	ΔTII BEN STCA	3421	2N279	ΔAMP ETC	930	2N302	ETC	1259
2N190	ΔGESY ETC FTHF	455	2N225	ΔPHIL ETC	1915	2N252	ETC	127	2N306	ΔSYL ETC	186	2N307	ΔSYL BEN TUNE	2888
2N191	ΔGESY ETC FTHF	456	2N226	ΔPHIL ETC	1906	2N253	ETC	425		MULB				
2N192	ΔGESY ETC	459	2N227	ΔPHIL ETC	1907	2N254	ETC	426	2N280	ΔAMP ETC MULB	931	2N307A	ΔSYL BEN TUNE	2973
2N193	ETC SYL	210	2N228	ΔSYL ETC	177	2N255	CLE BEN SYL	2968	2N281	ΔAMP ETC MULB	1573	2N308	ETC	128
2N194	ΔSYL ETC	211	2N229	ΔSYL ETC	215	2N255A	BEN	2969	2N282	ΔAMP ETC MULB	1574	2N309	ETC	129
2N194A	ΔSYL ETC	212	2N232	ΔPHIL ETC	1	2N256	CLE SYL	2970	2N283	ΔAMP ETC MULB	939	2N310	ETC	130
2N206	ETC	453	2N233	ΔSYL ETC	216	2N256A	BEN	2971	2N284	ΔAMP ETC MULB	936	2N311	ETC GIC	1475
2N207	ΔPHIL ETC	200	2N233A	ΔSYL ETC	217	2N257	ΔCLE BEN INTG SYL	3225	2N284A	ΔAMP ETC MULB	937	2N312	ETC GIC SYL	1476
2N207A	ΔPHIL ETC	201	2N234A	ΔBEN ETC	3144	2N257B	CLE	3226	2N285A	ΔBEN CLE SYL	3149	2N315	ΔGIC ETC ITC KSC UST	1213
2N207B	ΔPHIL ETC	202	2N235A	ΔBEN CLE SYL	3145	2N257G	CLE	3227		ETC MULB				
2N211	ΔSYL ETC	213	2N235B	ΔBEN SYL	3146	2N257W	CLE	3228	2N285	ΔAMP ETC MULB	936	2N315A	ΔGIC ETC ITC KSC UST	1214
2N212	ΔSYL ETC	231	2N236A	ΔBEN ETC	3147	2N265	ΔGESY ETC	460	2N291	ETC	1650			
2N213	ΔSYL ETC	1159	2N236B	ΔBEN SYL	3148	2N268	ΔCLE BEN INTG	3229	2N292	ΔGESY ETC SYL	405	2N316	ΔGIC ETC ITC KSC UST	1333
2N213A	ΔSYL ETC	1053	2N237	ETC	1057	2N268A	ΔCLE BEN	3230	2N293	ΔGESY ETC	406			
2N214	ΔSYL ETC	1615	2N238	ETC	1474	2N269	ΔRCAS ETC	893	2N296	ΔSYL BEN CLE BEN	2972	2N316A	ΔGIC ETC ITC KSC UST	1334
2N215	ΔRCAS ETC	1073	2N240	PHIL SPR	126	2N270	ΔRCAS ETC SYL	2073	2N297	BEN CLE	3231			
2N216	ΔSYL ETC	214	2N241	ETC	756	2N271	ETC	1029						
			2N241A	ΔGESY ETC SYL	1669	2N271A	ETC	1030						
			2N242	ΔSYL BEN CLE TUNE	2967	2N274	ΔRCAS ETC	633						

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2N317	ΔGIC ETC ITC KSC UST	1373	2N328 2N328A	KSC ΔRAYN CRY GIC HUG	2201 1903	2N334 (cont.)	RAYN RDR TIIB		2N341	ΔTII NAS TEC	2626	2N359	ΔRAYN ETC ITC UST	1129
2N317A	ΔGIC ETC ITC KSC PHIL UST	1374		KSC NAS SSD WTC		2N334A	ΔGESY NAS	2331	2N341A	ΔTEC	2627	2N360	ΔRAYN ETC ITC UST	1120
2N319	ΔGESY ETC FTHF MOTA	1878	2N329A	ΔRAYN CRY GIC HUG KSC NAS SSD WTC	1908	2N335	ΔTII GESY NAS RAYN RDR TEC TIIB	1240	2N342	ΔTII NAS TEC	2628	2N361	ΔRAYN ETC ITC UST	1095
2N320	ΔGESY ETC FTHF MOTA UST	1879		CRY GIC HUG KSC NAS SSD WTC		2N335A	ΔGESY NAS	2332	2N342A	ΔTII TEC	2629	2N362	ETC ITC RAYN UST	1134
2N321	ΔGESY ETC FTHF MOTA SYL UST	1880	2N330A	SSD KSC	2229	2N335B	ΔGESY	2333	2N343	ΔTII NAS TEC	2616 2630	2N363	ETC ITC RAYN UST	1130
2N322	ΔGESY ETC FTHF MOTA	1037	2N331	ΔRCAS BEN ETC GIC KSC ITC MOTA UST	1798	2N336	ΔTII GESY NAS RAYN RDR TEC	1260	2N344	ΔPHIL SPR	35	2N364	ETC	1150
2N323	ΔGESY ETC FTHF MOTA SYL UST	1040		ETC GIC KSC ITC MOTA UST		2N336A	ΔGESY NAS	2334	2N345	ΔPHIL SPR	36	2N365	ETC	1162
2N324	ΔGESY ETC FTHF MOTA SYL	1044	2N332	ΔTII GESY NAS RAYN RDR TEC TIIB	1191	2N337	ΔTII FTHF GESY NAS RAYN RDR TEC TIIB	1000	2N346	ΔPHIL SPR	44	2N366	ETC	1182
2N326	ΔSYL	2859		GESY NAS RAYN RDR TEC TIIB		2N337A	ΔGESY	2341	2N347	RDR	2526	2N367	ETC	1074
2N327A	ΔRAYN CRY GIC HUG KSC NAS SSD WTC	1898	2N332A	ΔGESY NAS RAYN RDR TEC TIIB	2329	2N338	ΔTII FTHF GESY NAS RAYN TEC TIIB	1007	2N348	RDR	2527	2N368	ETC	1096
			2N333	ΔTII GESY NAS RAYN RDR TEC TIIB	1215	2N338A	ΔGESY	2343	2N349	RDR	2528	2N369	ETC	1127
			2N333A	ΔGESY NAS	2330	2N339	ΔTII NAS TEC	2622	2N350	ΔMOTA BEN	3432	2N370	ΔRCAS SYL	634
			2N334	ΔTII GESY NAS TEC	1278	2N339A	ΔTEC	2623	2N350A	ΔMOTA BEN	3433	2N371	ΔRCAS SYL	635
						2N340	ΔTII NAS TEC	2624	2N351	ΔMOTA BEN RCAS	3434	2N372	ΔRCAS SYL	636
						2N340A	ΔTEC	2625	2N351A	ΔMOTA BEN RCAS	3435	2N373	ΔRCAS SYL	637
									2N356	ΔGIC ETC SYL	1160	2N374	ΔRCAS SYL	638
									2N356A	ΔGIC ETC SYL	1161	2N375	ΔMOTA BEN CLE	3499
									2N357	ΔGIC ETC SYL	1241	2N376	ΔMOTA BEN RCAS CLE	3436
									2N357A	ΔGIC ETC SYL	1242	2N376A	ΔMOTA BEN CLE	3437
									2N358	ΔGIC ETC SYL	1300	2N377	ΔSYL ETC FTHF GIC GESY	1243
									2N358A	ΔGIC ETC SYL	1301			

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2N377A	ΔSYL ETC	1244	2N389 (cont.)	SIL TEC TIIB TYC		2N396A (cont.)	KSC RAYN SYL TII TUNE UST		2N404A	ΔSYL ETC GESY GIC KSC RAYN RCAS	1283	2N414 (cont.)	KSC RCAS SYL TUNE UST	
2N378	ΔTUNE BEN	3339	2N389A	SEC FTC SIL TII	3099	2N397	ΔGESY CSF ETC FTHF ITC KSC MISI RAYN SYL TII UST	1336	2N405	ΔRCAS ETC SYL	1069	2N414A	ETC GIC KSC SYL UST	1263
2N379	ΔTUNE BEN CLE	3340	2N392	ΔDEL	3232	2N398	ΔRCAS BEN ETC GIC MOTA SYL TII UST	291	2N406	ΔRCAS ETC SYL	1070	2N414B	ΔITC ETC KSC	1737
2N380	ΔTUNE BEN CLE	3341	2N393	ΔPHIL ETC GIC SPR	57	2N398A	ΔMOTA BEN ETC ETC RCAS SYL	1097	2N407	ΔRCAS ETC SYL	1477	2N414C	ΔITC ETC	1738
2N381	ΔTUNE ETC KSC SYL UST	1696	2N394	ΔGESY ETC ITC KSC UST	1192	2N399	ΔBEN SYL	3153	2N408	ΔRCAS ETC SYL	1478	2N415	ETC	1479
2N382	ΔTUNE ETC SYL UST	1711	2N394A	ΔGESY ETC	1261	2N400	BEN	3154	2N409	ΔRCAS ETC SYL	597	2N415A	ETC SYL	1305
2N383	ΔTUNE ETC SYL UST	1720	2N395	ΔGESY CSF ETC FTHF ITC KSC MISI RAYN SYL TII UST	1208	2N401	ΔBEN SYL	3155	2N410	ΔRCAS ETC SYL	598	2N416	ΔRAYN ETC GIC ITC KSC TUNE UST	1306
2N384	ΔRCAS CSF MISI	919	2N396	ΔGESY CSF ETC FTHF GIC ITC KSC MISI RAYN SYL TII TUNE UST	1281	2N402	ETC	1612	2N411	ΔRCAS ETC SYL	608	2N417	ΔRAYN ETC GIC ITC KSC SYL TUNE UST	1375
2N385	ΔSYL ETC GESY GIC	1245	2N396A	ΔGESY ETC FTHF GIC ITC KSC MISI RAYN SYL TII TUNE UST	1282	2N403	ETC	1618	2N412	ΔRCAS ETC SYL	609	2N418	ΔBEN CLE BEN SYL	3156
2N385A	ΔSYL ETC	1279				2N404	ΔRCAS BEN CSF ETC GESY GIC KSC MISI PHIL RAYN SYL TII TUNE UST	894	2N413	ΔRAYN ETC GESY GIC ITC KSC SYL TUNE UST	1151	2N419	BEN SYL	3157
2N386	ΔPHIL	3151							2N413A	SYL ETC GIC UST	1152	2N420	ΔBEN SYL	3158
2N387	ΔPHIL	3152							2N414	ΔRAYN ETC GESY GIC ITC	1262	2N420A	ΔBEN	3159
2N388	ΔSYL CSF ETC FTHF GESY GIC MISI RAYN TII	1280										2N422	ΔRAYN ETC SYL UST	1082
2N388A	ΔSYL ETC	1335										2N424	ΔTII FTC RAYN SEC SIL	3137
2N389	ΔTII FTC RAYN SEC	3098												
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2N424 (cont.)	TEC TIIB TYC		2N438A	ETC RAYN SYL	1187	2N448	ΔGESY ETC	403	2N464 (cont.)	GIC ITC MOTA		2N479	ΔTEC NAS	1768
2N424A	SEC FTC SIL TII	3100	2N439	ETC GIC SYL	784	2N449	ΔGESY ETC	410	2N465	ΔRAYN BEN ETC GIC ITC MOTA UST	1083	2N479A	TEC	1805
2N425	ΔRAYN ETC GIC KSC ITC SYL UST	1193	2N439A	ETC RAYN SYL	1270	2N450	ΔGESY ETC	1218				2N480	ΔTEC	1769
2N426	ΔRAYN ETC GIC ITC KSC SYL TII TUNE UST	1246	2N440	ETC GIC SYL	802	2N451	GESY	3233				2N480A	NAS TEC	1770
2N427	ΔRAYN ETC GESY GIC ITC KSC SYL TII TUNE UST	1326	2N440A	ETC RAYN SYL	1307	2N452	GESY	3234	2N466	ΔRAYN BEN ETC GIC ITC MOTA UST	1098	2N481	ΔRAYN ETC ITC UST	1163
2N428	ΔRAYN CSF ETC GESY GIC ITC KSC MISI PHIL SYL TII TUNE UST	1368	2N441	ΔDEL BEN P'HF MOTA RCAS SOI TUNE	3661	2N453	GESY	3235				2N482	ΔRAYN ETC ITC SYL UST	1183
2N428A	GIC	1337	2N441A	ΔDEL BEN MOTA RCAS SOI TUNE	3661a	2N454	GESY	3236				2N483	ΔRAYN ETC ITC SYL UST	1235
2N438	ETC GIC SYL	787	2N442	ΔDEL BEN MOTA RCAS SOI TUNE	3662	2N455	BEN CLE DEL STCA TIIB	3422	2N467	ΔRAYN BEN ETC GIC ITC MOTA SYL UST	1121	2N484	ΔRAYN ETC SYL UST	1308
			2N443	ΔDEL BEN MOTA RCA SOI TUNE	3662	2N456	BEN CLE DEL STCA TIIB	3423				2N485	ΔRAYN ETC ITC UST	1271
			2N444	ΔGIC ETC	1058	2N457	BEN CLE DEL STCA TIIB	3424	2N469A	ΔGIC ETC	199	2N486	ΔRAYN ETC ITC SYL UST	1338
			2N444A	ΔGIC ETC	1059	2N457A	ΔTII BEN CLE DEL	3425	2N470	ΔTEC	1799			
			2N445	ΔGIC ETC	1135	2N458	BEN CLE DEL	3426	2N471	ΔTEC	1800			
			2N445A	ΔGIC ETC	1136	2N458A	ΔTII BEN CLE DEL	3427	2N471A	TEC	1801			
			2N446	ΔGIC ETC	1216	2N459	TUNE	3342	2N472	ΔTEC	1802			
			2N446A	ΔGIC ETC	1217	2N460	ΔTUNE ETC ITC SYL	1664a	2N472A	TEC	1744	2N489	ΔGESY	2308
			2N447	ΔGIC ETC	1302	2N461	ΔTUNE ETC GESY ITC MOTA	1665	2N473	ΔTEC NAS	1763	2N490	ΔGESY	2304
			2N447A	ΔGIC ETC	1303	2N462	ETC	1060	2N474	ΔTEC NAS	1764	2N491	ΔGESY	2307
						2N463	ΔWEC	3160	2N475	ΔNAS TEC	1765	2N492	ΔGESY	2305
						2N464	ΔRAYN BEN ETC	1075	2N475A	TEC	1745	2N493	ΔGESY	2306
									2N476	ΔNAS TEC	1803	2N494	ΔGESY	2303
									2N477	ΔNAS TEC	1804	2N495	ΔPHIL	1386
									2N478	ΔNAS TEC	1767	2N496	ΔPHIL	1376
												2N497	ΔTII FSC GELC GESY NAS PSI RAYN RCAS	2761

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2N497 (cont.)	SIL TEC TIIB		2N511,A,B thru 2N514,A,B consecutively	ΔTII BEN	3669 thru 3680	2N523	ΔGIC ETC ITC KSC UST	1387	2N534	ΔPHIL ETC	63	2N553	ΔDEL BEN	3161
2N497A	ΔGESY GELC TEC TII	2631	2N515	ΔSYL ETC	218	2N523A	ΔGIC ETC ITC KSC	1388	2N535	ΔPHIL ETC	203	2N554	ΔMOTA BEN SYL	3438
2N498	ΔTII FSC GELC GESY NAS PSI RAYN SIL TEC TIIB	2762	2N516	ΔSYL ETC	219	2N524	ΔGESY CSF ETC FTHF MOTA MISI SYL	1832	2N535A	ΔPHIL ETC	204	2N555	ΔMOTA BEN	3439
2N498A	ΔGESY GELC TEC TII	2632	2N517	ΔSYL ETC	220	2N525	ΔGESY CSF ETC KSC	1844	2N535B	ΔPHIL ETC	205	2N556	ΔSYL ETC	837
2N499	ΔPHIL GIC SPR	120	2N518	ETC	1327	2N526	ΔGESY CSF ETC FTHF MISI SYL	1850	2N536	ΔPHIL ETC	206	2N557	ΔSYL ETC	838
2N501	ΔPHIL ETC GIC SPR	360	2N519	ΔGIC ETC ITC KSC SYL UST	1061	2N527	ΔGESY CSF ETC FTHF MISI MOTA SYL TUNE	1860	2N537	ΔWEC	1868	2N558	ΔSYL ETC	839
2N501/18	SYL	361	2N519A	ΔGIC ETC ITC KSC	1062	2N528	ΔWEC	2779	2N538	ΔMIN KSC	3082	2N559	ΔWEC ETC	1456
2N501A	ΔPHIL GIC SPR	362	2N520	ΔGIC ETC ITC KSC	1164	2N529	ΔGIC ETC	1153	2N538A	ΔMIN KSC	3083	2N560	ΔWEC NAS NORC	2387
2N502	ΔPHIL SPR	370	2N520A	ΔGIC ETC ITC KSC	1165	2N530	ΔGIC ETC	1166	2N539	ΔMIN KSC	3084	2N561	CLE BEN	3237
2N502A	ΔPHIL SPR	524	2N521	ΔGIC ETC ITC KSC	1284	2N531	ΔGIC ETC	1184	2N539A	ΔMIN KSC	3085	2N562	ETC	1084
2N503	ΔPHIL SPR	61	2N521A	ΔGIC ETC ITC KSC	1285	2N532	ΔGIC ETC	1194	2N540	ΔMIN KSC	3086	2N563	ETC	1084
2N504	GIC PHIL SPR	114	2N522	ΔGIC ETC ITC KSC	1355	2N533	ΔGIC ETC	1209	2N540A	ΔMIN KSC	3087	2N564	ΔGIC ETC ITC	1085
2N505	ETC	991	2N522A	ΔGIC ETC ITC KSC	1356				2N541	ΔTEC NAS	1778	2N565	ETC	1099
2N506	ETC	178							2N542	ΔTEC NAS	1779	2N566	ΔGIC ETC ITC	1100
2N507	SYL	179							2N543	ΔTEC NAS	1780	2N567	ETC	180
2N508	ΔGESY ETC FTHF MOTA	1047							2N543A	TEC	1746	2N568	ΔGIC ETC ITC	1131
									2N544	ΔRCAS SYL	639	2N569	ETC	1137
									2N545	TEC FSC TII	2666	2N570	ΔGIC ETC ITC	1138
									2N546	TEC FSC TII	2667	2N571	ETC	1167
									2N547	TEC FSC SIL TII	2668	2N572	ΔGIC ETC ITC	1168
									2N548	TEC FSC SIL TII	2669	2N574	ΔMIN	3777
									thru 2N551	thru TII	2672	2N574A	ΔMIN	3778
									consecutively			2N575	ΔMIN	3779
									2N552	TEC FSC SIL	2673	2N575A	ΔMIN	3780
												2N576	ΔSYL ETC	1721
												2N576A	ΔSYL ETC	1747

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2N578	ΔRCAS ETC GIC ITC KSC	878	2N593 2N594	ΔGIC ΔGIC TII	1067 1132	2N632	ΔRAYN ETC ITC UST	1101	2N644	ΔRCAS GIC SYL	908	2N656	ΔTII FSC GELC GESY NAS PSI RAYN RCAS SIL TEC TIIB	2763
2N579	ΔRCAS ETC GIC ITC KSC	889	2N595	ΔGIC TII	1169	2N633	ΔRAYN ETC ITC UST	1086	2N645	ΔRCAS GIC SYL	916	2N657	ΔTII FSC GELC GESY NAS PSI RAYN RCAS SIL TEC TIIB	2764
2N580	ΔRCAS ETC GIC ITC KSC	896	2N596	ΔGIC TII	1219	2N634	ΔGESY ETC	1220	2N647	ΔRCAS ETC	840	2N658	ΔRAYN ETC KSC	1587
2N581	ΔRCAS ETC GIC ITC KSC	603	2N597	ΔPHIL ETC GIC KSC	1987	2N634A	ΔGESY ETC	1221	2N649	ΔRCAS ETC	841	2N659	ΔRAYN ETC GIC KSC	1589
2N582	ΔRCAS ETC GIC ITC KSC RAYN	897	2N598	ΔPHIL ETC GIC KSC	1988	2N635	ΔGESY ETC	1309	2N649/75	KSC	842	2N660	ΔRAYN ETC KSC	1590
2N583	ΔRCAS ETC GIC ITC KSC RAYN SYL	604	2N599	ΔPHIL ETC GIC	2005	2N635A	ΔGESY ETC	1310	2N650	ΔMOTA BEN ETC SYL UST	1680	2N661	ΔRAYN ETC KSC UST	1591
2N584	ΔRCAS ETC GIC ITC KSC RAYN SYL	897	2N600	ΔPHIL	2530	2N636	ΔGESY ETC, SYL	1357	2N650A	ΔMOTA BEN ETC	1656	2N662	ΔRAYN ETC KSC	1588
2N585	ΔRCAS ETC	898	2N601	ΔPHIL	2531	2N636A	ΔGESY ETC SYL	1358	2N651	ΔMOTA BEN ETC SYL UST	1692	2N663	ΔMOTA ETC KSC SYL UST	1706
2N586	ΔRCAS ETC GIC ITC KSC RAYN SYL	604	2N602	ΔGIC SYL	900	2N637	ΔBEN CLE	3343	2N651A	ΔMOTA BEN ETC SYL	1660a	2N664	ΔMOTA ETC KSC SYL UST	1706
2N587	ΔRCAS ETC GIC ITC KSC RAYN SYL	897	2N602A	GIC	926	2N637A	ΔBEN CLE	3344	2N652	ΔMOTA BEN ETC SYL	1697	2N665	ΔDEL BEN CLE	3165
2N588	ΔRCAS ETC	898	2N603	ΔGIC SYL	906	2N637B	ΔBEN CLE	3345	2N652A	ΔMOTA BEN ETC	1668			
2N589	ΔRCAS ETC GIC ITC KSC RAYN SYL	879	2N603A	GIC	927	2N638	ΔBEN CLE	3346	2N653	ΔMOTA BEN ETC SYL	1681			
2N590	ΔRCAS ETC GIC ITC KSC RAYN SYL	604	2N604	ΔGIC SYL	911	2N638A	ΔBEN CLE	3347	2N654	ΔMOTA ETC KSC SYL UST	1693			
2N591	ΔRCAS ETC GIC ITC KSC RAYN SYL	897	2N604A	GIC	928	2N638B	ΔBEN CLE	3348	2N655	ΔMOTA ETC KSC SYL UST	1706			
2N592	ΔRCAS ETC GIC ITC KSC RAYN SYL	897	2N609	ETC	1643	2N639	ΔBEN CLE	3162						
2N593	ΔRCAS ETC GIC ITC KSC RAYN SYL	897	2N610	ETC	1632	2N639A	ΔBEN CLE	3163						
2N594	ΔRCAS ETC GIC ITC KSC RAYN SYL	897	2N611	ETC	1624	2N639B	ΔBEN CLE	3164						
2N595	ΔRCAS ETC GIC ITC KSC RAYN SYL	897	2N612	ETC	1613	2N640	ΔRCAS GIC SYL UST	660						
2N596	ΔRCAS ETC GIC ITC KSC RAYN SYL	897	2N613	ETC	1619	2N641	ΔRCAS GIC	661						
2N597	ΔRCAS ETC GIC ITC KSC RAYN SYL	897	2N617	ETC	990	2N642	ΔRCAS GIC	662						
2N598	ΔRCAS ETC GIC ITC KSC RAYN SYL	897	2N618	ΔMOTA BEN CLE	3500	2N643	ΔRCAS GIC SYL	904						
2N599	ΔRCAS ETC GIC ITC KSC RAYN SYL	897	2N624	ΔSYL ETC	807									
2N600	ΔRCAS ETC GIC ITC KSC RAYN SYL	897	2N626	ΔADV	2879									
2N601	ΔRCAS ETC GIC ITC KSC RAYN SYL	897	2N627	ΔMOTA BEN	3440									
2N602	ΔRCAS ETC GIC ITC KSC RAYN SYL	897	2N628	ΔMOTA BEN	3441									
2N603	ΔRCAS ETC GIC ITC KSC RAYN SYL	897	2N629	ΔMOTA BEN	3442									
2N604	ΔRCAS ETC GIC ITC KSC RAYN SYL	897	2N630	ΔMOTA BEN	3443									
2N605	ΔRCAS ETC GIC ITC KSC RAYN SYL	897	2N631	ΔRAYN ETC ITC, UST	1122									

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2N669	ΔMOTA BEN CLE DEL	3444	2N696 (cont.)	MOTA NAS PSI RCAS		2N699 (cont.)	TEC TII UST		2N706A (cont.)	ITC MOTA NAS PSI RCAS RAYN SYL TIIB		2N711A	TII GESY MOTA RAYN SYL TIIB	1428	
2N670	ΔPHIL ETC	2107		RAYN		2N699A	RAYN	2569				2N711B	ΔTII GESY MOTA SYL TIIB	1483	
2N671	ΔPHIL	2598		SSD		2N699B	ΔFSC	2593							
2N672	ΔPHIL ETC	2177		SYL		2N700	ΔMOTA	530							
2N673	ΔPHIL	2635		TEC		2N700A	ΔMOTA	525							
2N674	ΔPHIL ETC	2108		TII		2N701	MOTA	536		2N706B	ΔMOTA	2164			
2N675	ΔPHIL	2599	2N696A	RAYN	2562	2N702	ΔTII	1414							
2N676	ADV	2880	2N697	ΔFSC	2468		GIC MOTA NAS PSI RAYN TIIB					2N715	ΔTII NAS RAYN TIIB	2393	
2N677	ΔBEN CLE SYL	3238		GESY GIC HSDC ITC MIN MOTA NAS PSI RCAS RAYN TIIB		2N703	ΔTII	2469				2N716	ΔTII RAYN NAS TIIB	2394	
2N677A	ΔBEN CLE SYL	3239		ITC MIN MOTA NAS PSI RCAS RAYN SSD SYL TEC TII TIIB UST			GIC MOTA NAS PSI RAYN		2N706C	ΔFSC	2644				
2N677B	ΔBEN CLE SYL	3240		RAYN		2N705	ΔTII	2156				2N717	ΔFSC FTHF HSDC MIN NAS GIC PSI RAYN TEC TII	2270	
2N677C	ΔBEN CLE SYL	3241		UST			AMP FTHF GESY MOTA RAYN RCAS SYL								
2N678	ΔBEN CLE SYL	3242	2N697A	RAYN	2563	2N705A	ΔMOTA	1437		2N707	ΔFSC	2165			
2N678A	ΔBEN SYL CLE	3243	2N698	ΔFSC	2555	2N706	ΔFSC	2173							
2N678B	ΔBEN CLE SYL	3244		GESY GIC HSDC NAS PSI RAYN SSD TEC TII			GESY GIC HUG ITC MOTA NAS PSI RCAS RAYN SSD SYL TII TEC		2N707A	MOTA	2171				
2N678C	ΔBEN CLE SYL	3245		UST			RAYN RCAS SYL		2N708	ΔFSC	2223		2N717A	PSI GIC	2645
2N679	ΔSYL ETC	1170	2N699	ΔFSC	2489		RAYN SSD SYL TII TEC						2N718	ΔFSC GIC HSDC MIN NAS PSI RAYN TEC TII	2271
2N680	ETC	1481		GESY GIC HSDC ITC MIN NAS PSI RAYN SSD		2N706A	ΔTII	2174							
2N695	ΔMOTA	528		RAYN			GESY FSC GIC HUG		2N709	ΔFSC	2176				
2N696	ΔFSC FTHF GESY GIC HSDC ITC MIN	2467		UST			RAYN SSD SYL TII TEC		2N710	ΔTII	2157				
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													2N719	ΔFSC HSDC MIN NAS PSI RAYN TEC, TII	2282



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2N719A	ΔFSC PSI TII	2376	2N736A	TII	2405	2N758A	NAS	2379	2N800	RAYN	501	2N846A	PHIL	377
2N720	ΔFSC HSDC MIN NAS PSI RAYN TEC TII	2283	2N738	ΔTII TEC	2390	2N759	ΔNAS GESY	2347	2N801	RAYN	474	2N846B	ΔPHIL	1459
2N720A	ΔFSC PSI TII	2385	2N739	ΔTII TEC	2398	2N759A	NAS	2380	2N802	RAYN	475	2N849	TII	2312
2N721	FSC HUG TII	2265	2N740	ΔTII TEC	2404	2N760	ΔNAS GESY TII	2348	2N803	RAYN	498	2N850	TII	2313
2N722	FSC HUG TII	2266	2N741	MOTA SYL	1454	2N760A	NAS TII	2381	2N804	RAYN	499	2N858	ΔPHIL	1350
2N725	SYL GESY	1484	2N741A	MOTA SYL	1455	2N761	ΔNAS	2349	2N805	RAYN	512	2N859	ΔPHIL	1351
2N726	TII HUG TIIB	2146	2N742	NAS	2422	2N762	ΔNAS	2350	2N806	RAYN	513	2N860	ΔPHIL	1352
2N727	ΔTII	2145	2N743	ΔTII GIC	2166	2N768	ΔPHIL SPR	139	2N807	RAYN	514	2N861	ΔPHIL	1390
2N728	TEC	2395	2N744	ΔTII	2167	2N769	ΔPHIL SPR	140	2N808	RAYN	515	2N862	ΔPHIL	1390
2N729	TEC	2396	2N745	RAYN	1396	2N770	ΔPHIL	1424	2N809	RAYN	478	2N863	ΔPHIL	1391
2N730	ΔTII HSDC MIN RAYN TEC	2335	2N746	RAYN	1412	2N771	ΔPHIL	1430	2N810	RAYN	479	2N864	ΔPHIL	1392
2N731	ΔTII HSDC MIN NAS RAYN TEC	2336	2N747	RAYN	1416	2N772	ΔPHIL	1423	2N811	RAYN	492	2N865	ΔPHIL	1415
2N734	ΔTII NAS RAYN TEC	2389	2N748	RAYN	1785	2N773	ΔPHIL	427	2N812	RAYN	493	2N869	ΔFSC HUG	2215
2N735	ΔTII NAS TEC	2397	2N749	RAYN	1787	2N774	ΔPHIL	698	2N813	RAYN	516	2N870	FSC	2386
2N736	ΔTII RAYN NAS TEC	2403	2N750	RAYN	1784	2N775	ΔPHIL	1485	2N814	RAYN	517	2N871	FSC TII	2391
			2N751	RAYN	1783	2N776	ΔPHIL	865	2N815	RAYN	486	2N902	RAYN	1248
			2N752	ΔTEC	2406	2N777	ΔPHIL	1034	2N816	RAYN	487	2N903	RAYN	1346
			2N753	ΔTII FSC GIC NAS GESY HUG MOTA NAS ITC PSI SYL TIIB	2175	2N778	ΔPHIL	1595	2N817	RAYN	461	2N904	RAYN	1329
						2N779	ΔPHIL SPR	382	2N818	RAYN	462	2N905	RAYN	1288
						2N779A	PHIL SPR	376	2N819	RAYN	469	2N906	RAYN	1347
						2N779B	ΔPHIL	1458	2N820	RAYN	470	2N907	RAYN	1397
						2N780	ΔTII	2140	2N821	RAYN	494	2N908	RAYN	1413
						2N781	SYL GESY RAYN	1486	2N822	RAYN	495	2N909	ΔFSC TEC	2281
						2N782	SYL GESY	1487	2N823	RAYN	502	2N910	ΔFSC TII	2352
						2N783	SYL	2178	2N824	RAYN	503	2N911	ΔFSC TII	2351
						2N784	GIC SYL	2179	2N825	RAYN	488	2N912	ΔFSC	2342
						2N789	RAYN	1247	2N826	RAYN	489	2N913	FSC HUG	2220
						2N790	RAYN	1286	2N828	ΔMOTA GESY RCAS RAYN SYL	1457	2N914	ΔFSC GESY GIC HUG, PSI WEC	2221
						2N791	RAYN	1328	2N834	ΔMOTA GIC GESY NAS SYL GIC MOTA NAS SYL	2172	2N915	ΔFSC GESY	2222
						2N792	RAYN	1287	2N835	GIC MOTA NAS SYL	2170	2N916	ΔFSC GESY	2224
						2N793	RAYN	1345	2N839	ΔTEC	2124	2N917	ΔFSC	1797
						2N794	RCAS	1406	2N840	ΔTEC	2125	2N919	PSI	2640
						2N795	RCAS	1417	2N841	ΔTEC	2128	2N920	PSI GIC	2641
						2N796	RCAS	1421	2N842	TEC	2126			
						2N797	TII	1467a	2N843	TEC	2129			
						2N799	RAYN	500	2N844	ΔTEC	2132			
									2N845	ΔTEC	2133			
									2N846	PHIL SPR	375			

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2N921	PSI	2642	2N964	Δ MOTA	1464	2N1009	SYL	1063	2N1024	ΔSSD	1938	2N1046	ΔTII	3681
2N922	GIC			GESY			BEN			KSC		2N1046A	ΔTII	3682
	PSI	2643		SYL		2N1010	ΔRCAS	207		NAS		2N1046B	ΔTII	3683
	GIC			TII			ETC		2N1025	ΔSSD	1939	2N1047	ΔTII	2914
2N923	NAS	1087	2N965	ΔMOTA	1465	2N1011	BEN	3349		KSC			SEC	
2N924	NAS	1088		GESY			CLE			GIC			SIL	
2N925	NAS	1089		SYL			DEL			NAS			TEC	
2N926	NAS	1090		TII		2N1012	MOTA		2N1026	ΔSSD	1962	2N1047A	ΔTII	2915
2N927	NAS	1091	2N966	ΔMOTA	1466		ΔGIC	1171		KSC			SEC	
2N928	NAS	1092		GESY		2N1015	ETC		2N1027	ΔSSD	1980	2N1047B	ΔTII	2916
2N929	TII	2138		SYL			ΔWESY	3630		KSC			SEC	
	NAS			TII			SEC					2N1048	ΔTII	2917
	TIIB		2N968	ΔMOTA	1445	2N1015A	SIL		2N1028	ΔSSD	1984		SEC	
2N930	TII	2139	2N969	ΔMOTA	1446		ΔWESY	3631		KSC			SIL	
	NAS		2N970	ΔMOTA	1447	2N1015B	SEC		2N1029,A,B,C		3247	2N1048A	ΔTII	2918
	TIIB		2N971	ΔMOTA	1448		SIL		thru	ΔBEN	thru		SEC	
2N931	RCAS	1488	2N972	ΔMOTA	1449		ΔWESY	3632	2N1032,A,B,C	CLE	3262		TEC	
2N935	SSD	2226	2N973	ΔMOTA	1450		SEC		consecutively			2N1048B	ΔTII	2919
	NAS		2N974	ΔMOTA	1451	2N1015C	SIL		2N1034	ΔRAYN	1899		SEC	
2N936	SSD	2227	2N975	ΔMOTA	1452		ΔWESY	3633		HUG		2N1049	ΔTII	2920
	NAS		2N976	ΔPHIL	836	2N1015D	ΔWESY	3634		KSC			SEC	
2N937	SSD	2228	2N978	FSC	2200	2N1016	ΔWESY	3635		NAS			SIL	
	NAS		2N979	SPR	348		SEC			SSD			TEC	
2N938	SSD	1933	2N981	NAS	2366	2N1016A	ΔWESY	3636	2N1035	ΔRAYN	1904	2N1049A	ΔTII	2921
2N939	SSD	1960	2N982	SPR	378		SEC			HUG			SEC	
2N940	SSD	1961	2N983	SPR	379		SIL			KSC		2N1049B	ΔTII	2922
2N941	SSD	2002	2N984	SPR	371	2N1016B	ΔWESY	3637		NAS			SEC	
2N942	SSD	1990	2N985	TII	1460		SEC			SSD		2N1050	ΔTII	2923
2N943	SSD	1934	2N987	AMP	728		SIL		2N1036	ΔRAYN	1909		SEC	
2N944	SSD	1935	2N988	ΔPSI	2620	2N1016C	ΔWESY	3638		HUG			TEC	
2N945	SSD	1936	2N989	ΔPSI	2621		ΔWESY	3639		KSC		2N1050A	ΔTII	2924
2N946	SSD	1937	2N990	AMP	724	2N1016D	ΔWESY	3639		NAS			SEC	
2N955	ΔRCAS	1468	2N991	AMP	725	2N1017	ΔRAYN	1592		SSD			TEC	
2N956	ΔFSC	2407	2N992	AMP	726		ADV			WTC		2N1050B	ΔTII	2925
2N957	FSC	2052	2N993	AMP	727		ETC		2N1037	ΔRAYN	1905		SEC	
	HUG		2N994	GESY	1806	2N1018	UST			HUG		2N1051	ΔWEC	2388
2N958	PSI	2075	2N995	FSC	2216		ETC			KSC			NORC	
2N959	PSI	2076	2N1000	ΔGIC	1264	2N1019	ΔRAYN	1393		NAS		2N1052	TEC	2677
2N960	ΔMOTA	1461		ETC			KSC			SSD		2N1054	TEC	2674
	GESY		2N1007	BEN	3246	2N1020	ADV	2881		WTC		2N1055	ΔTEC	2655
	SYL			ETC		2N1021	ΔTII	3328	2N1038	ΔTII	2955	2N1056	ETC	1875
	TII		2N1008	ΔBEN	1583		DEL		2N1039	ΔTII	2956		FTHF	
2N961	ΔMOTA	1462		ETC		2N1022	BEN			CSF		2N1057	ΔGESY	1882
	GESY		2N1008A	ΔBEN	1584		ETC		2N1040	ΔTII	2957		ETC	
	SYL			ETC			SYL		thru		thru		FTHF	
	TII		2N1008B	ΔBEN	1585	2N1023	ΔRCAS	923	2N1045		2962			
2N962	ΔMOTA	1463		ETC			BEN		consecutively					
	GESY			SYL										

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2N1058	ΔSYL ETC	232	2N1098	ΔGESY ETC	1050	2N1122	ΔPHIL GIC	54	2N1141	ΔTII MOTA	2539	2N1154	ΔTII NAS	2573
2N1059	ΔSYL ETC	1616	2N1099	ΔDEL BEN	3663	2N1122A	ΔPHIL GIC	55	2N1141A	TII MOTA	2537	2N1155	ΔTII NAS	2524
2N1060	ΔWEC NAS	2045		RCAS SOI			SPR		2N1142	ΔTII MOTA	2538	2N1156	ΔTII NAS	2525
2N1065	ΔGIC ETC	901		TUNE		2N1123	ΔPHIL	2529		TII		2N1157	ΔMIN	3781
2N1066	ΔRCAS AMP	924	2N1100	ΔDEL	3664	2N1124	ΔPHIL	2109	2N1142A	TII	2534	2N1157A	ΔMIN	3782
2N1067	SIL RCAS	2780		BEN MOTA			ETC		2N1143	ΔTII MOTA	2536	2N1158	ΔPHIL	391
2N1068	SEC SIL	2801		RCAS SOI		2N1125	ΔPHIL	2111	2N1143A	TII	2535	2N1158A	PHIL	537
	RCAS			TUNE			ETC		2N1144	ΔGESY	1051	2N1159	ΔDEL	3359
2N1069	SIL	2974	2N1101	ΔSYL	1609	2N1128	ΔPHIL	1126		ETC			BEN	
	FTC			ETC			ETC		2N1145	ΔGESY	1052		ΔDEL	3360
	RCAS		2N1102	ΔSYL	1610	2N1129	ΔPHIL	1078		ETC		2N1160	BEN	
	SEC			ETC		2N1130	ΔPHIL	1079	2N1146	BEN	3501	2N1162	ΔMOTA	3361
2N1070	SIL	2975	2N110275	SYL	1611		ETC			CLE		thru	CLE	thru
	FTC		2N1107	ETC	111	2N1131	ΔFSC	2460		INTG		2N1167	BEN	3366
	RCAS		2N1108	ETC	106		HUG		2N1146A	BEN	3502	consecutively		
	SEC		2N1109	ETC	105		TEC			CLE		2N1162A	ΔMOTA	3509
	RCAS		2N1110	ETC	107		TII			INTG		thru	BEN	3514
	SEC		2N1111	ETC	108	2N1131A	ΔHUG	2532	2N1146B	BEN	3503	consecutively		
2N1072	ΔWEC	2839	2N1111A	ETC	109	2N1132	ΔFSC	2461		CLE		2N1168	ΔDEL	3264
2N1073	ΔBEN	3350	2N1111B	ETC	110		HUG		2N1146C	BEN	3504		BEN	
2N1073A	ΔBEN	3351	2N1114	ΔSYL	1311		TEC			CLE			CLE	
2N1073B	ΔBEN	3352		ETC			TII			INTG		2N1169	ΔRCAS	3384
2N1086	ΔGESY	411		ETC		2N1132A	ΔHUG	2533		BEN	3505		SYL	
	ETC		2N1115	ΔGESY	1222	2N1132B	HUG	2462	2N1147	CLE		2N1170	ΔRCAS	885
2N1086A	ΔGESY	412		ETC		2N1136	ΔBEN	3353	2N1147A	BEN	3506		SYL	
	ETC		2N1116	ΔTEC	2675		CLE		2N1147B	CLE		2N1171	ΔRAYN	1359
2N1087	ΔGESY	413		SIL		2N1136A	ΔBEN	3354		BEN	3507		ETC	
	ETC		2N1117	ΔTEC	2676		CLE		2N1147C	CLE		2N1172	ΔDEL	2840
2N1090	ΔRCAS	883		TII		2N1136B	ΔBEN	3355		BEN	3508		BEN	
	GIC			SIL			CLE		2N1149	BEN		2N1173	ΔWEC	2071
	RAYN		2N1118	ΔPHIL	1389		CLE			CLE		2N1174	ΔWEC	2070
	ETC			KSC		2N1137	ΔBEN	3356	2N1150	ΔTII	1195	2N1175	ΔGESY	1715
2N1091	ΔRCAS	895		SPR			CLE			NAS			MOTA	
	ETC		2N1118A	PHIL	1370	2N1137A	ΔBEN	3357		TEC		2N1175A	GESY	1716
	GIC			SPR			CLE		2N1151	ΔTII	1223	2N1176	BEN	2703
	RAYN		2N1119	ΔPHIL	1377	2N1137B	ΔBEN	3358		NAS		2N1176A	BEN	2704
2N1092	RCAS	2744		KSC			CLE		2N1151	TEC		2N1176B	BEN	2705
2N1093	TII	1289		SPR		2N1138	ΔBEN	3166		TEC		2N1177	ΔRCAS	692
	ETC			SPR			CLE		2N1152	ΔTII	1249		GIC	
2N1094	ΔWEC	1467	2N1120	BEN	3263	2N1138A	ΔBEN	3167		NAS		2N1178	ΔRCAS	693
2N1095	RDR	2326		CLE			CLE			TEC			GIC	
2N1096	RDR	2327		MOTA		2N1138B	ΔBEN	3168		NAS		2N1179	ΔRCAS	694
2N1097	ΔGESY	1049	2N1121	ΔGESY	414		CLE		2N1153	TEC			GIC	
	ETC			ETC		2N1139	ΔTEC	2399		ΔTII	1265	2N1180	ΔRCAS	685
						2N1140	TEC	2618		NAS			GIC	

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2N1182	TUNE	3515	2N1210	ΔTEC	3009	2N1226	ΔRCAS	913	2N1251	ΔSYL	1068	2N1274	ΔTII	1140
2N1183	ΔRCAS	2745		FTHF			AMP			ETC			ETC	
2N1183A	ΔRCAS	2746		SEC			GIC		2N1252	ΔFSC	2495	2N1275	ΔRAYN	1896
2N1183B	ΔRCAS	2747		SIL			ETC			GIC			HUG	
2N1184	ΔRCAS	2748		TII			SYL			HSDC			KSC	
2N1184A	ΔRCAS	2749				2N1227	BEN	3265		ITC			NAS	
2N1184B	ΔRCAS	2750	2N1211	TEC	3010	2N1228	ΔHUG	2247		NAS			WTC	
2N1185	ΔMOTA	1698		FTHF			NAS			SSD		2N1276	ΔGESY	1360
	ETC			SIL			WTC			RAYN			NAS	
2N1186	ΔMOTA	1672		TII		2N1229	ΔHUG	2248	2N1252A	RAYN	2556	2N1277	ΔGESY	1361
	ETC		2N1212	ΔTEC	2946		NAS			PSI			NAS	
2N1187	ΔMOTA	1682		FTHF			SSD			TEC			TEC	
	ETC			SIL			WTC		2N1253	ΔFSC	2496		ΔGESY	1362
2N1188	ΔMOTA	1694		TII						GIC			NAS	
	ETC			TYC		2N1230	ΔHUG	2249		HSDC			TEC	
2N1191	ΔMOTA	1598	2N1213	ΔRCAS	538		NAS			ITC		2N1279	ΔGESY	1363
	ETC			ETC			SSD			NAS			NAS	
2N1192	ΔMOTA	1599	2N1214	ΔRCAS	539		WTC			RAYN			TEC	
	ETC			ETC		2N1231	ΔHUG	2250		PSI			ΔGESY	1362
2N1193	ΔMOTA	1600	2N1215	ΔRCAS	540		NAS			RAYN			ETC	
	ETC			ETC			SSD			TEC			UST	
2N1194	ΔMOTA	1699	2N1216	ΔRCAS	541		WTC			TII		2N1280	ΔITC	1724
	ETC			ETC					2N1253A	PSI	2557		ETC	
2N1195	ΔWEC	1869	2N1217	ΔGESY	490		NAS			RAYN			UST	
	MOTA			ETC			SSD		2N1254	ΔHUG	2009	2N1282	ΔITC	1756
	TII		2N1218	SYL	2841		WTC		2N1255	ΔHUG	2027		ETC	
2N1196	ΔHUG	2036	2N1219	ΔSSD	1982				2N1256	ΔHUG	2010		UST	
2N1197	ΔHUG	2208		KSC		2N1233	ΔHUG	2236	2N1257	ΔHUG	2028	2N1284	ΔITC	1725
2N1198	ETC	404	2N1220	ΔSSD	1963		NAS		2N1258	ΔHUG	2011		ETC	
2N1199	ΔPHIL	1425		KSC			SSD		2N1259	ΔHUG	2029		UST	
2N1199A	PHIL	1426		NAS			WTC		2N1261	ΔMIN	3090	2N1285	SYL	921
2N1202	ΔMIN	3088	2N1221	ΔSSD	1983					KSC		2N1287	ΔBEN	1575
	KSC			KSC			NAS			SSD			KSC	
2N1203	ΔMIN	3089	2N1222	ΔSSD	1964		WTC		2N1262	ΔMIN	3091		ΔBEN	1576
	KSC			KSC		2N1238	ΔHUG	2610		KSC		2N1287A	ΔBEN	1576
2N1204	ΔPHIL	1792		NAS		2N1239	ΔHUG	2611	2N1263	ΔMIN	3092		SYL	2976
	MOTA		2N1223	ΔSSD	1965					KSC		2N1292	SYL	2976
	SPR			KSC		2N1240	ΔHUG	2612	2N1264/13	ΔSYL	221	2N1294	SYL	2977
2N1204A	ΔPHIL	2287		NAS		2N1241	ΔHUG	2613	2N1265/5	ΔSYL	192	2N1295	CLE	2978
2N1205	TEC	1378		KSC		2N1242	ΔHUG	2601		ETC		2N1296	SYL	2979
2N1206	TEC	2637	2N1224	ΔRCAS	912	2N1243	ΔHUG	2602	2N1266	ΔSYL	557	2N1299	ΔSYL	1224
2N1207	TEC	2638		NAS		2N1244	ΔHUG	2600		ETC			ETC	
2N1208	ΔTEC	2944		AMP		2N1247	TEC	1722		ETC		2N1300	ΔRCAS	1407
	FTHF			ETC			NAS		2N1267	ΔPHIL	428		ΔRCAS	1418
	SIL			GIC			TEC		2N1268	ΔPHIL	699	2N1301	ΔRCAS	1418
	TII			SYL		2N1248	NAS	1723	2N1269	ΔPHIL	1489	2N1302	ΔTII	1172
2N1209	ΔTEC	2945	2N1225	ΔRCAS	920		TEC	86	2N1270	ΔPHIL	866		ETC	
	FTHF			AMP			SSD		2N1271	ΔPHIL	1035		GIC	
	SIL			CSF		2N1249	TEC	3011	2N1272	ΔPHIL	1596		RAYN	
	TII			MISI		2N1250	ΔTEC		2N1273	ΔTII	1139		SYL	
				SYL			SEC			ETC			TII	
							SIL							
							TII							

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2N1303	ΔTII ETC GESY GIC KSC RAYN SYL TIIB	1173	2N1309 (cont.) 2N1310	SYL TIIB ΔGIC	868	2N1348	ETC ITC UST	1726	2N1363	ΔMOTA BEN CLE	3519	2N1381	ΔTII ETC SYL	1974
2N1304	ΔTII ETC GESY GIC RAYN SYL TIIB	1225	2N1311	ΔGIC ETC	869	2N1349	ETC ITC UST	1760	2N1364	ΔMOTA BEN CLE	3520	2N1382	ΔTII ETC	1683
2N1305	ΔTII ETC GESY GIC KSC RAYN SYL TIIB	1226	2N1312	ΔGIC ETC	871	2N1350	ETC ITC UST	1748	2N1365	ΔMOTA BEN CLE	3521	2N1383	ΔTII ETC	1684
2N1306	ΔTII ETC GESY GIC RAYN SYL TIIB	1312	2N1313	ΔTUNE ETC ITC	1605	2N1351	ETC ITC UST	1749	2N1366	RAYN ETC	1316	2N1384	ΔRCAS	1884
2N1307	ΔTII ETC GESY GIC RAYN SYL TIIB	1313	2N1314	AMP PHIN	3445	2N1352	ΔITC ETC UST	1154	2N1367	RAYN ETC	1317	2N1385	TII	2168
2N1308	ΔTII ETC GESY GIC KSC RAYN SYL TIIB	1364	2N1315	ΔITC ETC UST	1757	2N1353	ΔITC ETC KSC UST	1707	2N1370	ΔTII ETC GIC KSC SYL	1141	2N1386	RAYN	2043
2N1309	ΔTII ETC GIC KSC RAYN	1365	2N1316	ΔITC ETC UST	1758	2N1354	ΔITC ETC KSC UST	1718	2N1371	ΔTII ETC KSC	1142	2N1387	RAYN ETC	2044
cont. next col.			2N1317	ΔITC ETC UST	1758	2N1355	ΔITC ETC KSC UST	1750	2N1372	ΔTII ETC SYL	1821	2N1388	RAYN	2038
			2N1318	ΔITC ETC UST	1759	2N1356	ΔITC ETC UST	1751	2N1373	ΔTII ETC SYL	1966	2N1389	ΔRAYN	2012
			2N1319	RCAS ETC	882	2N1357	ΔITC ETC UST	1775	2N1374	ΔTII ETC KSC SYL	1967	2N1390	RAYN	2006
			2N1321	SYL	2980	2N1358	ΔDEL BEN CSF MOTA RCAS, SOI TUNE	3665	2N1375	ΔTII ETC KSC SYL	1968	2N1392	ΔGIC	193
			2N1323	SYL	2981				2N1376	ΔTII ETC SYL	1969	2N1393	ΔGIC	222
			2N1325	SYL	2982				2N1377	ΔTII ETC SYL	1970	2N1394	ΔGIC	194
			2N1326	PSI	2585				2N1378	ΔTII ETC SYL	1971	2N1395	ΔRCAS	905
			2N1335	PSI	2586				2N1379	ΔTII ETC SYL	1972			
			2N1336	PSI	2586				2N1380	ΔTII ETC SYL	1973	2N1388	RAYN	2038
			2N1337	PSI	2587							2N1389	ΔRAYN	2012
			2N1338	PSI	2574							2N1390	RAYN	2006
			2N1339	PSI	2588							2N1392	ΔGIC	193
			2N1340	PSI	2589							2N1393	ΔGIC	222
			2N1341	PSI	2590							2N1394	ΔGIC	194
			2N1342	PSI	2575							2N1395	ΔRCAS	905
			2N1343	ΔITC ETC UST	1196							2N1396	ΔRCAS AMP SYL	922
			2N1344	ΔITC ETC UST	1266							2N1397	ΔRCAS AMP SYL	925
			2N1345	ΔITC ETC UST	1314							2N1398	TII	141
			2N1346	ΔITC ETC UST	1315							2N1399	TII	142
			2N1347	ΔITC ETC UST	1227							2N1400	TII	143

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2N1411	ΔPHIL GIC	59	2N1440	NAS	2238	2N1481	ΔRCAS	2708	2N1500	ΔPHIL	363	2N1529A	ΔMOTA	3530
2N1412	ΔDEL MOTA RCAS SOI TUNE	3666	2N1441	NAS	2239		SIL			GIC			BEN	
			2N1442	NAS	2240	2N1482	ΔRCAS	2709	2N1500/18	SYL	364	2N1530	ΔMOTA	3531
			2N1443	NAS	2241		SIL		2N1501	ΔMIN	3093		BEN	
			2N1444	ΔWEC	2382		TII			KSC		2N1530A	ΔMOTA	3532
			2N1446	ΔITC	1685	2N1483	ΔRCAS	2730	2N1502	ΔMIN	3094		BEN	
2N1413	ΔGESY ETC MOTA SYL	1705	2N1447	ΔITC	1700		SEC			KSC		2N1531	ΔMOTA	3533
				ETC		2N1484	ΔRCAS	2731	2N1504/10	KSC	2985		BEN	
			2N1448	ΔITC	1713		SEC		2N1505	PSI	2754		CLE	
				ETC		2N1485	ΔRCAS	2732	2N1506	PSI	2755	2N1531A	ΔMOTA	3534
2N1414	ΔGESY ETC MOTA SYL	1709	2N1449	ΔITC	1727		SIL		2N1507	ΔTII	2463		BEN	
				ETC		2N1486	ΔRCAS	2733		HSDC		2N1532	ΔMOTA	3535
			2N1450	ΔGIC	929		SEC			MIN			BEN	
				ETC			SIL			NAS			CLE	
2N1415	ΔGESY ETC MOTA SYL	1712		RCAS		2N1487	ΔRCAS	3012	2N1508	TII	2579	2N1532A	ΔMOTA	3536
			2N1451	ΔITC	1673		SEC		2N1509	TII	2580		BEN	
				ETC		2N1488	ΔRCAS	3013	2N1510	ΔGESY	542	2N1533	ΔMOTA	3537
2N1416	ΔPHIL ETC	1917	2N1452	ΔITC	1690		FTC		2N1511	ΔRCAS	3016		BEN	
				ETC			SEC			SEC		2N1534	ΔMOTA	3538
2N1417	TEC	1330	2N1468	RAYN	2077		SIL		2N1512	ΔRCAS	3017		BEN	
2N1418	TEC	1331	2N1469	ΔSSD	1975	2N1489	ΔRCAS	3014		SEC			CLE	
2N1419	ΔCLE	3522		KSC			FTC		2N1513	ΔRCAS	3018	2N1534A	ΔMOTA	3539
2N1420	ΔFSC GIC HSDC ITC MIN NAS PSI RAYN TEC TII	2493	2N1470	ΔRAYN	2984		SEC			SEC			BEN	
			2N1471	ΔITC	1728	2N1490	ΔRCAS	3015	2N1514	ΔRCAS	3019	2N1535	ΔMOTA	3540
				ETC			FTC			SEC			BEN	
			2N1472	ΔPHIL	1427	2N1491	RCAS	2409	2N1515	AMP	719		CLE	
			2N1473	ΔSYL	1586	2N1492	RCAS	2411	2N1516	AMP	710		DEL	
				ETC		2N1493	RCAS	2413	2N1517	AMP	720	2N1535A	ΔMOTA	3541
			2N1474	ΔSSD	1940	2N1494	ΔPHIL	2414	2N1517A	AMP	818		BEN	
				KSC			MOTA		2N1518	ΔDEL	3523	2N1536	ΔMOTA	3542
			2N1474A	ΔSSD	1976		SPR		thru	SOI	thru		BEN	
				KSC		2N1495	RCAS	2409	2N1523		3528		CLE	
2N1420A	ΔFSC	2570	2N1475	ΔSSD	1941		RCAS	2411	consecutively				DEL	
2N1425	RCAS	647		KSC		2N1496	RCAS	2413	2N1524	RCAS	649	2N1536A	ΔMOTA	3543
2N1426	RCAS	648	2N1476	ΔSSD	1942		RCAS	2414		GIC			BEN	
2N1427	ΔPHIL GIC SPR	60		KSC		2N1497	ΔPHIL	2414	2N1525	RCAS	650	2N1537	ΔMOTA	3544
			2N1477	ΔSSD	1943		MOTA			ETC			BEN	
				KSC		2N1498	SPR			GIC			CLE	
2N1428	ΔPHIL	811	2N1478	ΔPHIL	1989	2N1499A	ΔPHIL	2289	2N1526	RCAS	651	2N1537A	ΔMOTA	3545
2N1429	ΔPHIL KSC SPR	812		ETC		2N1495	ΔPHIL	2061		ETC			BEN	
				GIC		2N1496	MOTA			GIC		2N1538	ΔMOTA	3546
			2N1479	ΔRCAS	2706		ΔPHIL	2415	2N1527	RCAS	652		BEN	
				SIL		2N1499A	ΔPHIL	350		ETC		2N1539	ΔMOTA	3547
2N1430	BEN	3224		TII			GIC			GIC			BEN	
2N1431	ΔSYL ETC	1651	2N1480	ΔRCAS	2707		SPR		2N1528	RAYN	1379	2N1539A	ΔMOTA	3548
				SIL					2N1529	ΔMOTA	3529		BEN	
2N1432	ΔSYL	700		TII						CLE			BEN	
2N1437	KSC	2983												
2N1439	NAS	2237												

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2N1540	ΔMOTA BEN CLE	3549	2N1551	MOTA BEN CLE	3569	2N1561	ΔMOTA	2069	2N1613	GIC		2N1635	RCAS	665		
2N1540A	ΔMOTA BEN	3550	2N1551A	MOTA BEN	3570	2N1562	ΔMOTA	2067	(cont.)	HUG		2N1636	ETC GIC	666		
2N1541	ΔMOTA BEN CLE	3551	2N1552	MOTA BEN CLE	3571	2N1564	ΔTII	2465		RCAS		2N1637	RCAS	667		
2N1541A	ΔMOTA BEN	3552	2N1552A	MOTA BEN	3572	2N1565	ΔTII	2470		RAYN		2N1637	ETC GIC	667		
2N1542	ΔMOTA BEN CLE	3553	2N1553	MOTA BEN CLE	3573	2N1566	ΔTII	2486	2N1614	ΔGESY	1881	2N1638	RCAS	655		
2N1542A	ΔMOTA BEN	3554	2N1553A	MOTA BEN	3574	2N1566A	TII	2490	2N1616	ΔTEC	3020	2N1639	RCAS	668		
2N1543	ΔMOTA BEN	3555	2N1554	MOTA BEN CLE	3575	2N1572	ΔTII	2466		FTC		2N1640	ΔCRY	1910		
2N1544	ΔMOTA BEN CLE	3556	2N1554A	MOTA BEN	3576	2N1573	ΔTII	2471	2N1616A	ΔSIL	3101	2N1641	ΔCRY	1923		
2N1544A	ΔMOTA BEN	3557	2N1555	MOTA BEN CLE	3577	2N1574	ΔTII	2487	2N1617	ΔTEC	3021	2N1642	ΔCRY	1957		
2N1545	ΔMOTA BEN CLE	3558	2N1555A	MOTA BEN	3578	2N1585	TII	2169		FTC		2N1643	ΔCRY	1921		
2N1545A	ΔMOTA BEN	3559	2N1556	MOTA BEN CLE	3579	2N1586	ΔTII	1198	2N1617A	ΔSIL	3102	2N1644	WTC			
2N1546	ΔMOTA BEN CLE	3560	2N1556A	MOTA BEN	3580	2N1587	ΔTII	1199	2N1618	ΔTEC	3022	2N1644	ΔCRY	1921		
2N1546A	ΔMOTA BEN	3561	2N1557	MOTA BEN CLE	3581	2N1588	ΔTII	1200		FTC		2N1644	WTC			
2N1547	ΔMOTA BEN CLE	3562	2N1557A	MOTA BEN	3582	2N1589	ΔTII	1250	2N1618A	ΔSIL	3103	2N1644	HSDC	2472		
2N1547A	ΔMOTA BEN	3563	2N1558	MOTA BEN CLE	3583	2N1590	ΔTII	1251		FTC		2N1644A	ΔHSDC	2473		
2N1548	ΔMOTA BEN	3564	2N1558A	MOTA BEN	3584	2N1591	ΔTII	1252	2N1619	TEC	3023	2N1645	ΔWEC	2823		
2N1549	ΔMOTA BEN CLE	3565	2N1559	MOTA BEN CLE	3585	2N1592	ΔTII	1267	2N1620	ΔTEC	3024	2N1646	SYL	1491		
2N1549A	MOTA BEN	3566	2N1559A	MOTA BEN	3586	2N1593	ΔTII	1268		FTC		2N1647	GESY, WEC			
2N1550	MOTA BEN CLE	3567	2N1560	MOTA BEN CLE	3587	2N1594	ΔTII	1269		SEC		2N1648	TEC	2889		
2N1550A	MOTA BEN	3568	2N1560A	MOTA BEN	3588	2N1605	ΔSYL	1339	2N1623	ΔRAYN	1897	2N1648	TII	2890		
										HUG		2N1649	TEC	2891		
										2N1624	ΔGIC	1291	2N1650	ΔTEC	2892	
										ETC		2N1651	TII			
										2N1631	RCAS	663	2N1651	ΔBEN	3589	
											ETC		2N1652	ΔBEN	3590	
											GIC		2N1653	ΔBEN	3591	
											RCAS	664	2N1654	ΔRAYN	1901	
											ETC		2N1655	ΔRAYN	1900	
											GIC		2N1656	ΔRAYN	1902	
											2N1633	RCAS	653	2N1657	RAYN	2986
											ETC		2N1658	MIN	2993	
											GIC		2N1659	ΔMIN	2894	
											2N1634	RCAS	654	2N1660	ΔRAYN	3138
											ETC			TYC		
											GIC					

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2N1661	ΔRAYN	3139	2N1702	ΔRCAS	3066	2N1755	ΔCLE	3025	2N1838	ΔPSI	2651	2N1926	ΔGESY	1864
2N1662	TYC		2N1703	SEC, SIL		2N1756	ΔCLE	3026	2N1839	ΔPSI	2652		ETC	
2N1663	ΔRAYN	3140	2N1704	ΔRCAS	3667	2N1757	ΔCLE	3027	2N1840	ΔPSI	2647		MOTA	
2N1666	TYC		2N1705	SEC		2N1758	ΔCLE	3028	2N1841	WEC	2846	2N1936	ΔTII	3686
2N1667	ΔPHIL	1429	2N1706	NAS	2328	2N1759	ΔCLE	3029	2N1864	ΔPHIL	352	2N1937	ΔTII	3687
2N1668	AMP	3266	2N1707	TUNE	1714	2N1760	ΔCLE	3030	2N1866	ΔPHIL	366	2N1944	ITC	2497
2N1669	AMP	3267	2N1708	TUNE	1701	2N1761	ΔCLE	3031	2N1867	ΔPHIL	367	2N1945	ITC	2498
2N1670	AMP	3268	2N1709	TUNE	1702	2N1762	ΔCLE	3032	2N1868	ΔPHIL	368	2N1946	ITC	2499
2N1671	AMP	3269	2N1710	ΔRCAS	2147	2N1765	WEC	2423	2N1886	ΔPHIL	384	2N1947	ITC	2500
2N1671A	ΔGIC	890	2N1711	PSI	2830	2N1768	RCAS	2714	2N1888	TEC	3033	2N1948	ITC	2501
2N1671B	ΔGESY	2314	2N1712	PSI	2831		SEC		2N1889	ΔFSC	2558	2N1949	ITC	2502
	FTHF		2N1713	ΔFSC	2571		SIL			SGSI		2N1950	ITC	2503
	GELC			GESY		2N1769	RCAS	2715		TII		2N1951	ITC	2504
	GESY	2315		GIC			SEC		2N1890	ΔFSC	2561	2N1952	ITC	2505
	FTHF			PSI			SIL			SGSI		2N1954	RAYN	1807
	GELC			SGSI		2N1779	ΔSYL	776		TII		2N1955	RAYN	1808
	GESY	2316		TII			ETC		2N1891	SYL	1492	2N1956	RAYN	1809
	FTHF		2N1714	ΔTII	2860	2N1780	ΔSYL	792	2N1893	ΔFSC	2559	2N1957	RAYN	1810
	GELC		2N1715	ΔTII	2861		ETC			GESY		2N1958	SYL	2506
2N1672	ΔGIC	872	2N1716	ΔTII	2862	2N1781	ΔSYL	777		GIC			GIC	
2N1672A	ETC		2N1717	ΔTII	2863		ETC			NORC			SYL	2507
2N1673	ΔGIC	873	2N1718	ΔTII	2864	2N1782	ΔSYL	793		PSI			GIC	
2N1674	ΔSYL	586	2N1719	ΔTII	2865		ETC			SGSI			SYL	1493
2N1675	WEC	3270	2N1720	ΔTII	2866	2N1783	ΔSYL	794		TII			SYL	1494
2N1676	ΔPHIL	816	2N1721	ΔTII	2867		ETC			RAYN	3104		SYL	2290
2N1677	SPR		2N1722	ΔTII	3271	2N1784	ΔSYL	805		RAYN	3105		GIC	
2N1677A	ΔPHIL	817		SEC			ETC			RAYN	3106		SYL	2291
2N1678	SPR			SIL		2N1785	ΔPHIL	168		RAYN	3107		GIC	
2N1678A	ΔGIC	903		TEC			ETC			RAYN	3108		SYL	2292
2N1681	ETC		2N1724	ΔTII	3272	2N1786	ΔPHIL	169		PSI	3446		GIC	
2N1682	TUNE	1644		SIL		2N1787	ΔPHIL	170		PSI	3447		SYL	2293
2N1683	ΔRCAS	1422		TEC		2N1788	ΔPHIL	357		PSI	3448		GIC	
2N1684	ΔSYL	791	2N1726	ΔPHIL	354	2N1789	ΔPHIL	358		PSI	3449		SYL	1318
2N1685	ΔSYL	804	2N1727	ΔPHIL	355	2N1790	ΔPHIL	359		PSI	3450		DEL	3667
2N1690	ΔTII	2932	2N1728	ΔPHIL	356	2N1808	TII	1201		PSI	3451		TUNE	
	SEC		2N1729	ΔPHIL	385	2N1809	WESY	3753		RCAS	3273		DEL	3275
2N1691	ΔTII	2933	2N1730	ΔPHIL	386		thru			RCAS	3274		ΔFSC	2485
	SEC		2N1731	ΔPHIL	387	2N1812	thru	3756		ΔTII	3684		ΔFSC	2553
2N1692	ΔMOTA	2658	2N1732	ΔPHIL	388	2N1816	WESY	3757		ΔTII	3685		ΔFSC	2550
2N1693	ΔMOTA	2657	2N1733	ΔPHIL	389		thru			ΔSSD	2003		ΔFSC	2548
2N1694	ΔGESY	491	2N1734	ΔPHIL	390	2N1819	thru	3760		ΔSSD	1991		ΔFSC	2885
	ETC		2N1735	ΔPHIL	391	2N1823	WESY	3761		ΔSSD	1944		TUNE	3688
2N1699	ΔSYL	831	2N1736	ΔPHIL	392		thru			ΔSSD	1945		TUNE	3689
2N1700	ΔRCAS	2665	2N1737	ΔPHIL	393	2N1824	WESY	3762		ΔSSD	1946		TUNE	3690
	SIL		2N1738	ΔPHIL	394	2N1825	WESY	3763		ΔSSD	1947		ΔFSC	2445
	TEC		2N1739	ΔPHIL	395	2N1826	WESY	3764		ΔGESY	1851		RAYN	
2N1701	ΔRCAS	2734	2N1740	ΔPHIL	396	2N1837	ΔPSI	2650		ETC			ΔFSC	2446
	SEC		2N1741	ΔPHIL	397		GIC			MOTA			RAYN	
	SIL		2N1742	ΔPHIL	398	2N1837A	PSI	2654		ΔGESY	1863		ΔFSC	2447
			2N1743	ΔPHIL	399		GIC			ETC			RAYN	
			2N1744	ΔPHIL	400		GIC			MOTA				



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2N1986	ΔFSC	2448	2N2035	SIL	2878	2N2081	ΔMOTA	3703	2N2142A	ΔMOTA	3378	2N2178	ΔSSD	796
	GIC		2N2036	SIL	2913		SOI		2N2143	ΔMOTA	3379	2N2188	TII	1015
	HSDC		2N2038	TEC	2987	<del>2N2081A</del>	<del>MOTA</del>	<del>3704</del>	2N2143A	ΔMOTA	3380	2N2189	TII	1017
	RAYN		2N2039	TEC	2988	<del>2N2082</del>	<del>ΔMOTA</del>	<del>3705</del>	2N2144	ΔMOTA	3381	2N2190	TII	1016
<del>2N1987</del>	<del>ΔFSC</del>	<del>2449</del>	<del>2N2040</del>	<del>TEC</del>	<del>2989</del>		SOI		2N2144A	ΔMOTA	3382	2N2191	TII	1018
	GIC		2N2041	TEC	2990	<del>2N2082A</del>	<del>MOTA</del>	<del>3706</del>	<del>2N2145</del>	<del>ΔMOTA</del>	<del>3383</del>	<del>2N2193</del>	<del>ΔGESY</del>	<del>2581</del>
	HSDC		2N2042	ΔMOTA	1652	<del>2N2084</del>	<del>AMP</del>	<del>1012</del>	2N2145A	ΔMOTA	3384	2N2193A	GESY	2582
	RAYN		2N2042A	ΔMOTA	1653	2N2085	GIC	1293	2N2146	ΔMOTA	3385	2N2194	ΔGESY	2583
2N1988	ΔFSC	2450	<del>2N2043</del>	<del>ΔMOTA</del>	<del>1657</del>	2N2086	ΔPHIL	2491	2N2146A	ΔMOTA	3386	2N2194A	GESY	2584
	GIC		2N2043A	ΔMOTA	1658	2N2087	ΔPHIL	2492	2N2149	NAS	2775	2N2195	ΔGESY	2508
	RAYN		<del>2N2048</del>	<del>ΔPHIL</del>	<del>1433</del>	2N2089	AMP	714	<del>2N2152</del>	<del>ΔMOTA</del>	<del>3707</del>	2N2195A	GESY	2509
<del>2N1989</del>	<del>ΔFSC</del>	<del>2451</del>		SPR		<del>2N2090</del>	<del>AMP</del>	<del>715</del>		SOI		<del>2N2196</del>	<del>GESY</del>	<del>2502</del>
	GIC		<del>2N2049</del>	<del>ΔFSC</del>	<del>2551</del>	2N2091	AMP	716	<del>2N2152A</del>	<del>ΔMOTA</del>	<del>3708</del>	2N2197	GESY	2803
	RAYN		2N2060	FSC	2424	2N2092	AMP	827	<del>2N2153</del>	<del>ΔMOTA</del>	<del>3709</del>	2N2198	TEC	2510
<del>2N1990</del>	<del>ΔFSC</del>	<del>2452</del>	<del>2N2061</del>	<del>CLE</del>	<del>3276</del>	2N2093	AMP	828		SOI		2N2201	GESY	2804
	GIC			INTG		2N2096	SPR	2062	<del>2N2153A</del>	<del>ΔMOTA</del>	<del>3710</del>	2N2202	GESY	2805
	RAYN		<del>2N2062</del>	<del>CLE</del>	<del>3277</del>	<del>2N2097</del>	<del>SPR</del>	<del>2063</del>	<del>2N2154</del>	<del>ΔMOTA</del>	<del>3711</del>	<del>2N2203</del>	<del>GESY</del>	<del>2806</del>
<del>2N1991</del>	<del>ΔFSC</del>	<del>2453</del>		INTG		2N2099	SPR	2064		SOI		2N2204	GESY	2807
	HUG		<del>2N2063</del>	<del>CLE</del>	<del>3278</del>	2N2100	SPR	2065	<del>2N2154A</del>	<del>ΔMOTA</del>	<del>3712</del>	2N2205	ΔRCAS	2148
	TEC		2N2064	CLE	3279	2N2101	ΔFTC	3168a	<del>2N2155</del>	<del>ΔMOTA</del>	<del>3713</del>	2N2206	ΔRCAS	2149
<del>2N1992</del>	<del>WEC</del>	<del>2213</del>	2N2065	CLE	3280	2N2102	ΔRCAS	2774		SOI		2N2207	AMP	1789
2N1993	SYL	1174	2N2066	CLE	3281	2N2104	ΔNORC	2554	<del>2N2155A</del>	<del>ΔMOTA</del>	<del>3714</del>	<del>2N2214</del>	<del>PSI</del>	<del>2079</del>
2N1994	TII	1175	2N2067	CLE	3035	<del>2N2105</del>	<del>ΔNORC</del>	<del>2552</del>	<del>2N2156</del>	<del>ΔMOTA</del>	<del>3715</del>	2N2216	ΔNORC	2549
2N1995	TII	1228	<del>2N2067B</del>	<del>CLE</del>	<del>3036</del>	2N2106	GESY	2727		SOI		2N2225	ΔKSC	1781
2N1996	TII	1292	2N2067G	CLE	3037	2N2107	GESY	2728	<del>2N2156A</del>	<del>ΔMOTA</del>	<del>3716</del>	2N2226	WESY	3723
<del>2N1997</del>	<del>TII</del>	<del>1977</del>	2N2067-O	CLE	3038	2N2108	GESY	2729	<del>2N2157</del>	<del>ΔMOTA</del>	<del>3717</del>	2N2227	WESY	3724
2N1998	TII	1986	2N2067W	CLE	3039	2N2109	WESY	3765		SOI		<del>2N2228</del>	<del>WESY</del>	<del>3725</del>
2N1999	TII	2004	2N2068	CLE	3040	<del>2N2110</del>	<del>WESY</del>	<del>3766</del>	<del>2N2157A</del>	<del>ΔMOTA</del>	<del>3718</del>	2N2230	WESY	3726
2N2000	TII	2116	<del>2N2068G</del>	<del>CLE</del>	<del>3041</del>		TUNE		<del>2N2158</del>	<del>ΔMOTA</del>	<del>3719</del>	2N2231	WESY	3727
2N2001	TII	2121	2N2068-O	CLE	3042	<del>2N2111</del>	<del>WESY</del>	<del>3767</del>		SOI		2N2232	WESY	3728
<del>2N2002</del>	<del>NAS</del>	<del>1924</del>	2N2069	CLE	3452	2N2112	WESY	3768	<del>2N2158A</del>	<del>ΔMOTA</del>	<del>3720</del>	2N2234	STCB	3169
2N2003	NAS	1925	2N2070	CLE	3453	2N2116	WESY	3769	<del>2N2159</del>	<del>ΔMOTA</del>	<del>3721</del>	<del>2N2235</del>	<del>STCB</del>	<del>3170</del>
2N2004	ΔNAS	1926	<del>2N2075</del>	<del>ΔMOTA</del>	<del>3691</del>	2N2117	WESY	3770		SOI		2N2236	STCB	2454
2N2005	NAS	1927		SOI		2N2118	WESY	3771	<del>2N2159A</del>	<del>ΔMOTA</del>	<del>3722</del>	2N2237	STCB	2464
2N2006	NAS	1928	<del>2N2075A</del>	<del>MOTA</del>	<del>3692</del>	<del>2N2119</del>	<del>WESY</del>	<del>3772</del>	2N2162	SPR	1380	2N2238	WEC	2180
2N2007	NAS	1929	<del>2N2076</del>	<del>ΔMOTA</del>	<del>3693</del>	2N2123	WESY	3773	2N2163	SPR	1381	<del>2N2242</del>	<del>GIC</del>	<del>2217</del>
<del>2N2008</del>	<del>RAYN</del>	<del>2547</del>		SOI		2N2124	WESY	3774	2N2164	SPR	1411	<del>2N2244</del>	<del>NAS</del>	<del>2354</del>
<del>2N2015</del>	<del>RCAS</del>	<del>3418</del>	<del>2N2076A</del>	<del>MOTA</del>	<del>3694</del>	2N2125	WESY	3775	2N2165	SPR	1371	2N2245	NAS	2355
	SEC		<del>2N2077</del>	<del>ΔMOTA</del>	<del>3695</del>	2N2126	WESY	3776	<del>2N2166</del>	<del>SPR</del>	<del>1372</del>	2N2246	NAS	2356
<del>2N2016</del>	<del>RCAS</del>	<del>3419</del>		SOI		<del>2N2137</del>	<del>ΔMOTA</del>	<del>3367</del>	2N2167	SPR	1405	2N2247	NAS	2357
	SEC		<del>2N2077A</del>	<del>MOTA</del>	<del>3696</del>	2N2137A	ΔMOTA	3368	2N2168	SPR	380	2N2248	NAS	2358
<del>2N2017</del>	<del>GESY</del>	<del>2716</del>	<del>2N2078</del>	<del>ΔMOTA</del>	<del>3697</del>	2N2138	ΔMOTA	3369	2N2169	SPR	381	<del>2N2249</del>	<del>NAS</del>	<del>2359</del>
2N2018	TEC	2895		SOI		2N2138A	ΔMOTA	3370	2N2170	SPR	372	2N2250	NAS	2360
2N2019	TEC	2896	<del>2N2078A</del>	<del>MOTA</del>	<del>3698</del>	2N2139	ΔMOTA	3371	<del>2N2171</del>	<del>TUNE</del>	<del>1865</del>	2N2251	NAS	2361
2N2020	ΔTEC	2897	<del>2N2079</del>	<del>ΔMOTA</del>	<del>3699</del>	<del>2N2139A</del>	<del>ΔMOTA</del>	<del>3372</del>	2N2172	ΔKSC	1752	2N2252	NAS	2362
2N2021	ΔTEC	2898		SOI		2N2140	ΔMOTA	3373	2N2173	ΔTII	2078	2N2253	NAS	2363
<del>2N2022</del>	<del>WEC</del>	<del>1495</del>	<del>2N2079A</del>	<del>MOTA</del>	<del>3700</del>	2N2140A	ΔMOTA	3374	2N2174	NAS	2242	<del>2N2254</del>	<del>NAS</del>	<del>2364</del>
2N2032	ΔTEC	3034	<del>2N2080</del>	<del>ΔMOTA</del>	<del>3701</del>	2N2141	ΔMOTA	3375	2N2175	ΔSSD	843	2N2255	NAS	2365
2N2033	SIL	2796		SOI		2N2141A	ΔMOTA	3376	<del>2N2176</del>	<del>ΔSSD</del>	<del>844</del>	2N2256	ΔMOTA	2154
2N2034	SIL	2797	<del>2N2080A</del>	<del>MOTA</del>	<del>3702</del>	<del>2N2142</del>	<del>ΔMOTA</del>	<del>3377</del>	2N2177	ΔSSD	795	2N2257	ΔMOTA	2155

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2N2258	ΔMOTA	1431	2S301	TIIB	1948	2SA69	MATJ	819	2SA130	HITJ	681	2SA208	HITJ	874
2N2259	ΔMOTA	1432	2S302	TIIB	1949	2SA70	MATJ	820	2SA131	HITJ	676	2SA209	HITJ	880
2N2260	TUNE	1496	2S303	TIIB	1686	2SA71	MATJ	832	2SA132	HITJ	679	2SA210	HITJ	891
2N2261	TUNE	1497	2S304	TIIB	1978	2SA72	TOSJ	314	2SA133	HITJ	671	2SA211	HITJ	875
2N2262	TUNE	1498	2S305	TIIB	1922	2SA73	TOSJ	311	2SA134	HITJ	695	2SA212	HITJ	876
2N2266	ΔMIN	3171	2S701	TIIB	778	2SA74	TOSJ	1011	2SA135	HITJ	696	2SA213	NECJ	28
2N2267	ΔMIN	3172	2S702	TIIB	797	2SA75	TOSJ	1008	2SA136	KOKJ	135	2SA214	NECJ	29
2N2268	ΔMIN	3173	2S703	TIIB	810	2SA76	TOSJ	325	2SA137	KOKJ	134	2SA215	NECJ	26
2N2269	ΔMIN	3174	2S711	TIIB	2441	2SA77	TOSJ	324	2SA138	FCAJ	622	2SA216	NECJ	27
2N2282	BEN	2808	2S712	TIIB	2442	2SA78	TOSJ	1005	2SA139	FCAJ	605	2SA217	HITJ	899
2N2283	BEN	2809	2S720	TIIB	3177	2SA80	HITJ	673	2SA144	MATJ	708	2SA218	SANJ	244
2N2284	BEN	2810	2S721	TIIB	3178	2SA81	HITJ	656	2SA145	MATJ	706	2SA219	SANJ	248
2N2285	BEN	3594	2SA12	HITJ	599	2SA82	HITJ	674	2SA151	HITJ	591	2SA221	SANJ	251
2N2286	BEN	3595	2SA13	HITJ	600	2SA83	HITJ	641	2SA152	HITJ	612	2SA223	SANJ	255
2N2287	BEN	3596	2SA14	HITJ	582	2SA84	HITJ	657	2SA153	NECJ	42	2SA224	SANJ	266
2N2288	BEN	3597	2SA15	HITJ	618	2SA85	HITJ	675	2SA154	NECJ	37	2SA226	SANJ	270
2N2289	BEN	3598	2SA16	HITJ	619	2SA86	HITJ	1866	2SA155	NECJ	38	2SA228	SANJ	815
2N2290	BEN	3599	2SA17	HITJ	627	2SA87	HITJ	691	2SA156	NECJ	39	2SA229	TOSJ	533
2N2291	BEN	3600	2SA18	HITJ	628	2SA88	HITJ	682	2SA157	NECJ	43	2SA230	TOSJ	534
2N2292	BEN	3601	2SA19	NECJ	18	2SA89	HITJ	683	2SA159	NECJ	40	2SA231	HITJ	2790
2N2293	BEN	3602	2SA20	NECJ	19	2SA90	HITJ	1786	2SA160	NECJ	41	2SA232	HITJ	2791
2N2294	BEN	3603	2SA21	NECJ	20	2SA92	TOSJ	317	2SA161	SONY	292	2SA233	HITJ	684
2N2295	BEN	3604	2SA26	NECJ	988	2SA93	TOSJ	316	2SA162	SONY	293	2SA234	HITJ	688
2N2296	BEN	3605	2SA30	KOKJ	610	2SA94	HITJ	669	2SA163	SONY	294	2SA235	HITJ	690
2N2297	FSC	2619	2SA31	KOKJ	587	2SA101	MATJ	340	2SA164	SONY	295	2SA236	TOSJ	312
2N2303	FSC	2459	2SA32	FCAJ	803	2SA102	MATJ	341	2SA165	SONY	296	2SA237	TOSJ	313
2N2318	GIC	2218	2SA33	FCAJ	779	2SA103	MATJ	342	2SA166	SONY	297	2SA238	NECJ	1755
2N2319	GIC	2158	2SA35	KOKJ	611	2SA104	MATJ	345	2SA167	NECJ	994	2SA239	TOSJ	526
2N2320	GIC	2494	2SA36	KOKJ	588	2SA105	KOKJ	138	2SA168	NECJ	1603	2SA240	TOSJ	527
2N3000	UST	1366	2SA37	TOSJ	50	2SA106	KOKJ	137	2SA168A	NECJ	1604	2SA241	MATJ	282
2S001	TIIB	1202	2SA38	TOSJ	51	2SA107	KOKJ	136	2SA169	NECJ	998	2SA242	MATJ	284
2S002	TIIB	1203	2SA39	TOSJ	49	2SA108	KOKJ	670	2SA170	NECJ	1606	2SA243	MATJ	285
2S003	TIIB	1319	2SA40	KOKJ	589	2SA109	KOKJ	642	2SA171	NECJ	992	2SA244	NECJ	1794
2S004	TIIB	1204	2SA41	HITJ	1985	2SA110	KOKJ	643	2SA172	NECJ	1602	2SA245	NECJ	1796
2S005	TIIB	1009	2SA42	HITJ	590	2SA111	KOKJ	629	2SA173	NECJ	984	2SA246	HITJ	1033
2S012A	TIIB	3175	2SA43	KOKJ	640	2SA112	KOKJ	630	2SA174	NECJ	1601	2SA247	HITJ	1032
2S013A	TIIB	3176	2SA49	TOSJ	338	2SA113	KOKJ	242	2SA175	TOSJ	323	2SA248	TOSJ	1006
2S014	TIIB	1001	2SA50	TOSJ	309	2SA114	KOKJ	243	2SA180	SANJ	239	2SA250	MATJ	1645
2S017	TIIB	2765	2SA51	TOSJ	339	2SA115	KOKJ	246	2SA181	SANJ	235	2SA251	FCAJ	252
2S018	TIIB	2766	2SA52	TOSJ	337	2SA116	KOKJ	277	2SA182	SANJ	229	2SA252	FCAJ	267
2S019	TIIB	2767	2SA53	TOSJ	336	2SA117	KOKJ	276	2SA183	SANJ	240	2SA253	FCAJ	1793
2S020	TIIB	2768	2SA54	NECJ	529	2SA118	KOKJ	271	2SA188	FCAJ	613	2SA254	KOKJ	308
2S024	TIIB	3282	2SA56	NECJ	1438	2SA121	SONY	21	2SA189	FCAJ	592	2SA255	KOKJ	306
2S025	TIIB	3283	2SA57	TOSJ	322	2SA122	SONY	22	2SA201	SANJ	89	2SA256	KOKJ	320
2S026	TIIB	3285	2SA58	TOSJ	321	2SA123	SONY	23	2SA202	SANJ	97	2SA257	KOKJ	318
2S101	TIIB	2150	2SA60	TOSJ	319	2SA124	SONY	24	2SA203	SANJ	87	2SA258	KOKJ	315
2S102	TIIB	2268	2SA64	KOKJ	621	2SA125	SONY	25	2SA204	NECJ	1254	2SA259	KOKJ	310
2S103	TIIB	2269	2SA65	TOSJ	1253	2SA127	TOSJ	1394	2SA205	NECJ	1729	2SA260	SANJ	155
2S104	TIIB	2272	2SA66	TOSJ	1320	2SA128	TOSJ	1593	2SA206	NECJ	1740	2SA261	SANJ	156
2S131	TIIB	2163	2SA67	TOSJ	1354	2SA129	TOSJ	1594	2SA207	NECJ	1776	2SA262	SANJ	157

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2SA263	SANJ	158	2SB30	SONY	2759	2SB89	HITJ	1950	2SB144	SONY	2771	2SB205	SHEJ	3608
2SA264	SANJ	159	2SB31	SONY	2760	2SB90	TOSJ	163	2SB144P	SONY	2884	2SB206	SHEJ	3609
2SA265	SANJ	160	2SB32	KOKJ	1502	2SB91	TOSJ	164	2SB145	SONY	2772	2SB207	SHEJ	3610
2SA266	KOKJ	680	2SB33	KOKJ	1503	2SB94	TOSJ	1110	2SB146	SONY	2773	2SB208	SHEJ	3611
2SA267	KOKJ	677	2SB34	KOKJ	2080	2SB97	TOSJ	165	2SB147	SONY	2778	2SB209	SHEJ	3612
2SA268	KOKJ	658	2SB37	KOKJ	1504	2SB98	NECJ	976	2SB148	TOSJ	3389	2SB210	SHEJ	3613
2SA269	KOKJ	644	2SB38	KOKJ	2081	2SB99	NECJ	977	2SB149	TOSJ	3180	2SB211	SHEJ	3614
2SA270	KOKJ	678	2SB39	KOKJ	189	2SB100	NECJ	755	2SB150	TOSJ	175	2SB212	SHEJ	3615
2SA271	KOKJ	645	2SB40	TOSJ	558	2SB101	NECJ	972	2SB151	KOKJ	3337	2SB213	SHEJ	3616
2SA272	KOKJ	631	2SB41	KOKJ	3287	2SB102	NECJ	1626	2SB152	KOKJ	3338	2SB214	SHEJ	3617
2SA273	KOKJ	659	2SB42	KOKJ	3288	2SB103	NECJ	973	2SB153	HITJ	1507	2SB215	SANJ	3047
2SA274	KOKJ	646	2SB43	TOSJ	2701	2SB104	NECJ	1627	2SB154	HITJ	1508	2SB216	SANJ	3048
2SA275	KOKJ	672	2SB46	TOSJ	559	2SB105	NECJ	2321	2SB155	HITJ	2309	2SB217	SANJ	3049
2SA276	TOSJ	543	2SB47	TOSJ	560	2SB106	NECJ	2812	2SB156	HITJ	2310	2SB218	NECJ	1833
2SA277	TOSJ	429	2SB48	SONY	1041	2SB107	NECJ	2901	2SB157	MATJ	2	2SB219	NECJ	1824
2SA278	TOSJ	430	2SB49	SONY	1045	2SB107A	NECJ	3045	2SB158	MATJ	5	2SB220	NECJ	1827
2SA279	MATJ	917	2SB50	SONY	1048	2SB108	NECJ	2322	2SB159	MATJ	7	2SB221	NECJ	1834
2SA282	TOSJ	1499	2SB51	SONY	1687	2SB108A	NECJ	2323	2SB160	MATJ	6	2SB222	NECJ	1845
2SA283	TOSJ	1500	2SB52	SONY	1703	2SB108B	NECJ	2324	2SB161	NECJ	951	2SB223	NECJ	1852
2SA284	TOSJ	1501	2SB53	SONY	1704	2SB109	NECJ	2813	2SB162	NECJ	1614	2SB224	NECJ	1835
2SA285	NECJ	249	2SB54	TOSJ	968	2SB109A	NECJ	2814	2SB163	NECJ	956	2SB225	NECJ	1846
2SA286	NECJ	253	2SB55	TOSJ	1102	2SB109B	NECJ	2815	2SB164	NECJ	1617	2SB226	NECJ	1853
2SA287	NECJ	254	2SB56	TOSJ	1103	2SB110	NECJ	444	2SB165	NECJ	969	2SB227	NECJ	1861
2SA290	HITJ	697	2SB57	FCAJ	749	2SB111	NECJ	445	2SB166	NECJ	1625	2SB228	HITJ	3334
2SA291	FCAJ	272	2SB59	FCAJ	1104	2SB112	NECJ	446	2SB168	KOKJ	300	2SB229	HITJ	3335
2SA304	TOSJ	400	2SB60	FCAJ	1105	2SB113	NECJ	447	2SB169	KOKJ	301	2SB230	HITJ	3336
2SA305	TOSJ	419	2SB60A	FCAJ	1106	2SB114	NECJ	449	2SB170	MATJ	932	2SB231	TOSJ	3181
2SA308	MATJ	717	2SB61	KOKJ	1107	2SB115	NECJ	450	2SB171	MATJ	940	2SB232	MATJ	3295
2SA309	MATJ	718	2SB62	TOSJ	2847	2SB116	NECJ	451	2SB172	MATJ	970	2SB233	MATJ	3296
2SA310	MATJ	1582	2SB63	TOSJ	2848	2SB117	NECJ	452	2SB173	MATJ	941	2SB234	MATJ	3297
2SA311	TOSJ	1419	2SB64	TOSJ	3783	2SB120	KOKJ	298	2SB174	MATJ	1822	2SB235	TOSJ	3618
2SA312	TOSJ	1420	2SB65	KOKJ	1108	2SB121	KOKJ	299	2SB175	MATJ	946	2SB236	TOSJ	3619
2SA313	TOSJ	343	2SB66	HITJ	1093	2SB122	TOSJ	3046	2SB176	KOKJ	975	2SB237	TOSJ	3620
2SA314	TOSJ	344	2SB67	HITJ	2202	2SB123	TOSJ	3179	2SB177	MATJ	958	2SB238	NECJ	2901a
2SA315	TOSJ	346	2SB68	HITJ	174	2SB124	TOSJ	3387	2SB178	MATJ	1823	2SB239	NECJ	2902
2SA316	TOSJ	347	2SB69	TOSJ	3784	2SB125	TOSJ	3388	2SB180	KOKJ	2663	2SB239A	NECJ	2902a
2SB16A	FCAJ	2785	2SB73	HITJ	183	2SB126	MATJ	3289	2SB181	KOKJ	2664	2SB240	NECJ	2903
2SB17A	FCAJ	2786	2SB74	HITJ	701	2SB127	MATJ	3290	2SB183	HITJ	184	2SB240A	NECJ	2904
2SB18A	FCAJ	2787	2SB75	HITJ	1076	2SB128	MATJ	3291	2SB184	HITJ	302	2SB241	NECJ	2905
2SB19	FCAJ	2856	2SB76	HITJ	1505	2SB128A	MATJ	3292	2SB185	SANJ	1509	2SB241A	NECJ	2906
2SB20	FCAJ	2857	2SB77	HITJ	1109	2SB129	MATJ	3293	2SB186	SANJ	1510	2SB242	NECJ	2907
2SB21	FCAJ	2858	2SB78	HITJ	1506	2SB129A	MATJ	3294	2SB187	SANJ	1511	2SB242A	NECJ	2908
2SB22	SANJ	1597	2SB80	HITJ	2811	2SB130	MATJ	2868	2SB188	SANJ	1512	2SB243	NECJ	2909
2SB23	SANJ	161	2SB81	HITJ	2792	2SB131	KOKJ	3454	2SB189	TOSJ	1951	2SB243A	NECJ	2910
2SB24	SANJ	162	2SB82	HITJ	2793	2SB132	KOKJ	3455	2SB199	KOKJ	1513	2SB244	NECJ	2911
2SB25	TOSJ	3043	2SB83	HITJ	2899	2SB140	SONY	2776	2SB200	TOSJ	2735	2SB245	NECJ	2912
2SB26	TOSJ	3044	2SB84	HITJ	2900	2SB141	SONY	2777	2SB201	TOSJ	2325	2SB246	NECJ	3390
2SB27	SONY	2756	2SB85	HITJ	3331	2SB142	SONY	2769	2SB202	TOSJ	2736	2SB247	NECJ	3391
2SB28	SONY	2757	2SB86	HITJ	3332	2SB143	SONY	2770	2SB203	SHEJ	3606	2SB248	NECJ	3392
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2SB250	NECJ	3395	2SC38	NECJ	2392	2SD65	SONY	561	17T1	FTHF	2435	AC123	TFKG	1124
2SB250A	NECJ	3396	2SC41	SONY	2781	2SD66	SONY	550	18T1	FTHF	2436	AC124	TFKG	2297
2SB251	NECJ	3397	2SC42	SONY	2782	2SD75	HITJ	757	25T1	CDLF, FTHF	112	AC130	RADF	1052a
2SB251A	NECJ	3398	2SC43	SONY	2783	2SD77	HITJ	758	25T2	FTHF	2337	ACZ10	TFKG	2298
2SB252	NECJ	3399	2SC44	SONY	2784	2SD120	HITJ	2717	26T1	CDLF	103	AD103	SIHG	3183
2SB252A	NECJ	3400	2SC49	NECJ	2568	2SD121	HITJ	2718	26T2	FTHF	2338	AD104	SIHG	3184
2SB253	NECJ	3401	2SC50	MATJ	806	2SD122	HITJ	2794	26T2C	FTHF	2648	AD105	SIHG	3185
2SB253A	NECJ	3402	2SC73	SONY	99	2SD123	HITJ	2795	28T2	FTHF	2339	ADZ11	RADF	3460
2SB254	SANJ	2824	2SC74	TOSJ	2181	2SD124	HITJ	2876	29T2	FTHF	2340		PHIN	
2SB255	SANJ	2825	2SC75	SONY	90	2SD125	HITJ	2877	29T2C	FTHF	2649	ADZ12	RADF	3461
2SB256	SANJ	2826	2SC76	SONY	91	2T3	FTHF	303	35T1	CDLF	226		PHIN	
2SB257	TOSJ	392	2SC77	SONY	92	2XOC308	INTG	959		FTHF		AF101	TFKG	98
2SB258	TOSJ	3621	2SC78	SONY	100		BRUB		36T1	CDLF	233	AF102	PHIN	281
2SB259	TOSJ	3622	2SC89	HITJ	881	2XOC318	INTG	1870		FTHF		AF105	TFKG	117
2SB260	TOSJ	3623	2SC90	HITJ	886		BRUB		37T1	CDLF	236	AF106	SIHG	121
2SB261	KOKJ	431	2SC91	HITJ	892	3N34	TII	1013		FTHF		AF107	SIHG	1646
2SB262	KOKJ	432	2SC121	NECJ	2013		FTHF		38T1	FTHF	731	AF108	SIHG	1648
2SB263	KOKJ	1811	2SC122	NECJ	2022		TIIB		39T1	FTHF	733	AF114	PHIN	260
2SB264	NECJ	448	2SC123	NECJ	2025	3N35	TII	1020	44T1	CDLF	2251		RADF	
2SB265	TOSJ	1597a	2SC124	NECJ	2026		FTHF			FTHF			SIHG	
2SB271	SANJ	2511	2SC150	HITJ	2751	3N36	TIIB	115	64T1	FTHF	1294	AF115	PHIN	261
2SB272	SANJ	2512	2SC151	HITJ	2752	3N37	FTHF	119	65T1	FTHF	1321		RADF	
2SB273	SANJ	2513	2SC152	HITJ	2753	3N45	MIN	3456	82T1	FTHF	2636	AF116	PHIN	262
2SB290	TOSJ	399	2SC160	HITJ	1010	3N46	MIN	3457	101A	MOTA	1439		RADF	
2SB291	TOSJ	1111	2SC173	SONY	101	3N47	ΔMIN	3458	101B	MOTA	1440		SIHG	
2SB292	TOSJ	2702	2SC175	SONY	93	3N48	ΔMIN	3459	101M	MOTA	1441	AF117	PHIN	263
2SB295	FCAJ	3298	2SC176	SONY	94	3N49	ΔMIN	3624	201A	MOTA	1442		RADF	
2SB296	TOSJ	3330	2SC177	SONY	95	3N50	ΔMIN	3625	201B	MOTA	1443		SIHG	
2SC11	TOSJ	307	2SC178	SONY	102	3N51	ΔMIN	3626	201M	MOTA	1444	AF118	PHIN	2051
2SC12	TOSJ	2518	2SC191	SONY	2039	3N52	ΔMIN	3627	941T1	CDLF	333	AF124	PHIN	395
2SC13	TOSJ	433	2SC192	SONY	1992	3N56	TEC	1521	965T1	CDLF	334	AF125	PHIN	396
2SC14	TOSJ	434	2SC193	SONY	2023	3N57	TEC	1522	987T1	CDLF	328	AF126	PHIN	397
2SC16	TOSJ	1812	2SC194	SONY	2040	3S002	TIIB	1014	988T1	CDLF	330	AF127	PHIN	398
2SC17	TOSJ	1813	2SC195	SONY	1993	3S004	TIIB	1019	989T1	CDLF	327	AF129	INTG	278
2SC18	TOSJ	1814	2SC196	SONY	2024	3T3	FTHF	689	990T1	CDLF	329	AF130	INTG	279
2SC19	TOSJ	2514	2SC197	SONY	2041	4C28	GESY	1340	991T1	CDLF	331	AF131	INTG	264
2SC20	TOSJ	2515	2SD11	NECJ	981	4C29	GESY	1341	992T1	CDLF	335	AF132	INTG	265
2SC21	TOSJ	3182	2SD19	NECJ	1514	4C30	GESY	1342	AC105	TFKG	2294	AF133	INTG	273
2SC22	NECJ	2832	2SD20	NECJ	1515	4C31	GESY	1343	AC106	TFKG	2295	AFY10	SIHG	1647
2SC23	NECJ	2833	2SD21	NECJ	1516	4D20	GESY	1523	AC107	PHIN	703	AFY11	SIHG	1649
2SC24	NECJ	2834	2SD22	NECJ	1517	4D21	GESY	1524		MULB		AFY12	SIHG	122
2SC26	FCAJ	2400	2SD23	NECJ	1518	4D22	GESY	1525	AC108	SIHG	72	AFZ10	TFKG	1526
2SC27	FCAJ	2401	2SD33	KOKJ	1519	4D24	GESY	1021	AC109	SIHG	73	AFZ11	MULB	274
2SC28	FCAJ	1867	2SD37	KOKJ	1520	4D25	GESY	1022	AC110	SIHG	74	AFZ12	PHIN	283
2SC29	FCAJ	867	2SD43	TOSJ	2700	4D26	GESY	1023	AC116	TFKG	1123		MULB	
2SC30	NECJ	2410	2SD44	TOSJ	702	4T3	FTHF	304	AC117	TFKG	2296	ASY12	INTG	1872
2SC31	NECJ	2408	2SD61	SONY	750	10T2	FTHF	995	AC120	SIHG	1819	ASY13	INTG	1873
2SC32	NECJ	2412	2SD62	SONY	751	11T2	FTHF	996	AC121	SIHG	1820	ASY14	INTG	960
2SC33	NECJ	1434	2SD63	SONY	752									

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TYPE No.	MFRS.	LINE No.	TYPE No.	MFRS.	LINE No.	TYPE No.	MFRS.	LINE No.	TYPE No.	MFRS.	LINE No.	TYPE No.	MFRS.	LINE No.
ASY26	PHIN	985	BCY13	SIHG	2317	CDT1312	CLE	3306	CK273	RAYN	2101	DT1122	BRDB	2724
ASY27	PHIN	989	BCY14	SIHG	2318	CDT1313	CLE	3307	CK277	RAYN	2102	EM500	ELE	2886
ASZ10	TFKG	1527	BCY15	SIHG	2319		INTG		CK311	RAYN	2992	EM600	ELE	2887
ASZ15	PHIN	3299	BCY16	SIHG	2320	CDT1315	CLE	3308	CK312	RAYN	2993	ES3110	EBAS	65
	RADF		BCY17	SIHG	1125	CDT1319	CLE	3309	CK313	RAYN	2994	ES3111	EBAS	66
ASZ16	PHIN	3300	BCY18	SIHG	1143	CDT1320	CLE	3310	CK314	RAYN	2995	ES3112	EBAS	67
	RADF		BCY19	SIHG	1528	CDT1321	CLE	3311	CK315	RAYN	2996	ES3113	EBAS	68
ASZ17	PHIN	3301	BCY20	SIHG	1529	CDT1322	CLE	3312	CK419	RAYN	1994	ES3114	EBAS	69
	RADF		BCZ10	PHIN	1952				CK420	RAYN	1995	ES3115	EBAS	70
ASZ18	PHIN	3302		AMP		CK4	RAYN	583	CK421	RAYN	1996	ES3116	EBAS	71
	RADF		BCZ11	PHIN	1979	CK4A	RAYN	620	CK422	RAYN	1997	ES3120	EBAS	147
ASZ20	PHIN	686		AMP		CK13	RAYN	580	CK474	RAYN	1998	ES3121	EBAS	148
	MULB			MULB		CK13A	RAYN	581	CK475	RAYN	1999	ES3122	EBAS	149
ASZ21	PHIN	734	BCZ12	PHIN	1953	CK14	RAYN	601	CK476	RAYN	2000	ES3123	EBAS	150
	MULB			AMP		CK14A	RAYN	602	CK477	RAYN	2001	ES3124	EBAS	151
ASZ23	PHIN	721	BFY10	RADF	2225	CK16	RAYN	614	CK891	RAYN	166	ES3125	EBAS	152
	MULB		BFZ10	MULB	224	CK16A	RAYN	615	CK892	RAYN	167	ES3126	EBAS	153
ASZ30	TFKG	131	C103	CRY	1958	CK17	RAYN	625	CST1789	CLE	3050	ES3501	EBAS	154
ATZ10	MULB	30	C106	CRY	1959	CK17A	RAYN	626	CTP1104	INTG	3188	F101	FTC	3109
AUY10	PHIN	2991	C118	CRY	1954	CK22	RAYN	568	CTP1111	CLE	3313	F102	FTC	3110
AUZ11	TFKG	2869	C119	CRY	1955	CK22A	RAYN	569		INTG		F103	FTC	3111
B177	BEN	3095	C201	CRY	1911	CK22B	RAYN	570	CTP1500	CLE	3462	F104	FTC	3068
B178	BEN	3096	C202	CRY	1930	CK22C	RAYN	571		INTG		F105	FTC	3069
B179	BEN	3097	C301	CRY	1912	CK25	RAYN	584	CTP1503	CLE	3463	F106	FTC	3070
B1013	BEN	2816	C302	CRY	1931	CK25A	RAYN	585		INTG		F107	FTC	3071
B1013A	BEN	2817	C302	CRY	1931	CK26	RAYN	593	CTP1504	CLE	3464	F108	FTC	3112
B1017	BEN	3186	C401	CRY	1913	CK26A	RAYN	594		INTG		F109	FTC	3113
B1022	BEN	2182	C402	CRY	1932	CK27	RAYN	616	CTP1508	CLE	3465	F110	FTC	3114
B1085	BEN	3187	C610	CRY	2082	CK27A	RAYN	617		INTG		F111	FTC	3115
B1151	BEN	3403	C611	CRY	2083	CK28	RAYN	623	CTP1544	CLE	3466	F112	FTC	3116
B1151A	BEN	3404	C612	CRY	2084	CK28A	RAYN	624		INTG		F113	FTC	3117
B1151B	BEN	3405	C613	CRY	2085	CK64	RAYN	551	CTP1545	CLE	3467	F114	FTC	3118
B1152	BEN	3406	C614	CRY	2086	CK64A	RAYN	552		INTG		F115	FTC	3072
B1152A	BEN	3407	C615	CRY	2087	CK64B	RAYN	553	CTP1552	CLE	3468	F116	FTC	3073
B1152B	BEN	3408	C620	CRY	2088	CK64C	RAYN	554		INTG		F117	FTC	3074
B1154	BEN	2254	C621	CRY	2089	CK65	RAYN	562	CTP1553	CLE	3469	F117A	FTC	3075
B1178	BEN	3409	C622	CRY	2090	CK65A	RAYN	563		INTG		F118	FTC	3076
B1181	BEN	3628	C623	CRY	2091	CK65B	RAYN	564	CTP3500	CLE	3470	F118A	FTC	3077
B1274	BEN	3410	C624	CRY	2092	CK65C	RAYN	565	CTP3503	CLE	3471	F119	FTC	3078
B1274A	BEN	3411	C625	CRY	2093	CK66	RAYN	572	CTP3504	CLE	3472	F119A	FTC	3079
B1274B	BEN	3412	C631	CRY	2094	CK66A	RAYN	573	CTP3508	CLE	3473	F120	FTC	3080
BC1073	BEN	3413	C632	CRY	2095	CK66B	RAYN	574	CTP3544	CLE	3474	F120A	FTC	3081
BC1073A	BEN	3414	C633	CRY	2096	CK66C	RAYN	575	CTP3545	CLE	3475	F121	FTC	3119
BC1073B	BEN	3415	C650	CRY	2097	CK67	RAYN	576	CTP3552	CLE	3476	F121A	FTC	3120
BCY10	PHIN	2117	C651	CRY	2098	CK67A	RAYN	577	CTP3553	CLE	3477	F122	FTC	3121
	AMP		C652	CRY	2099	CK67B	RAYN	578		INTG		F122A	FTC	3122
BCY11	PHIN	2118	C653	CRY	2100	CK67C	RAYN	579	DT1110	BRDB	2719	F123	FTC	3123
	AMP		CDT1309	CLE	3303	CK83	RAYN	472	DT1111	BRDB	2720	F123A	FTC	3124
BCY12	PHIN	2118	CDT1310	CLE	3304	CK86	RAYN	504	DT1112	BRDB	2721	F124	FTC	3125
	AMP		CDT1311	CLE	3305	CK261	RAYN	457	DT1120	BRDB	2722	F124A	FTC	3126
	AMP			INTG		CK262	RAYN	458	DT1121	BRDB	2723			

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TYPE No.	MFRS.	LINE No.	TYPE No.	MFRS.	LINE No.	TYPE No.	MFRS.	LINE No.	TYPE No.	MFRS.	LINE No.	TYPE No.	MFRS.	LINE No.
GET102	GECB	1674	GFT21/30	TKAD	567	GT123	GIC	1229	HA7598	HUG	2595	MP502	MOTA	3733
GET103	GECB	1660b	GFT25/15	TKAD	555	GT167	GIC	1230	HA7599	HUG	2596	MP502A	MOTA	3734
GET104	GECB	1661	GFT25/30	TKAD	556	GT222	GIC	1540	HA7630	HUG	2243	MP503	MOTA	3735
GET105	GECB	2542	GFT32/15	TKAD	942	GT229	GIC	1541	HA7631	HUG	2244	MP503A	MOTA	3736
GET106	GECB	1661a	GFT32/30	TKAD	943	GT364	GIC	1112	HA7632	HUG	2245	MP504	MOTA	3737
GET110	GECB	2543	GFT32/60	TKAD	944	GT365	GIC	1113	HA7633	HUG	2246	MP504A	MOTA	3738
GET111	GECB	1661b	GFT34/15	TKAD	947	GT366	GIC	1114	HA7730	HUG	2606	MP505	MOTA	3739
GET113	GECB	1675	GFT34/30	TKAD	948	GT758	GIC	738	HA7731	HUG	2607	MP505A	MOTA	3740
GET114	GECB	1662	GFT34/60	TKAD	949	GT792	GIC	775	HA7732	HUG	2608	MP506	MOTA	3741
GET115	GECB	2544	GFT41	TKAD	280	GT903	GIC	1542	HA7733	HUG	2609	MP506A	MOTA	3742
GET116	GECB	2545	GFT42A	TKAD	269	GT904	GIC	1205	HA9048	HUG	2103	MP507	MOTA	3743
GET120	GECB	2546	GFT42B	TKAD	268	GT905	GIC	1543	HA9049	HUG	2104	MP507A	MOTA	3744
GET535	GECB	1662a	GFT43	TKAD	250	GT947	GIC	1544	HA9054	HUG	2014	MT706	HUG	2053
GET536	GECB	1662b	GFT43A	TKAD	237	GT948	GIC	1206	HA9055	HUG	2030	MT706A	HUG	2054
GET538	GECB	1662c	GFT43B	TKAD	247	GT949	GIC	1077	HA9056	HUG	2015	MT706B	HUG	2055
GET571	GECB	3189	GFT44/15E	TKAD	238	GT1604	GIC	729	HA9057	HUG	2031	MT707	HUG	2056
GET572	GECB	3190	GFT3008/20	TKAD	2947	GT1605	GIC	730	HA9058	HUG	2016	MT708	HUG	2057
GET573	GECB	3191	GFT3008/40	TKAD	2948	GT1606	GIC	732	HA9059	HUG	2032	MT743	HUG	2058
GET581	GECB	3192	GFT3008/60	TKAD	2949	GT1607	GIC	813	HA9078	HUG	2105	MT744	HUG	2059
GET582	GECB	3193	GFT3408/20	TKAD	2950	GT1608	GIC	986	HA9079	HUG	2106	MT753	HUG	2056
GET583	GECB	3194	GFT3408/40	TKAD	2951	GT1609	GIC	987	HA9531	HUG	2141	MT914	HUG	2060
GET584	GECB	3195	GFT3408/60	TKAD	2952	GT1644	GIC	1836	HA9531A	HUG	2142	MT1131	HUG	2046
GET585	GECB	3196	GFT4308/40	TKAD	2935	GT5116	GIC	902	HA9532	HUG	2143	MT1132	HUG	2047
GET586	GECB	3197	GFT4308/60	TKAD	2936	GT5117	GIC	907	HA9532A	HUG	2144	MT1132A	HUG	2048
GET691	GECB	520	GFT4308/80	TKAD	2937	GT5148	GIC	245	HA9532B	HUG	2267	MT1132B	HUG	2049
GET692	GECB	521	GFT4608/40	TKAD	2938	GT5149	GIC	275	HF100	ROSG	124	MT1254	HUG	2018
GET693	GECB	522	GFT4608/60	TKAD	2939	GT5151	GIC	2119	HF200	ROSG	125	MT1255	HUG	2033
GET870	GECB	485	GFT4608/80	TKAD	2940	GT5153	GIC	2123	HT100	HSDC	2440	MT1256	HUG	2019
GET871	GECB	476	GT20	GIC	1530	GTA1	ROSG	393	HT101	HSDC	2488	MT1257	HUG	2034
GET872	GECB	507	GT31	AEIL	957	GTA2	ROSG	394	HT102	HSDC	2474	MT1258	HUG	2020
GET873	GECB	477	GT32	AEIL	961	GTA3	ROSG	62	HT103	HSDC	2475	MT1259	HUG	2035
GET874	GECB	508	GT33	AEIL	971	GTE1	ROSG	933	KGS1000	KSC	1663	MT1613	HUG	2050
GET875	GECB	518	GT34	GIC	1531	GTE2	ROSG	934	KGS1001	KSC	1730	NKT121	NTLB	509
GET880	GECB	785	GT34N	GIC	1532	GTL1	ROSG	2997	KGS1002	KSC	1753	NKT122	NTLB	480
GET881	GECB	761	GT34S	GIC	1533	GTL3	ROSG	2953	KGS1003	KSC	1761	NKT123	NTLB	463
GET882	GECB	786	GT35	GIC	1534	GTV	ROSG	935	KGS1004	KSC	1782	NKT124	NTLB	510
GET883	GECB	762	GT40	AEIL	759	HA7206	HUG	2037	KGS1005	KSC	1731	NKT125	NTLB	481
GET884	GECB	787	GT41	AEIL	769	HA7207	HUG	2042	MA1	SPR	52	NKT126	NTLB	464
GET885	GECB	809	GT42	AEIL	780	HA7516	HUG	2603	MA2	SPR	32	NKT127	NTLB	511
GET887	GECB	763	GT43	AEIL	798	HA7517	HUG	2604	MA28	SPR	56	NKT128	NTLB	482
GET888	GECB	764	GT44	AEIL	760	HA7518	HUG	2605	MM486	MOTA	2576	NKT129	NTLB	465
GET889	GECB	788	GT45	AEIL	770	HA7520	HUG	2614	MM487	MOTA	2577	NKT141	NTLB	999
GET890	GECB	789	GT46	AEIL	781	HA7521	HUG	2615	MM488	MOTA	2578	NKT142	NTLB	993
GET891	GECB	765	GT47	AEIL	799	HA7530	HUG	2253	MM511	MOTA	2416	NKT143	NTLB	982
GET892	GECB	790	GT74	GIC	1535	HA7531	HUG	2252	MM512	MOTA	2417	NKT144	NTLB	983
GET895	GECB	814	GT75	GIC	1536	HA7540	HUG	2231	MM513	MOTA	2418	NKT221	NTLB	2113
GET931	GECB	519	GT81	GIC	1537	HA7541	HUG	2232	MP500	MOTA	3729	NKT222	NTLB	1633
GFT20/15	TKAD	548	GT82	GIC	1538	HA7542	HUG	2233	MP500A	MOTA	3730	NKT223	NTLB	1634
GFT20/30	TKAD	549	GT109	GIC	1539	HA7543	HUG	2234	MP501	MOTA	3731	NKT224	NTLB	1635
GFT21/15	TKAD	566	GT122	GIC	1144	HA7597	HUG	2594	MP501A	MOTA	3732	NKT225	NTLB	1636

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NKT226	NTLB	1637	OC23	AMP	2999	OC74	AMP	2430	OC304/1	INTG	436	OC450	INTG	1888
NKT227	NTLB	1638		MULB			PHIN			BRUB			BRUB	
NKT228	NTLB	2114		PHIN			RADF		OC30472	INTG	438	OC450K	INTG	2187
NKT301	NTLB	2849	OC24	AMP	3000	OC75	AMP	953		BRUB			BRUB	
NKT301A	NTLB	2850		MULB			MULB		OC30473	INTG	440	OC460	INTG	1889
NKT302	NTLB	2851		PHIN			PHIN			BRUB			BRUB	
NKT302A	NTLB	2852	OC25	MULB	3198		RADF		OC30571	INTG	442	OC460K	INTG	2188
NKT401	NTLB	3314	OC26	PHIN	3417	OC76	PHIN	963		BRUB			BRUB	
NKT402	NTLB	3315		RADF			RADF		OC30572	INTG	443	OC463	INTG	1883
NKT403	NTLB	3316	OC28	MULB	3318	OC77	PHIN	964		BRUB			BRUB	
NKT404	NTLB	3317	OC29	MULB	3319		RADF		OC30671	INTG	437	OC463K	INTG	2120
NKT501	NTLB	3640	OC30	AMP	2870	OC79	AMP	2429		BRUB			BRUB	
NKT502	NTLB	3641		PHIN			PHIN		OC30672	INTG	439	OC465	INTG	1890
NKT503	NTLB	3642	OC35	MULB	3320		RADF			BRUB			BRUB	
NKT504	NTLB	3643	OC36	MULB	3321	OC80	AMP	2432	OC30673	INTG	441	OC465K	INTG	2189
NS345	NAS	2183	OC41	MULB	225		PHIN			BRUB			BRUB	
NS381	NAS	2159	OC42	MULB	234		RADF		OC307	INTG	965	OC466	INTG	1891
NS382	NAS	2160	OC43	MULB	241	OC83	MULB	1570		BRUB			BRUB	
NS383	NAS	2161	OC44	AMP	709	OC84	MULB	1571	OC308	INTG	966	OC466K	INTG	2190
NS384	NAS	2162		MULB		OC122	MULB	2110		BRUB			BRUB	
NS430	NAS	2367		PHIN			PHIN		OC309	INTG	967	OC468	INTG	1892
NS431	NAS	2368	OC45	AMP	707		MULB	2115		BRUB			BRUB	
NS432	NAS	2369		RADF		OC123	PHIN	2115	OC318	INTG	1871	OC468K	INTG	2191
NS433	NAS	2370		MULB			AMP	766		BRUB			BRUB	
NS434	NAS	2371		PHIN		OC139	MULB	766	OC331	INTG	75	OC469	INTG	1893
NS435	NAS	2372		RADF			PHIN			BRUB			BRUB	
NS436	NAS	2373	OC46	AMP	704		RADF		OC341	INTG	76	OC469K	INTG	2192
NS437	NAS	2374		RADF		OC140	AMP	774	OC342	INTG	77		BRUB	
NS438	NAS	2375	OC47	AMP	705		MULB		OC343	INTG	81	OC470	INTG	1894
NS475	NAS	2259		RADF			PHIN		OC351	INTG	83		BRUB	
NS476	NAS	2260	OC53	AMP	10		RADF		OC361	INTG	78	OC470K	INTG	2193
NS477	NAS	2261	OC54	AMP	11	OC141	AMP	800	OC362	INTG	79		BRUB	
NS478	NAS	2262	OC55	AMP	12		PHIN		OC363	INTG	82	OC480	INTG	1895
NS479	NAS	2263	OC56	AMP	13		RADF			BRUB			BRUB	
NS480	NAS	2264	OC57	AMP	3	OC169	PHIN	256	OC364	INTG	85	OC480K	INTG	2194
NS731	NAS	2255		PHIN		OC170	PHIN	257	OC390	INTG	401		BRUB	
NS732	NAS	2256	OC58	AMP	4		MULB		OC400	INTG	407	OC502	TFKG	196
NS733	NAS	2257		PHIN		OC171	PHIN	258	OC410	INTG	420	OC602SP	TFKG	1607
NS734	NAS	2258	OC59	AMP	8		MULB		OC430	INTG	1885	OC603	TFKG	197
NS792	NAS	2725		PHIN		OC200	AMP	1956		BRUB		OC604	TFKG	198
NS793	NAS	2726	OC60	AMP	14		MULB		OC430K	INTG	2184	OC604SP	TFKG	1608
OC3L	VANN	1545		PHIN		OC201	AMP	1981		BRUB		OC612	TFKG	88
OC3LR	VANN	1546	OC65	MULB	172		MULB		OC440	INTG	1886	OC613	TFKG	96
OC4H	VANN	1176	OC66	MULB	173	OC202	MULB	771		BRUB		OC614	TFKG	113
OC4LP	VANN	1547	OC70	PHIN	938	OC203	MULB	753	OC440K	INTG	2185	OC615	TFKG	118
OC5K	VANN	1235		RADF		OC204	MULB	978		BRUB		OC700	BRUB	2197
OC5N	VANN	1367	OC71	PHIN	945	OC205	MULB	979	OC445	INTG	1887	OC701	BRUB	2196
OC16	MULB	3416		RADF		OC206	MULB	980		BRUB		OC702	BRUB	2198
OC22	PHIN	2998	OC72	PHIN	962	OC303	INTG	435	OC445K	INTG	2186	OC703	BRUB	2195
	AMP			RADF			BRUB			BRUB		OC704	BRUB	2199
	MULB													

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TYPE No.	MFRS.	LINE No.	TYPE No.	MFRS.	LINE No.	TYPE No.	MFRS.	LINE No.	TYPE No.	MFRS.	LINE No.	TYPE No.	MFRS.	LINE No.
OCF70	AMP	64	PT720	PSI	2639	SFT124	CSF	2203	SFT239	CSF	3325	SFT323	CSF	1695
OD603	TFKG	2871	PT850	PSI	2646		MISI			MISI			MISI	
OD603/50	TFKG	2872	PT850A	PSI	2653	SFT125	CSF	2206	SFT240	CSF	3326	SFT351	CSF	1666
OD650	AEG	3478	PT900	PSI	3483		MISI			MISI			MISI	
OD650B	AEG	3479	R2	RAU	80	SFT125P	CSF	2207	SFT241	CSF	1828	SFT352	CSF	1677
OD651	AEG	3480	R3	RAU	84		MISI			MISI			MISI	
OD651A	AEG	3481	R212	TUNE	1322	SFT130	CSF	2427	SFT242	CSF	1847	SFT353	CSF	1691
OD652	AEG	3482	RT409E	RAYN	2273		MISI			MISI			MISI	
OS13	TOSJ	15	RT482	RAYN	2476	SFT131	CSF	2433	SFT243	CSF	1838	SFT354	CSF	910
OS14	TOSJ	1296	RT483	RAYN	2477		MISI			MISI			MISI	
PADT20	AMP	711	RT484	RAYN	2478	SFT131P	CSF	2434	SFT250	CSF	3327	SFT357	CSF	914
PADT21	AMP	712	RT497M	RAYN	2274		MISI			MISI			MISI	
PADT22	AMP	713	RT498M	RAYN	2275	SFT143	CSF	2204	SFT251	CSF	1826	SFT357P	CSF	918
PADT23	AMP	821	RT656M	RAYN	2276		MISI			MISI			MISI	
PADT24	AMP	822	RT657M	RAYN	2277	SFT144	CSF	2205	SFT252	CSF	1839	SFT358	CSF	915
PADT25	AMP	823	RT656AM	RAYN	2278		MISI			MISI			MISI	
PADT26	AMP	824	RT696M	RAYN	2279	SFT145	CSF	2428	SFT253	CSF	1855	SN101	CSC	2798
PADT27	AMP	825	RT697AM	RAYN	2280		MISI			MISI		SN102	CSC	2799
PADT28	AMP	834	RT697M	RAYN	2656	SFT146	CSF	2431	SFT259	CSF	1231	SO1	SPR	33
PADT30	AMP	835	RT698M	RAYN	2284		MISI			MISI		SO2	SPR	16
PADT31	AMP	826	RT699AM	RAYN	2285	SFT212	CSF	3203	SFT260	CSF	1304	SO3	SPR	34
PADT35	AMP	1790	RT699M	RAYN	2286		MISI			MISI		SST610	SSE	2425
PADT40	AMP	735	RT1420M	RAYN	2288	SFT213	CSF	3322	SFT261	CSF	1348	ST106	SOI	3745
PADT50	AMP	2934	RT5001	RAYN	2659		MISI			MISI		ST107	SOI	3746
PADT51	AMP	722	RT5002	RAYN	2660	SFT214	CSF	3323	SFT265	CSF	3484	ST108	SOI	3747
PADT60	AMP	723	RT5003	RAYN	2661		MISI			MISI		ST109	SOI	3748
PD3L	NECJ	736	RT5004	RAYN	2662	SFT221	CSF	1825	SFT266	CSF	3485	ST110	SOI	3749
PD6	NECJ	31	RT5151	RAYN	2479		MISI			MISI		ST111	SOI	3750
PMT011	PSI	845	RT5152	RAYN	2480	SFT222	CSF	1837	SFT267	CSF	3486	ST112	SOI	3751
PMT012	PSI	846	RT5203	RAYN	2481		MISI			MISI		ST402	TEC	3001
PMT013	PSI	847	RT5204	RAYN	2482	SFT223	CSF	1854	SFT306	CSF	1178	ST403	TEC	3002
PMT014	PSI	848	RT5212	RAYN	2483		MISI			MISI		ST440	TEC	3136
PMT015	PSI	849	RT5230	RAYN	2484	SFT226	CSF	1236	SFT307	CSF	1257	ST450	TEC	3127
PMT016	PSI	850	RT5401	RAYN	2519		MISI			MISI		ST721	GECB	2007
PMT018	PSI	851	RT5402	RAYN	2520	SFT227	CSF	1272	SFT308	CSF	1349	ST722	GECB	2008
PMT019	PSI	852	RT5403	RAYN	2521		MISI			MISI		ST723	GECB	2021
PMT020	PSI	853	RT5404	RAYN	2522	SFT228	CSF	1344	SFT315	CSF	1398	ST1242	TEC	1296a
PMT111	PSI	854	RT5804	RAYN	2516		MISI			MISI		ST1243	TEC	1382
PMT112	PSI	855	RT7007E	RAYN	2311	SFT232	CSF	2299	SFT316	CSF	909	ST1244	TEC	1383
PMT113	PSI	856	SB100	PHIL	9		MISI			MISI		ST1290	TEC	1384
PMT114	PSI	857				SFT233	CSF	2300	SFT317	CSF	1408	ST1506	TEC	2127
PMT115	PSI	858	SEC1077	SEC	3199		MISI			MISI		ST1543	TEC	132
PMT116	PSI	859	SEC1078	SEC	3200	SFT234	CSF	2301	SFT319	CSF	1399	ST5060	TEC	2788
PMT118	PSI	860	SEC1079	SEC	3201		MISI			MISI		ST5061	TEC	2789
PMT119	PSI	861	SEC1080	SEC	3202	SFT235	CSF	2302	SFT320	CSF	1404	ST6510	TEC	2741
PMT120	PSI	862	SEC1477	SEC	3644		MISI			MISI		ST6511	TEC	2742
PT600	PSI	2835	SEC1478	SEC	3645	SFT237	CSF	1177	SFT321	CSF	1670	ST6512	TEC	2743
PT601	PSI	2836	SEC1479	SEC	3646		MISI			MISI		STC1035	SIL	3051
PT612	PSI	2837	SEC1480	SEC	3647	SFT238	CSF	3324	SFT322	CSF	1676	STC1035A	SIL	3052
PT613	PSI	2838					MISI			MISI		STC1036	SIL	3053



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TYPE No.	MFRS.	LINE No.	TYPE No.	MFRS.	LINE No.	TYPE No.	MFRS.	LINE No.	TYPE No.	MFRS.	LINE No.	TYPE No.	MFRS.	LINE No.
STC1036A	SIL	3054	T1001	PHIL	1919	TI364	TII	1552	TI602	TII	2517	TK400A	STCB	3054a
STC1101	SIL	3128	T1691	CDLF	116	TI365	TII	1553	TIX690	TII	2426	TK401A	STCB	3055
STC1102	SIL	3129	T1796	PHIL	1064	TI366	TII	3003	TIX895	TII	286	TK402A	STCB	3056
STC1103	SIL	3130	T2028	PHIL	388	TI367	TII	3004	TIX1392	TII	2560	TK403A	STCB	3057
STC1104	SIL	3131	T2029	PHIL	389	TI368	TII	3005	TIX2150	TII	2954	TMT839	TEC	1400
STC1105	SIL	3132	T2030	PHIL	390	TI369	TII	3006	TK20C	STCB	1733	TMT840	TEC	1401
STC1105A	SIL	3133	T2357	PHIL	1255	TI370	TII	3007	TK21C	STCB	1688	TMT841	TEC	1409
STC1106	SIL	3134	T2363	PHIL	1256	TI376	TII	1554	TK23C	STCB	1663a	TMT842	TEC	1402
STC1106A	SIL	3135	TA2084	RCAS	2800	TI377	TII	1555	TK24C	STCB	1708	TMT843	TEC	1410
STC1311	SIL	2926	TF49	SIHG	772	TI385	TII	1556	TK25C	STCB	1771	TR34	ITC	870
STC1312	SIL	2927	TF65	SIHG	45	TI386	TII	1557	TK28C	STCB	1754	TR43	ITC	1155
STC1313	SIL	2928	TF65/30	SIHG	46	TI387	TII	1558	TK30C	STCB	1734	TR44	ITC	1149
STC1314	SIL	2929	TF66	SIHG	1115	TI388	TII	1559	TK31C	STCB	1772	TR45	ITC	1133
STC1331	SIL	2930	TF66/30	SIHG	1116	TI389	TII	1560	TK33C	STCB	1233	TR320	ITC	1156
STC1332	SIL	2931	TF66/60	SIHG	1117	TI395	TII	1561	TK34C	STCB	1332	TR321	ITC	1181
STX573010	AEIL	3648	TF78	SIHG	2818	TI396	TII	1562	TK35C	STCB	1689	TR323	ITC	1157
STX5/3025	AEIL	3649	TF78/30	SIHG	2819	TI397	TII	1563	TK36C	STCB	1710	TR383	ITC	1679
STX5/5010	AEIL	3650	TF78/60	SIHG	2820	TI398	TII	1564	TK37C	STCB	1741	TR482	ITC	1185
STX5/5025	AEIL	3651	TF80/30	SIHG	2941	TI399	TII	1565	TK38C	STCB	1777	TR508	ITC	1186
STX5/6010	AEIL	3652	TF80/60	SIHG	2942	TI480	TII	2437	TK40C	STCB	1678	TR650	ITC	1147
STX5/6025	AEIL	3653	TF80/80	SIHG	2943	TI481	TII	2438	TK41C	STCB	1663b	TR653	ITC	1148
STX5/7010	AEIL	3654	THP35	FTHF	1179	TI482	TII	2456	TK42C	STCB	1667	TR721	ITC	1180
STX5/7025	AEIL	3655	THP36	FTHF	1232	TI483	TII	2457	TK44C	STCB	1065	TR722	ITC	1158
SYL1380	SYL	1548	THP45	FTHF	2827	TI484	TII	2458	TK45C	STCB	1671	TR-C44	ITC	1298
SYL1655	SYL	1323	THP46	FTHF	2828	TI485	TII	2151	TK46C	STCB	1654	TR-C45	ITC	1207
SYL1690	SYL	887	THP47	FTHF	2829	TI486	TII	2873	TK47C	STCB	1655	TR-C70	ITC	1566
SYL1697	SYL	877	THP61	FTHF	1145	TI487	TII	2874	TK48C	STCB	1066	TR-C71	ITC	1567
SYL1717	SYL	888	THP62	FTHF	1146	TI492	TII	1297	TK49C	STCB	864	TR-C72	ITC	1568
SYL1750	SYL	1549	THP106	FTHF	1324	TI493	TII	1002	TK200A	STCB	3204	TS13	STCA	954
SYL2120	SYL	863	TI320	TII	737	TI494	TII	1003	TK201A	STCB	3205	TS14	STCA	955
SYL2189	SYL	1550	TI321	TII	739	TI495	TII	1004	TK250A	STCB	2383	TS601	TUNE	1815
T1000	PHIL	1918	TI363	TII	1551	TI496	TII	2439	TK251A	STCB	2384	TS602	TUNE	1816

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TYPE No.	MFRS.	LINE No.	TYPE No.	MFRS.	LINE No.	TYPE No.	MFRS.	LINE No.	TYPE No.	MFRS.	LINE No.	TYPE No.	MFRS.	LINE No.
TS603	TUNE	1817	UST762	UST	1385	V15/20P	NTLB	3209	ZT20	FERB	2209	ZT1486	FERB	2740
TS604	TUNE	1818	UST763	UST	1403	V15/20R	NTLB	53	ZT21	FERB	2210	ZT1487	FERB	3058
TS605	TUNE	1118	UST764	UST	1395	V15/30DP	NTLB	3210	ZT22	FERB	2211	ZT1488	FERB	3059
TS606	TUNE	1119	V6/2R	NTLB	466	V15/30P	NTLB	3211	ZT23	FERB	2212	ZT1489	FERB	3060
TS609	TUNE	3752	V6/2RJ	NTLB	467	V30/10DP	NTLB	3212	ZT40	FERB	2134	ZT1490	FERB	3061
<del>TS610</del>	<del>TUNE</del>	<del>3629</del>	<del>V6/4R</del>	<del>NTLB</del>	<del>471</del>	<del>V30/10P</del>	<del>NTLB</del>	<del>3213</del>	<del>ZT41</del>	<del>FERB</del>	<del>2135</del>	<del>ZT1511</del>	<del>FERB</del>	<del>3062</del>
TT500	TYC	3141	V6/4RJ	NTLB	473	V30/20DP	NTLB	3214	ZT42	FERB	2136	ZT1512	FERB	3063
TT501	TYC	3142	V6/8R	NTLB	496	V30/20IP	NTLB	2854	ZT43	FERB	2137	ZT1513	FERB	3064
TT502	TYC	3143	V6/8RJ	NTLB	497	V30/20P	NTLB	3215	ZT696	FERB	2444	ZT1514	FERB	3065
TX116-1	SONY	2564	V10/1S	NTLB	544	V30/30DP	NTLB	3216	ZT697	FERB	2455	ZT1708	FERB	2153
<del>TX116-2</del>	<del>SONY</del>	<del>2565</del>	<del>V10/1SJ</del>	<del>NTLB</del>	<del>545</del>	<del>V30/30P</del>	<del>NTLB</del>	<del>3217</del>	<del>ZT706</del>	<del>FERB</del>	<del>2152</del>			
TX116-3	SONY	2566	V10/2S	NTLB	546	V60/10DP	NTLB	3218	ZT708	FERB	2219			
UST10	UST	1579	V10/2SJ	NTLB	547	V60/10P	NTLB	3219	ZT1420	FERB	2443			
UST19	UST	1578	V10/15A	NTLB	950	V60/20DP	NTLB	3220	ZT1479	FERB	2710			
UST81	UST	1580	V10/30A	NTLB	952	V60/20IP	NTLB	2855	ZT1480	FERB	2711			
<del>UST87</del>	<del>UST</del>	<del>1572</del>	<del>V10/50A</del>	<del>NTLB</del>	<del>974</del>	<del>V60/20P</del>	<del>NTLB</del>	<del>3221</del>	<del>ZT1481</del>	<del>FERB</del>	<del>2712</del>			
UST88	UST	1577	V15/10DP	NTLB	3206	V60/30DP	NTLB	3222	ZT1482	FERB	2713			
UST722	UST	1581	V15/10P	NTLB	3207	V60/30P	NTLB	3223	ZT1483	FERB	2737			
UST760	UST	1234	V15/20DP	NTLB	3208	XT100	SPR	1791	ZT1484	FERB	2738			
UST761	UST	1325	V15/20IP	NTLB	2853	XT200	SPR	2072	ZT1485	FERB	2739			

4. MANUFACTURERS AND THEIR TYPE NUMBERS



<p><b>Adv. Res. Assoc.</b>                      2N626                      2N676                      2N1017                      2N1019                      2N1020</p> <p><b>Allgemeine</b>                      OD650                      OD650B                      OD651                      OD651A                      OD652</p>	<p><b>Amperex (cont.)</b>                      OC30                      OC44--                      thru                      OC47                      OC55--                      thru                      OC60                      OC74--                      OC75                      OC79                      OC80                      OC139                      OC140                      OC141                      OC200                      OC201                      OCP70                      PADT20--                      thru                      PADT28                      PADT30--                      PADT31                      PADT35                      PADT40                      PADT50                      PADT51                      PADT60</p>	<p><b>Bendix (cont.)</b>                      2N257                      2N268, A                      2N277                      2N278                      2N285A                      2N296                      2N297, A                      2N301, A                      2N307, A                      2N331                      2N350, A                      2N351, A                      2N375                      2N376, A                      2N378                      2N379                      2N380                      2N398, A                      2N399                      2N400                      2N401                      2N404                      2N418                      2N419                      2N420, A                      2N441                      2N442                      2N443                      2N456, A--                      thru                      2N458, A                      2N464--                      thru                      2N467                      2N511, A, B                      thru                      2N514, A, B                      2N553                      2N554                      2N555                      2N561                      2N618                      2N627--                      thru                      2N630                      2N637, A, B                      2N638, A, B                      2N639, A, B                      2N650, A--                      thru                      2N652, A                      2N665--                      2N669                      2N677, A, B, C                      2N678, A, B, C                      2N1007                      2N1008, A, B                      2N1009                      2N1011</p>	<p><b>Bendix (cont.)</b>                      2N1021                      thru                      2N1023                      2N1029, A, B                      2N1029C                      2N1030, A, B, C                      2N1031, A, B, C                      2N1032, A, B, C                      2N1073, A, B                      2N1099                      2N1100                      2N1120                      2N1136, A, B                      2N1137, A, B                      2N1138, A, B                      2N1146, A, B, C                      2N1147, A, B, C                      2N1159                      2N1160                      2N1162, A                      thru                      2N1167, A--                      2N1168                      2N1172                      2N1176, A, B                      2N1227                      2N1287, A                      2N1358                      2N1359                      2N1360                      2N1430                      2N1362--                      thru                      2N1365                      2N1430                      2N1529, A                      thru                      2N1532, A                      2N1533                      2N1534, A                      thru                      2N1537, A                      2N1538--                      2N1539, A--                      thru                      2N1542, A                      2N1543--                      2N1544, A--                      thru                      2N1547, A                      2N1548                      2N1549, A--                      thru                      2N1560, A--                      2N1651                      2N1652                      2N1653                      2N1751                      2N2282--                      thru                      2N1008, A, B                      BI77--                      B178</p>	<p><b>Bendix (cont.)</b>                      B179                      B1013                      B1013A                      B1017                      B1022                      B1085                      B1151, A, B                      B1152, A, B                      B1154                      B1178                      B1181                      B1274                      B1274A                      B1274B                      BC1073                      BC1073A                      BC1073B</p> <p><b>G. &amp; E. Bradley</b>                      DT1110                      DT1111                      DT1112                      DT1120                      DT1121                      DT1122</p> <p><b>Brush Crystal</b>                      2xOC308                      2xOC318                      OC303                      OC304/1                      OC304/2                      OC304/3                      OC305/1                      OC305/2                      OC306/1                      OC306/2                      OC306/3                      OC307                      OC308                      OC309                      OC318                      OC331                      OC363                      OC430, K                      OC440, K                      OC445, K                      OC450, K                      OC460, K                      OC463, K                      OC465, K                      OC466, K                      OC468, K                      OC469, K                      OC470, K                      OC480, K--                      OC700--                      OC704</p>	<p><b>Cie des Lampes</b>                      25T1                      26T1                      35T1                      36T1                      37T1                      44T1                      941T1                      965T1                      987T1                      988T1                      989T1                      990T1                      991T1                      992T1                      T1691</p> <p><b>Clark Semicon.</b>                      SN101                      SN102</p> <p><b>Clevite</b>                      2N155                      2N176                      2N235A                      2N242                      2N250                      2N255                      2N256                      2N257, B, G, W                      2N268, A                      2N285A                      2N296                      2N297, A                      2N301, A                      2N375                      2N376A                      2N379                      2N380                      2N418                      2N456, A                      2N457, A                      2N458, A                      2N561                      2N618                      2N637, A, B                      2N638, A, B                      2N639, A, B                      2N665                      2N669                      2N677, A, B, C                      2N678, A, B, C                      2N1011                      2N1032, A, B, C                      2N1120                      2N1136, A, B                      2N1137, A, B                      2N1138, A, B                      2N1146, A, B, C                      2N1147, A, B, C                      2N1159</p>	<p><b>Clevite (cont.)</b>                      2N1162                      thru                      2N1168                      2N1295--                      2N1359                      2N1360                      2N1362--                      thru                      2N1365                      2N1419--                      2N1529--                      thru                      2N1532                      2N1534--                      thru                      2N1537                      2N1539--                      thru                      2N1542                      2N1544--                      thru                      2N1547                      2N1549--                      thru                      2N1560                      2N1755--                      thru                      2N1762                      2N2061--                      thru                      2N2067                      2N2067B, G                      2N2067-O, W                      2N2068, G, O                      2N2069                      2N2070                      CDT1309--                      thru                      CDT1313--                      CDT1315--                      CDT1319--                      CDT1322--                      CST1789--                      CTP1111                      CTP1500                      CTP1503                      CTP1504                      CTP1508                      CTP1544                      CTP1545                      CTP1552                      CTP1553                      CTP1553                      CTP1500                      CTP1503                      CTP1504                      CTP1508                      CTP1544                      CTP1545                      CTP1552                      CTP1553                      CTP3500                      CTP3503                      CTP3504                      CTP3508                      CTP3544</p>	<p><b>Clevite (cont.)</b>                      CTP3545                      CTP3552                      CTP3553</p> <p><b>COSEM</b>                      2N384                      2N388                      2N395                      2N396                      2N397                      2N404                      2N428                      2N524                      2N525                      2N526                      2N527                      2N1039                      2N1225                      2N1358                      SFT124                      SFT125, P                      SFT130                      SFT131, P                      SFT143                      thru                      SFT146                      SFT147--                      SFT213                      SFT214                      SFT221                      SFT222                      SFT223                      SFT226                      SFT227                      SFT228                      SFT232--                      thru                      SFT235--                      SFT237--                      thru                      SFT243                      SFT250--                      thru                      SFT253                      SFT255--                      SFT260                      SFT261                      SFT265                      SFT266                      SFT267                      SFT306                      SFT307                      SFT308                      SFT315                      SFT316                      SFT317--                      SFT319--                      SFT323</p>	<p><b>COSEM (cont.)</b>                      SFT351                      thru                      SFT354                      SFT357, P                      SFT358</p> <p><b>Crystalonics</b>                      2N327A                      2N328A                      2N329A                      2N1640--                      thru                      2N1643--                      CI03--                      C106                      C118                      C119                      C201                      C202                      C301                      C302                      C401                      C402--                      C610--                      thru                      C615--                      C620--                      thru                      C625                      C631--                      C632                      C633                      C650--                      thru                      C653</p> <p><b>Delco</b>                      2N173                      2N174, A                      2N277                      2N278                      2N297A                      2N392                      2N441                      2N442                      2N443                      2N456A                      2N457A                      2N458A                      2N553                      2N665                      2N669                      2N1011                      2N1021                      2N1022                      2N1099                      2N1100</p>	<p><b>Delco (cont.)</b>                      2N1159                      2N1160                      2N1168                      2N1172                      2N1358                      2N1412                      2N1518--                      thru                      2N1523                      2N1534--                      thru                      2N1537                      2N1609--                      thru                      2N1612                      2N1970                      2N1971</p> <p><b>Ebauches</b>                      ES3110                      thru                      ES3116                      ES3120--                      thru                      ES3126                      ES3501--</p> <p><b>Electromation</b>                      EM500                      EM600</p> <p><b>Electr. Transistors</b>                      2N34, A                      2N35                      2N36                      2N37                      2N38                      2N43, A                      2N44, A                      2N45                      2N59, A, B, C                      2N60, A, B, C                      2N61, A, B, C                      2N63                      2N64                      2N67                      2N78, A                      2N94, A                      2N97                      2N98                      2N99                      2N103--                      thru                      2N108                      2N109--                      2N111, A</p>
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### 4. MANUFACTURERS AND THEIR TYPE NUMBERS

Electr. Trans. (cont.)	Electr. Trans. (cont.)	Electr. Trans. (cont.)	Electr. Trans. (cont.)	Electr. Trans. (cont.)	Fairchild (cont.)	Fanon (cont.)	Fr. T-H (cont.)	Fuji	GE-Engl. (cont.)
2N112, A	2N284, A	2N465	2N672	2N1284	2N697	2N1616, A	2N396, A	2SA32	GET880
2N113	2N291	2N466	2N674	2N1299	2N698	2N1617, A	2N397	2SA33	thru
2N114	2N292	2N467	2N679	2N1302 ---	2N699, B	2N1618, A	2N441	2SA138	GET885
2N123	2N293	2N469A	2N680	thru	2N706	2N1620	2N508	2SA139	GET887 ---
2N124	2N302	2N481 ---	2N1000	2N1313	2N706A, C	2N2101	2N524 ---	2SA188	thru
2N125	2N306	thru	2N1008, A, B	2N1316	2N707	FI01 ---	thru	2SA189	GET892 ---
2N126	2N308 ---	2N486	2N1010	2N1317	2N708	thru	2N527	2SA251	GET895 ---
2NI30A ---	thru	2N501 ---	2N1012	2N1318	2N709	F116 ---	2N696 ---	2SA252	GET931
thru	2N312	2N505	2N1017	2N1319	2N717	FI17, A ---	2N705	2SA253	ST721
2N133A	2N315, A ---	2N506	2N1018	2NI343 ---	2N718	thru	2N711	2SA291	ST722
2NI35 ---	2N316, A	2N508	2NI056 ---	thru	2N718A	F124, A	2N717	2SB16A	ST723
thru	2N317, A	2N515 ---	thru	2N1357	2N719, A		2N1056	2SB17A	
2N140	2N319 ---	thru	2N1059	2NI366 ---	2N720, A		2N1057	2SB18A	
2NI45 ---	thru	2N527	2NI065 ---	2N1367	2N721		2NI208 ---	2SB19	
2N146	2N324	2N519A ---	2N1086, A	2NI370 ---	2N722		thru	2SB20	
2N147	2N331 ---	thru	2N1087	thru	2N753		2N1212	2SB21	
2N164A	2N356, A	2N523A	2N1090	2N1382	2N869	<b>Ferranti</b>	2NI57I, A, B	2SB57	
2N165	2N357, A	2N529 ---	2N1091	2NI383 ---	2N870	ZT20 ---	2T3 ---	2SB59	
2N166	2N358, A	thru	2N1093	2N1387	2N871	thru	3N34 ---	2SB60, A	
2N167, A	2N359	2N534	2N1097	2N1408	2N909 ---	ZT23	thru	2SB295	
2N169, A	2N360 ---	2N535, A, B	2N1098	2NI413 ---	thru	ZT40 ---	3N37 ---	ZSC26 ---	
2N170	thru	2N536	2N1101	thru	2N917	thru		thru	
2N172	2N369	2N556	2N1102	2N1416	2N956 ---	ZT43	3T3	2SC29	
2N175	2N377, A ---	thru	2NI107 ---	2NI431 ---	2N957	ZT696 ---	4T3		
2NI80 ---	2N381	2N559	thru	2NI446	2N978	ZT697	10T2		
thru	2N382	2N563 ---	2N1110	thru	2N995	ZT706	11T2		
2N194	2N383	thru	2NI111, A, B	2N1452	2N1131	ZT708	12T2		
2NI86A ---	2N385, A	2N572	2N1114	2NI471	2N1132	ZT1420	17T1		
2N187A	2N388, A	2N576, A	2N1115	2N1473	2N1253	ZTI479 ---	18T1		
2N188A	2N393 ---	2N578	2N1121	2N1478	2N1420, A	thru	25T1		
2N194A	thru	thru	2N1124	2NI524 ---	2N1613	ZT1490	25T2		
2N206	2N397	2N587	2N1125	thru	2N1711	ZTI51I ---	26T1		
2N207, A, B	2N394A ---	2N591 ---	2N1128	2N1527	2N1889	thru	26T2		
2N211	2N396A	2N597	2N1129	2NI605, A	2N1890	ZT1514	26T2C		
2N212	2N398, A	2N598	2N1130	2N1614	2N1893	ZTI708 ---	28T2		
2N213, A	2N402 ---	2N599	2N1144	2N1624	2NI972 ---		29T2		
2NI14 ---	thru	2N609	2N1145	2NI631	thru		29T2C		
thru	2N417	thru	2N1171	thru	2N1975	<b>Fr. Th-Houston</b>	35T1		
2N220	2N404A ---	2N613	2NI185 ---	2N1639	2NI978 ---	1T3	36T1		
2N223 ---	2N413A	2N617	thru	2NI672 ---	2N1983	2N43	37T1		
thru	2N414A, B, C	2N624	2N1188	2N1678	2N1984	2N44	38T1		
2N229	2N415A	2N631 ---	2NI191 ---	2N1694	2N1985	2N135	39T1		
2N233, A	2N422	2N632	2N1192	2NI775 ---	2NI986 ---	2N136	44T1		
2N237	2N425 ---	2N633	2N1193	thru	thru	2N137	64T1		
2N238	thru	2N634, A	2N1194	2N1527	2N1991	2N173	65T1		
2N241, A	2N428	2N635, A	2N1198	2NI924 ---	2N2045 ---	2N174, A	82T1		
2N249	2N438, A ---	2N636, A	2N1198	2N1925	2N2060	2N186, A	THP35		
2N252	2N439, A	2N647 ---	2NI213 ---	thru	2N2297	2N187, A	THP36		
2N253	2N440, A	2N649	thru	2N1217	2N1926	2N188, A	THP45		
2N254	2N444, A ---	2N650, A	2N1217	2NI224 ---		2N189	THP46		
2N265	thru	2N651, A	2NI226			2N191	THP47		
2N269	2N447, A ---	2N652, A	2N1251	<b>Fairchild</b>	<b>Fanon</b>	2N277	THP61		
2N270	2N448 ---	2N653	2N1265	2N497	2N389, A	2NI979 ---	THP62		
2N271	2N449	2N654	2N1266	2N498	2N424, A	thru	THP106		
2N271A	2N450	2N654	2N1273	2N545 ---	2N1069	2N187A			
2N274	2N450	2N655	2N1274	thru	2N1070	2N188, A			
2N279 ---	2N460	2N658 ---	2N1280	2N552 ---	2NI487 ---	2N189			
thru	2N461	thru	2N1281	2N656 ---	thru	2N191			
2N283	2N462	2N662	2N1282	2N657	2N1490	2N277			
	2N464	2N670		2N696		2NI979 ---			

**G. E. - U.S.**

2N43, A  
2N44, A  
2N78, A  
2N107  
2N123  
2N167, A  
2N168A  
2N169, A  
2N170  
2N186A  
2N187A  
2N188A  
2NI89 ---

**Canadian G. E.**

2N497, A  
2N498, A  
2N656, A  
2N657, A  
2N1671, A, B

**G. E.-England**

GET102  
thru  
GET106  
GET110  
GET111  
GET113 ---

thru  
GET116  
GET120 ---

GET535  
GET536  
GET538  
GET571  
GET572  
GET573  
GET581 ---

thru  
GET586  
GET691 ---

GET692  
GET693  
GET870 ---

thru  
GET875

## 4. MANUFACTURERS AND THEIR TYPE NUMBERS



<p><b>GE-US (cont.)</b></p> <p>2N489 thru 2N494 2N497, A 2N498, A 2N508 2N524 2N525 2N526 2N527 2N634, A 2N635, A 2N636, A 2N656, A 2N657, A 2N658 thru 2N699 2N705 2N706, A 2N708 2N710 2N711, A, B 2N725 2N753 2N759 2N760 2N781 2N782 2N828 2N834 2N914 2N915 2N916 2N960 2N961 2N962 2N964 2N965 2N966 2N994 2N1057 2N1086, A 2N1087 2N1097 2N1098 2N1115 2N1121 2N1144 2N1145 2N1175, A 2N1217 2N1276 2N1277 2N1278 2N1279 2N1303 thru 2N1308</p>	<p><b>GE-US (cont.)</b></p> <p>2N1413 2N1414 2N1415 2N1510 2N1613 2N1614 2N1646 2N1671, A, B 2N1694 2N1711 2N1893 2N1924 2N1925 2N1926 2N2017 2N2106 2N2107 2N2108 2N2193, A 2N2194, A 2N2195, A 2N2196 2N2197 2N2201 thru 2N2204 4C28 thru 4C31 4D20 4D21 4D22 4D24 4D25 4D26</p> <p><b>Gen. Instrument</b></p> <p>2N311 2N312 2N315, A 2N316, A 2N317, A 2N327A thru 2N329A 2N331 2N356, A 2N357, A 2N358, A 2N377 2N385 2N388 2N393 2N396, A 2N398 2N404, A 2N413, A 2N414, A</p>	<p><b>Gen. Inst. (cont.)</b></p> <p>2N416 2N417 2N425 thru 2N428 2N428A 2N438 2N439 2N440 2N444, A 2N445, A 2N446, A 2N447, A 2N454 thru 2N459A 2N499 2N501, A 2N504 2N519, A 2N523, A 2N529 thru 2N533 2N564 2N566 2N568 2N570 2N578 thru 2N582 2N585 2N588 2N592 thru 2N599 2N602, A 2N603, A 2N604, A 2N640 thru 2N645 2N659 2N696 2N697 2N698 2N699 2N702 2N703 2N706, A, B, C 2N707 2N708 2N717, A 2N718, A 2N743 2N744</p>	<p><b>Gen. Inst. (cont.)</b></p> <p>2N753 2N783 2N784 2N834 2N835 2N914 2N919 thru 2N922 2N1000 2N1012 2N1025 2N1026 2N1065 2N1090 2N1091 2N1122, A 2N1177 2N1180 2N1224 2N1226 2N1252 2N1253 2N1302 thru 2N1312 2N1370 2N1392 2N1393 2N1394 2N1408 2N1409, A 2N1410, A 2N1411 2N1420 2N1427 2N1450 2N1478 2N1499A 2N1500 2N1524 thru 2N1527 2N1605 2N1613 2N1624 2N1631 thru 2N1639 2N1670 2N1672, A 2N1678 2N1711 2N1754 2N1837, A 2N1893 2N1958 2N1959</p>	<p><b>Gen. Inst. (cont.)</b></p> <p>2N1962 thru 2N1965 2N1986 thru 2N1990 2N2085 2N2242 2N2318 2N2319 2N2320 GT20 GT34 GT34N GT34S GT35 GT74 GT75 GT81 GT82 GT109 GT122 GT123 GT167 GT222 GT229 GT364 GT365 GT366 GT758 GT792 GT903 GT904 GT905 GT947 GT948 GT949 GT1604 thru GT1609 GT1644 GT5116 GT5117 GT5148 GT5149 GT5151 GT5153</p> <p><b>Hitachi</b></p> <p>2SA12 thru 2SA18 2SA41 2SA42 2SA80 thru 2SA90</p>	<p><b>Hitachi (cont.)</b></p> <p>2SA94 2SA130 thru 2SA135 2SA151 2SA152 2SA208 thru 2SA212 2SA217 2SA231 thru 2SA235 2SA246 2SA290 2SB66 2SB67 2SB68 2SB73 thru 2SB78 2SB80 thru 2SB87 2SB89 2SB153 thru 2SB156 2SB183 2SB184 2SB228 2SB229 2SB230 2SC89 2SC90 2SC91 2SC150 2SC151 2SC152 2SC160 2SD75 2SD77 2SD120 thru 2SD125</p> <p><b>Hoffman-Calif.</b></p> <p>2N696 2N697 2N698 2N699 2N717 2N718 2N719 2N720 2N730 2N731</p>	<p><b>Hoffman-C. (cont.)</b></p> <p>2N1252 2N1253 2N1420 2N1507 2N1644, A 2N1986 2N1987 HT100 thru HT103</p> <p><b>Hughes</b></p> <p>2N327A 2N328A 2N329A 2N706, A, B 2N707 2N708 2N721 2N722 2N726 2N743 2N744 2N753 2N869 2N913 2N914 2N957 2N1034 2N1035 2N1036 2N1037 2N1131, A 2N1132, A, B 2N1196 2N1197 2N1228 thru 2N1234 2N1238 thru 2N1244 2N1254 thru 2N1259 2N1613 2N1623 2N1991 HA7206 HA7207 HA7516 HA7517 HA7518 HA7520 HA7521 HA7530 HA7531</p>	<p><b>Hughes (cont.)</b></p> <p>HA7540 thru HA7543 HA7597 HA7598 HA7599 HA7630 thru HA7633 HA7730 thru HA7733 HA9048 HA9049 HA9054 thru HA9059 HA9078 HA9079 HA9531, A HA9532, A, B MT706, A, B MT707 MT708 MT743 MT744 MT753 MT914 MT1131 MT1132, A, B MT1254 thru MT1259 MT1613</p> <p><b>Industro</b></p> <p>2N123 2N315, A 2N316, A 2N317, A 2N331 2N359 thru 2N363 2N394 thru 2N397 2N398A 2N413 2N414 2N414B, C 2N416 2N417 2N425 thru 2N428 2N460 2N461</p>	<p><b>Industro (cont.)</b></p> <p>2N464 thru 2N467 2N481 2N482 2N483 2N486 2N486 2N519, A 2N523, A 2N564 2N566 2N568 2N570 2N572 2N578 thru 2N582 2N583 2N632 2N633 2N696 2N697 2N699 2N706, A, B 2N753 2N1017 2N1252 2N1253 2N1280 2N1281 2N1282 2N1284 2N1313 2N1316 2N1317 2N1318 2N1343 thru 2N1357 2N1420 2N1446 2N1452 2N1471 2N1544 thru 2N1952 TR34 TR43 TR44 TR45 TR320 TR321 TR323 TR383</p>	<p><b>Industro (cont.)</b></p> <p>TR482 TR508 TR650 TR653 TR721 TR722 TR-C44 TR-C45 TR-C70 TR-C71 TR-C72</p> <p><b>Intermetall</b></p> <p>2N257 2N268 2N1146, A, B, C 2N2061 2N2062 2xOC308 2xOC318 AF129 thru AF133 ASY12 ASY13 ASY14 CDT1311 CDT1313 CTP1104 CTP1111 CTP1500 CTP1503 CTP1504 CTP1508 CTP1544 CTP1545 CTP1552 CTP1553 OC303 OC304/1 OC304/2 OC304/3 OC305/1 OC305/2 OC306/1 OC306/2 OC306/3 OC307 OC308 OC309 OC318</p> <p>OC331 OC341 OC342 OC343 OC351</p>
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### 4. MANUFACTURERS AND THEIR TYPE NUMBERS



Intermetall (cont.)	Kearfott (cont.)	Kobe Kogyo	Matsushita (cont.)	Motorola	Motorola (cont.)	Motorola (cont.)	Mullard (cont.)	Natl. Sem. (cont.)	Natl. Sem. (cont.)
OC361	2N591 /5	2SA30	2SA279	2N173	2N962	2N1692	OC65	2N744	NS430
OC362	2N598	2SA31	2SA308	2N174, A	2N964	2N1693	OC66	2N752	thru
OC363	2N649 /5	2SA35	2SA309	2N176	2N965	2N1924	OC75	2N753	NS438
OC364	2N653	2SA36	2SA310	2N178	2N966	thru	OC83	2N755	NS475
OC390	2N658	2SA40	2SB126	2N277	2N968	2N1926	OC84	thru	thru
OC400	thru	2SA43	2SB127	2N278	thru	2N2042, A	OC122	2N762	NS480
OC410	2N662	2SA64	2SB128, A	2N297A	2N975	2N2043, A	OC123	2N768A	NS731
OC430, K	2N1017	2SA105	2SB129, A	2N319	2N1011	2N2075, A	OC139	thru	thru
OC440, K	2N1018	thru	2SB130	thru	2N1099	thru	OC140	2N760A	NS734
OC445, K	2N1024	2SA118	2SB131	2N324	2N1100	2N2082, A	OC170	2N834	NS752
OC450, K	thru	2SA136	2SB157	2N331	2N1120	2N2137, A	OC171	2N835	NS793
OC460, K	2N1028	2SA137	2SB160	2N350, A	2N1141	thru	OC200	thru	Newmarket
OC463, K	2N1034	2SA254	2SB170	2N351, A	2N1142	2N2146, A	OC206	2N930	NKT121
OC465, K	thru	2SA259	2SB178	2N375	2N1143	2N2152, A		2N935	NKT129
OC466, K	2N1037	2SA266	2SB232	2N376, A	2N1162, A	thru		2N936	NKT141
OC468, K	2N1118	thru	2SB233	2N398, A	thru	2N2159, A		2N937	thru
OC469, K	2N1119	2SA275	2SB234	2N441	2N1167, A	2N2256	Natl. Semicon.	2N981	NKT144
OC470, K	2N1202	2SB32	2SC50	2N442	2N1175	thru		2N1024	NKT221
OC480, K	2N1203	2SB33		2N443	2N1185	2N2259		2N1025	thru
	2N1203	2SB34	Minn. Honeywell	2N461	2N1191	IO1A, B, M		2N1037	NKT228
	2N1233	2SB37	2N538, A	2N464	2N1199	201A, B, M		2N1037	NKT301, A
	2N1262	2SB38	2N539, A	2N465	2N1192	MM486		2N1037	NKT302, A
	2N1263	2SB38	2N540, A	2N466	2N1193	MM487		2N1037	NKT401
	2N1275	2SB39	2N574, A	2N467	2N1194	MM488		2N1037	thru
	2N1287	2SB41	2N575, A	2N508	2N1195	MM511		2N1037	NKT404
	2N1303	2SB42	2N696	2N554	2N1195	MM512		2N1037	NRT501
	2N1305	2SB61	2N697	2N555	2N1204	MM513		2N1037	thru
	2N1307	2SB65	2N699	2N618	2N1358	MP500, A		2N1037	NKT504
	2N1303	2SB120	2N717	2N627	2N1359	thru		2N1037	V6/2R
	2N1309	2SB121	thru	thru	2N1360	2N474, A		2N1037	V6/2RJ
	2N1355	2SB131	2N720	2N730	2N1362	2N475		2N1037	V6/4R
	thru	2SB132	2N730	2N731	thru	thru		2N1037	V6/4RJ
	2N1355	2SB151	2N737	2N1157, A	2N1365	2N479		2N1037	V6/8R
	2N1355	2SB152	2N738	2N1202	2N1412	2N480A		2N1037	V6/8RJ
	2N1357	2SB168	2N739	2N1203	2N1415	2N487		2N1037	V10/1S
	2N1370	2SB169	2N1157, A	2N1203	2N1415	MM488		2N1037	V10/1SJ
	2N1371	2SB180	2N1202	2N1261	2N1494	MM511		2N1037	V10/2S
	2N1374	2SB181	2N1261	2N1262	thru	MM512		2N1037	V10/2SJ
	2N1376	2SB199	2N1262	2N1263	2N1496	MP500, A		2N1037	V10/15A
	2N1429	2SB261	2N1263	2N1420	2N1529	MP507, A		2N1037	V10/30A
	2N1437	2SB262	2N1263	2N1501	thru			2N1037	V10/50A
	2N1469	2SB263	2N1263	2N1502	2N1562			2N1037	V15/10DP
	2N1474, A	2SD33	2N1420	2N1502	2N1529A			2N1037	V15/10P
	2N1475	2SD37	2N1501	2N1507	thru			2N1037	V15/20DP
	2N1476		2N1502	2N1658	2N1562			2N1037	V15/20IP
	2N1477		2N1507	2N1659	2N1562			2N1037	V15/20P
	2N1501		2N1658	2N2266	2N1562			2N1037	V15/20R
	2N1502		2N1659	thru	2N1562			2N1037	V15/30DP
	2N1504/10		2N2266	thru	2N1562			2N1037	V15/30P
	2N1640		thru	2N2269	2N1562			2N1037	V30/10DP
	2N2172		2N2269	3N45	2N1562			2N1037	V30/10P
	2N2225		3N45	thru	2N1562			2N1037	V30/20DP
	KGS1000		thru	3N52	2N1562			2N1037	V30/20IP
	thru				2N1562			2N1037	V30/30DP
	2N523, A				2N1562			2N1037	V30/30P
	2N525				2N1562			2N1037	V60/10DP
	2N538, A				2N1562			2N1037	V60/10P
	2N539, A				2N1562			2N1037	V60/20DP
	2N540, A				2N1562			2N1037	V60/20IP
	2N578				2N1562			2N1037	V60/10P
	thru				2N1562			2N1037	V60/20DP
	2N582				2N1562			2N1037	V60/20IP
	2N591				2N1562			2N1037	V60/20IP

# 4. MANUFACTURERS AND THEIR TYPE NUMBERS



<p><b>Newmarket (cont.)</b></p> <p>V60 /20P V60 /30DP V60 /30P</p> <p><b>Nippon Electric</b></p> <p>2SA19 2SA20 2SA21 2SA26 2SA54 2SA56 2SA153- thru 2SA157 2SA159- 2SA160 2SA167- thru 2SA174 2SA188A 2SA204- thru 2SA207 2SA213- thru 2SA216 2SA238- 2SA244 2SA245 2SA285 2SA286 2SA287 2SB98 2SB99 2SB100- thru 2SB117 2SB107A 2SB108A,B 2SB109A,B 2SB161- thru 2SB166 2SB218- thru 2SB227- 2SB238- 2SB239,A 2SB240,A thru 2SB243,A 2SB244- thru 2SB249 2SB248A- 2SB250,A thru 2SB253,A</p>	<p><b>Nippon (cont.)</b></p> <p>2SB264 2SC22- thru 2SC24 2SC30- thru 2SC33 2SC37- 2SC38 2SC49 2SC121- thru 2SC124 2SD11- 2SD19- thru 2SD23 PD3L PD6</p> <p><b>Northern Electric</b></p> <p>2N560 2N1051 2N1613 2N1893 2N2104 2N2105 2N2216</p> <p><b>Pacific Semicon.</b></p> <p>2N497 2N498 2N656 2N657 2N696 2N697 2N698 2N699 2N702 2N703 2N706,A,B 2N707 2N708 2N717,A- thru 2N720,A- 2N743- 2N744 2N753</p> <p>2N914 2N919- thru 2N922 2N958- thru 2N959</p>	<p><b>PSI (cont.)</b></p> <p>2N988 2N989 2N1252,A 2N1253,A 2N1335 2N1336 2N1337 2N1338 2N1339 2N1340 2N1341 2N1342 2N1409,A 2N1410,A 2N1420 2N1505 2N1506 2N1613 2N1709 2N1710 2N1711 2N1837,A 2N1838 2N1839 2N1840 2N1893 2N1899 2N1900- thru 2N1904 2N2214- PMT011- thru PMT016 PMT018- PMT019 PMT020 PMT111- PMT116 PMT118- PMT119 PMT120 PT600 PT601 PT612 PT613 PT720 PT850,A PT900</p> <p><b>Philco</b></p> <p>2N128 2N207,A,B 2N223 2N227 2N232- thru 2N240</p>	<p><b>Philco (cont.)</b></p> <p>2N317A 2N344/SB101 2N345/SB102 2N346/SB103 2N386 2N387 2N393 2N404 2N428 2N495 2N496 2N499 2N501,A 2N502,A 2N503 2N504 2N534 2N535,A,B 2N536 2N588 2N597- thru 2N601 2N670- thru 2N675 2N788- thru 2N779A,B 2N846,A,B 2N858- thru 2N865 2N978- thru 2N1118,A 2N1119 2N1122,A 2N1123 2N1124 2N1125 2N1128 2N1129 2N1130 2N1158,A 2N1199,A 2N1204,A 2N1267- thru 2N1272 2N1416 2N1427 2N1428 2N1429 2N1472 2N1478 2N1494,A</p>	<p><b>Philco (cont.)</b></p> <p>2N1495 2N1496 2N1499A 2N1500 2N1663 2N1676 2N1677 2N1726 2N1727 2N1728 2N1742- thru 2N1750 2N1748A 2N1752 2N1754 2N1785- thru 2N1790 2N1864- thru 2N1868 2N2048- 2N2086 2N2087 SB100 T1000 T1001 T1796 T2028 T2029 T2030 T2357 T2363</p> <p><b>Philips</b></p> <p>2N1314 AC107 ADZ11 ADZ12 AF102 AF114- thru AF118 AF124- thru AF127 AF212- ASY26 ASY27</p> <p>ASZ15- thru ASZ18 ASZ20- ASZ21 ASZ23</p>	<p><b>Philips (cont.)</b></p> <p>AUY10 BCY10 BCY11 BCY12 BCZ10- BCZ11 BCZ12 OC22 OC23 OC24 OC26 OC30 OC44 OC45 OC57- thru OC60 OC70- OC71 OC72 OC74- thru OC77 OC79- OC80 OC122 OC123 OC139 OC140 OC141 OC169 OC170 OC171</p> <p><b>Radio Corp. Amer.</b></p> <p>2N104 2N105 2N109 2N139 2N140 2N173- thru 2N176 2N215- 2N217 2N218 2N219 2N220 2N269 2N270 2N274 2N277 2N278 2N301,A 2N331 2N351 2N370- thru 2N374</p>	<p><b>RCA (cont.)</b></p> <p>2N376 2N384 2N398,A 2N404,A 2N405- thru 2N412 2N414- 2N441 2N442 2N443 2N497 2N544 2N578- thru 2N586 2N591- 2N640- thru 2N645 2N647- 2N649 2N656 2N696 2N697 2N705 2N706,A 2N708 2N710 2N711 2N794 2N795 2N796 2N828 2N934 2N955 2N1010 2N1023 2N1068- thru 2N1070 2N1090 2N1091 2N1092 2N1099 2N1100 2N1169 2N1170 2N1177- thru 2N1180 2N1183,A,B 2N1184,A,B 2N1213- thru 2N1216 2N1224- 2N1225 2N1226 2N1300</p>	<p><b>RCA (cont.)</b></p> <p>2N1301 2N1319 2N1358 2N1384 2N1395 2N1396 2N1397 2N1412 2N1425 2N1426 2N1450 2N1479- thru 2N1493 2N1511 2N1514 2N1524- thru 2N1527 2N1613- 2N1631 thru 2N1637 2N1639 2N1683- 2N1700- thru 2N1703 2N1708- 2N1768 2N1769 2N1905 2N1906 2N2015 2N2016 2N2102 2N2205 2N2206 TA2084</p> <p><b>Radiotechnique</b></p> <p>2N174 AC130 ADZ11 ADZ12 AF114- thru AF117 ASZ15- thru ASZ18 BPY10 OC26 OC44- thru OC47 OC70- OC71 OC72</p>	<p><b>Radiotec. (cont.)</b></p> <p>OC74 thru OC77- OC79- OC80 OC139 OC140 OC141</p> <p><b>Radio Dev. &amp; Res.</b></p> <p>2N97 2N98 2N99 2N103 2N160,A 2N161,A 2N162,A 2N163,A 2N332- thru 2N337 2N347- 2N348 2N349 2N1095 2N1096</p> <p><b>Rauland Corp.</b></p> <p>R2 R3</p>	<p><b>Raytheon (cont.)</b></p> <p>2N438A 2N439A 2N440A 2N464- thru 2N467 2N481- thru 2N486 2N497- 2N498 2N581 2N582 2N631 2N632 2N633 2N658- thru 2N662 2N698,A 2N697,A 2N698 2N699,A 2N702 2N703 2N705,A 2N706,A,B 2N707 2N710,A 2N711,A- 2N715- thru 2N720 2N730 2N731 2N734 2N736 2N745- thru 2N751 2N781 2N782 2N789- thru 2N793 2N799- thru 2N826 2N828- 2N902 thru 2N908 2N1017- 2N1018 2N1034- thru 2N1037 2N1090 2N1091 2N1171</p>
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## 4. MANUFACTURERS AND THEIR TYPE NUMBERS



<p><b>Raytheon (cont.)</b></p> <p>2N1252, A 2N1253, A 2N1275 2N1302 thru 2N1309 2N1366 2N1367 2N1386 thru 2N1390 2N1409 2N1410 2N1420 2N1468 2N1470 2N1507 2N1528 2N1605 2N1613 2N1623 2N1644 2N1654 2N1655 2N1656 2N1657 2N1660 2N1661 2N1662 2N1894 thru 2N1898 2N1954 thru 2N1957 2N1983 thru 2N1990 2N2008 CK4, A CK13, A CK14, A CK16, A CK17, A CK22, A, B, C CK25, A thru CK28, A CK34, A, B, C thru CK67, A, B, C CK83 CK86 CK261 CK262 CK273 CK277 CK311 thru CK315</p>	<p><b>Raytheon (cont.)</b></p> <p>CK419 thru CK422 CK474 thru CK477 CK891 CK892 RT409E RT482 RT483 RT484 RT497M RT498M RT656M RT657M RT696AM RT696M RT697AM RT697M RT698M RT699AM RT699M RT1420M RT5001 thru RT5004 RT5151 RT5152 RT5203 RT5204 RT5212 RT5230 RT5401 thru RT5404 RT5804 RT7007E</p> <p><b>Rudolph Rost</b></p> <p>GTA1 GTA2 GTA3 GTE1 GTE2 GTL1 GTL3 GTV HF100 HF200</p>	<p><b>Sanyo Electric</b></p> <p>2SA180 thru 2SA183 2SA201 2SA202 2SA203 2SA218 2SA219 2SA221 2SA223 2SA224 2SA226 2SA228 2SA265 thru 2SB23 2SB24 2SBI85 thru 2SB188 2SB215 2SB216 2SB217 2SB254 2SB255 2SB256 2SB271 2SB272 2SB273</p> <p><b>Secoa</b></p> <p>2N389, A 2N424, A 2N1015, A, B 2N1016, A, B 2NI047, A, B thru 2N1050, A, B 2NI067 thru 2N1070 2NI210 2N1211 2N1250 2NI483 thru 2N1490 2NI511 thru 2N1514 2NI620 2N1690 2N1691 2N1701 2N1702 2N1703 2N1722</p>	<p><b>Secoa (cont.)</b></p> <p>2N1768 2N1769 2N2015 2N2016 SEC1077 thru SEC1080 SEC1477 thru SEC1480</p> <p><b>Semi-Onics</b></p> <p>2N173 2N174, A 2N277 2N278 2N441 2N442 2N443 2NI099 2NI100 2N1358 2N1412 2NI518 thru 2N1523 2N2075 thru 2N2082 2NI512 thru 2N2159 ST106 thru ST112</p> <p><b>Shindengen Elec.</b></p> <p>2SB203 thru 2SB214</p> <p><b>Siemens &amp; Halske</b></p> <p>AC108 AC109 AC110 AC120 AC121 AD103 AD104 AD105 AF106 AF107 AF108 AF114 thru AF117 AFY10 AFY11 AFY12 BCY13 thru BCY20</p>	<p><b>Siemens (cont.)</b></p> <p>TF49 TF65 TF65/30 TF66 TF66/30 TF66/60 TF78 TF78/30 TF78/60 TF80/30 TF80/60 TF80/80</p> <p><b>Silicon Trans.</b></p> <p>2N389, A 2N424, A 2N497 2N498 2N547 thru 2N552 2N656 2N657 2N1015, A, B 2N1016, A, B 2NI047 thru 2N1050 2NI067 thru 2N1070 2NI116 2NI208 thru 2N1212 2NI250 2NI479 thru 2N1490 2NI616, A thru 2N1618, A 2NI620 2N1700 2N1701 2N1702 2N1722 2N1724 2N1768 2N1769 2N2033 thru 2N2036 STC1035, A STC1036, A STC1101 thru STC1106</p>	<p><b>Silicon (cont.)</b></p> <p>STC1105A STC1106A STC1311 thru STC1314 STC1331 STC1332</p> <p><b>Soc. Generale-Semiconduttori</b></p> <p>2G108 2G109 2G138 thru 2G141 2G270 2G271 2G319 thru 2G324 2G394 thru 2G398 2G508 2G524 thru 2G527 2G577 2G601 2G602 2GI024 thru 2G1027 2N708 2N1613 2N1711 2N1889 2N1890 2N1893</p> <p><b>Solid State El.</b></p> <p>SST610</p> <p><b>SONY</b></p> <p>2SA121 thru 2SA125 2SA161 thru 2SA166 2SB27 thru 2SB31 2SB48 thru 2SB53</p>	<p><b>SONY (cont.)</b></p> <p>2SB140 thru 2SB146 2SBI43P 2SB144P 2SB147 2SC41 thru 2SC44 2SC73 2SC75 thru 2SC78 2SCI73 2SCI75 2SC178 2SCI91 thru 2SC197 2SD61 2SD66 TX116-I TX116-2 TX116-3</p> <p><b>Sperry</b></p> <p>2N327A 2N328A 2N329A 2N330A 2N696 2N697 2N698 2N699 2N706 2N935 thru 2N946 2NI024 thru 2N1028 2NI034 thru 2N1037</p> <p>2N1219 thru 2N1223 2NI228 thru 2N1234 2NI469 2N1474, A 2N1475 2N1476 2N1477</p>	<p><b>Sperry (cont.)</b></p> <p>2N1917 thru 2N1922 2N2175 thru 2N2178</p> <p><b>Sprague</b></p> <p>2N128 2N129 2N240 2N344/SB101 2N345/SB102 2N346/SB103 2N393 2N499 2N501, A 2N502, A 2N503 2N504 2N588 2N768 2N769 2N779, A 2N846, A 2N979 2N982 2N983 2N984 2N1118, A 2N1119 2N1122, A 2N1204 2N1427 2N1429 2N1494 2N1499A 2N1500 2N1676 2N1677 2N1754 2N2048 2N2096 2N2097 2N2099 2N2100 2NI62 thru 2N101/13 2N102/13 2N109 2N109/5 2N123/5 2N139 2N140 2N144/13 2N155 2N168A 2N169A 2N176</p>	<p><b>Standard Tels.-Aust.</b></p> <p>2N185 2N250 2N251 2N456 thru 2N458 TS13 TS14</p> <p><b>Standard Tels.-Engl.</b></p> <p>2N2234 thru 2N2237 TK20C TK21C TK23C TK24C TK25C TK28C TK30C TK31C TK33C thru TK38C TK40C TK41C TK42C TK44C thru TK49C TR200A TK201A TK250A TK251A TR400A thru TK403A</p> <p><b>Sylvania</b></p> <p>2N34 2N34/5 2N35 2N35/5 2N94, A 2N101/13 2N102/13 2N109 2N109/5 2N123/5 2N139 2N140 2N144/13 2N155 2N168A 2N169A 2N176</p>	<p><b>Sylvania (cont.)</b></p> <p>2N193 2N194, A 2N211 2N212 2N213, A 2N214 2N216 2N217 2N218 2N228 2N229 2N233, A 2N235A 2N235B 2N236B 2N241A 2N242 2N247 2N255 2N256 2N257 2N270 2N285A 2N292 2N296 2N301, A 2N306 2N307, A 2N312 2N321 2N323 2N324 2N326 2N356, A 2N357, A 2N358, A 2N370 thru 2N377, A 2N381 2N382 2N383 2N385, A 2N388, A 2N395 2N396, A 2N397 2N398, A 2N399 2N401 2N404, A 2N405 thru 2N412 2N413, A 2N414, A 2N415A 2N417 2N419</p>
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## 4. MANUFACTURERS AND THEIR TYPE NUMBERS



<b>Sylvania (cont.)</b> 2N420 2N422 2N425 --- thru 2N428 2N438, A 2N439, A 2N440, A 2N460 2N466 2N467 2N482 2N483 2N484 2N486 2N501/18 2N507 2N515 2N516 2N517 2N519 2N520 2N524 2N525 2N526 2N527 2N544 2N554 2N556 2N557 2N558 2N576, A 2N582 2N585 2N587 2N591 2N591/5 2N602 2N603 2N604 2N624 2N635A 2N636A 2N643 2N644 2N645 2N650 2N651, A 2N652, A 2N653 2N677, A, B, C 2N678, A, B, C 2N679 2N696 2N697 2N705 2N706, A, B, C 2N710 2N711, A, B 2N725	<b>Sylvania (cont.)</b> 2N741, A 2N743 2N744 2N753 2N781 thru 2N784 2N828 2N834 2N835 2N960 2N961 2N962 2N964 2N965 2N966 2N1000 2N1008, A, B 2N1009 2N1058 2N1059 2N1101 2N1102 2N1102/5 2N1114 2N1169 2N1170 2N1192 2N1193 2N1218 2N1224 2N1225 2N1226 2N1251 2N1264/13 2N1265/5 2N1266 2N1285 2N1292 2N1294 2N1296 2N1299 2N1302 thru 2N1309 2N1321 2N1323 2N1325 2N1370 2N1372 thru 2N1381 2N1395 2N1396 2N1397 2N1404 2N1413 thru 2N1415	<b>Sylvania (cont.)</b> 2N1431 2N1432 2N1450 2N1473 2N1500/18 2N1605, A 2N1646 2N1673 2N1684 2N1685 2N1699 2N1779 thru 2N1784 2N1891 2N1958 thru 2N1965 2N1969 2N1993 SYL1380 SYL1655 SYL1690 SYL1697 SYL1717 SYL1750 SYL2120 SYL2189  <b>Tekade</b> GFT20/15 GFT20/30 GFT21/15 GFT21/30 GFT25/15 GFT25/30 GFT32/15 GFT32/30 GFT32/60 GFT34/15 GFT34/30 GFT34/60 GFT41 GFT42A, B GFT43, A, B GFT44/15E GFT3008/20 GFT3008/40 GFT3008/60 GFT3408/20 GFT3408/40 GFT3408/60 GFT4308/40 GFT4308/60 GFT4308/80 GFT4608/40 GFT4608/60 GFT4608/80	<b>Telefunken</b> AC105 AC106 AC116 AC117 AC122 AC123 AC124 ACZ10 AF101 AF105 AFZ10 ASZ10 ASZ30 AUZ11 OC602, Sp OC603 OC604, Sp OC612 OC613 OC614 OC615 OD603 OD603/50  <b>Tex. Inst.-Engl.</b> 2G101 2G102 2G103 2G104 2G110 2G210 2G220 thru 2G231 2G240 2G301 thru 2G304 2G305 2G401 2G402 2G403 2N332 thru 2N335 2N337 2N338 2N389 2N424 2N456 2N457 2N458 2N497 2N498 2N656 2N657 2N696 2N697	<b>TII-Engl. (cont.)</b> 2N702 2N706A 2N711, A 2N715 2N716 2N726 2N753 2N929 2N930 2N1131 2N1132 2N1141 2N1142 2N1143 2N1302 thru 2N1309 2S001 thru 2S005 2S012A 2S013A 2S014 2S017 thru 2S020 2S024 2S025 2S026 2S101 thru 2S104 2S131 2S301 thru 2S305 2S701 2S702 2S703 2S711 2S712 2S720 2S721 3N34 3N35 3S002 3S004  <b>Texas Inst.-U. S.</b> 2N117 2N118, A 2N119 2N120 2N122 2N243 2N244 2N250 2N251	<b>TII-US (cont.)</b> 2N332 thru 2N341 2N342, A, B 2N343, B 2N388 2N389, A 2N395 2N396, A 2N397 2N398 2N404 2N424, A 2N426 2N427 2N428 2N456A 2N457A 2N458A 2N497, A 2N498, A 2N511, A, B 2N514, A, B 2N545 thru 2N551 2N594 2N595 2N596 2N656, A 2N657, A 2N696 2N697 2N698 2N699 2N702 2N703 2N705 2N706, A, B 2N710 2N711, A, B 2N715 2N716 2N717 2N718, A 2N719, A 2N720, A 2N721 2N722 2N726 2N727 2N730 2N731 2N734 2N735 2N736, A 2N738 2N739	<b>TII-US (cont.)</b> 2N740 2N743 2N744 2N753 2N760, A 2N780 2N797 2N849 2N850 2N870 2N871 2N910 2N911 2N929 2N930 2N950 thru 2N962 2N964 thru 2N1022 2N1038 thru 2N1045 2N1046, A, B thru 2N1050, A, B 2N1093 2N1116 2N1117 2N1131 2N1132 2N1141, A 2N1142, A 2N1143, A 2N1145 thru 2N1156 2N1195 2N1208 thru 2N1212 2N1250 2N1252 2N1253 2N1273 2N1274 2N1302 thru 2N1309 2N1370 thru 2N1383 2N1385 2N1398 thru 2N1402	<b>TII-US (cont.)</b> 2N1401A 2N1404 2N1405 2N1406 2N1407 2N1420 2N1479 thru 2N1482 2N1507 2N1508 2N1509 2N1564 2N1565 2N1566, A 2N1572 2N1573 2N1574 2N1585 2N1586 thru 2N1594 2N1613 2N1616 2N1617 2N1618 2N1620 2N1647 thru 2N1050, A, B 2N1650 2N1691 2N1711 2N1714 2N1715 2N1716 2N1717 2N1718 2N1719 2N1720 2N1721 2N1722 2N1724 2N1808 2N1889 2N1890 2N1893 2N1907 2N1908 2N1936 2N1937 2N1994 thru 2N2001 2N2173 2N2188 thru 2N2191 3N34 3N35	<b>TII-US (cont.)</b> TI320 TI321 TI363 thru TI370 TI376 TI377 TI385 thru TI389 TI395 thru TI399 TI480 thru TI487 TI492 thru TI496 TI602 TIX690 TIX895 TIX1392 TIX2150  <b>Tokyo Shibaura</b> 2SA37 2SA38 2SA39 2SA49 thru 2SA53 2SA57 2SA58 2SA60 2SA65 2SA66 2SA67 2SA72 thru 2SA78 2SA82 2SA93 2SA127 2SA128 2SA129 2SA175 2SA229 2SA230 2SA236 2SA237 2SA239 2SA240 2SA248 2SA276 2SA277 2SA278 2SA282 2SA283	<b>Shibaura (cont.)</b> 2SA284 2SA304 2SA305 2SA311 thru 2SA316 2SB25 2SB26 2SB40 2SB43 2SB46 2SB47 2SB54 2SB55 2SB56 2SB62 2SB63 2SB64 2SB69 2SB90 2SB91 2SB94 2SB97 2SB122 thru 2SB125 2SB148 2SB149 2SB150 2SB189 2SB200 2SB201 2SB202 2SB231 2SB235 2SB236 2SB237 2SB257 thru 2SB260 2SB265 2SB290 2SB291 2SB292 2SB296 2SC11 thru 2SC14 2SC16 thru 2SC21 2SC74 2SD43 2SD44 OS13 OS14
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### 4. MANUFACTURERS AND THEIR TYPE NUMBERS

<p><b>Transitron</b></p> <p>2N117 2N118, A 2N119 2N120 2N332 --- thru 2N343 2N339A 2N340A 2N341A 2N342A 2N343B 2N389 2N424 2N470 2N471, A 2N472, A 2N473 2N474, A 2N475, A 2N476 2N477 2N478 2N479, A 2N480, A 2N497, A 2N498, A 2N541 2N542 2N543, A 2N545 --- thru 2N552 2N858, A 2N657, A 2N696 --- thru 2N699 --- 2N706 --- 2N717 --- thru 2N720</p>	<p><b>Transitron (cont.)</b></p> <p>2N728 2N729 2N730 2N731 2N734 2N735 2N736 2N738 2N739 2N740 2N754 2N755 2N839 --- thru 2N845 2N909 --- 2N1047, A thru 2N1050, A 2N1052 --- 2N1054 2N1055 2N1116 2N1117 2N1131 2N1132 2N1139 2N1140 2N1149 thru 2N1153 2N1205 --- thru 2N1212 2N1247 --- 2N1248 2N1249 2N1250 2N1252 2N1253 2N1277 --- thru 2N1279</p>	<p><b>Transitron (cont.)</b></p> <p>2N1417 2N1418 2N1420 2N1564 2N1565 2N1566 2N1572 2N1573 2N1574 2N1588 --- thru 2N1594 2N1618 --- thru 2N1620 2N1647 --- thru 2N1650 2N1700 --- 2N1722 2N1724 2N1886 2N1991 2N2018 --- thru 2N2021 2N2032 --- 2N2038 thru 2N2041 2N2198 --- 3N56 3N57 ST402 ST403 ST440 ST450 ST1242 ST1243 ST1244 ST1290 ST1506 ST1543</p>	<p><b>Transitron (cont.)</b></p> <p>ST5060 ST5061 ST6510 ST6511 ST6512 TMT839 thru TMT843</p> <p><b>Tung-Sol</b></p> <p>2N173 2N174, A 2N242 2N277 2N278 2N301, A 2N307, A 2N378 --- thru 2N383 2N396, A --- 2N413 2N414 2N416 2N417 2N426 --- thru 2N428 2N441 --- 2N442 2N443 2N459 2N460 2N461 2N526 2N527 2N1099 2N1100 2N1182 2N1313 2N1358 2N1412</p>	<p><b>Tung-Sol (cont.)</b></p> <p>2N1681 2N1705 2N1706 2N1707 2N1970 2N1980 2N1981 2N1982 2N2110 2N2171 2N2260 2N2261 2N2262 R212 TS601 --- thru TS606 TS609 --- TS610</p> <p><b>Tyco Semicon.</b></p> <p>2N389 2N424 2N1212 2N1660 2N1661 2N1662 TT500 TT501 TT502</p> <p><b>U. S. Transistor</b></p> <p>2N34 2N43A 2N44 2N45 2N315, A 2N316, A 2N317, A 2N320 2N321</p>	<p><b>U S Trans. (cont.)</b></p> <p>2N323 2N331 2N359 --- thru 2N363 2N381 --- 2N382 2N383 2N394 2N395 2N396, A 2N397 2N398 2N404 2N413, A 2N414, A 2N416 2N417 2N422 --- 2N425 thru 2N428 2N464 --- thru 2N467 2N481 --- thru 2N486 2N519 --- thru 2N523 2N631 --- thru 2N633 2N650 --- thru 2N655 2N696 --- 2N697 2N699 2N1017 2N1280 2N1281</p>	<p><b>U S Trans. (cont.)</b></p> <p>2N1282 2N1284 2N1316 2N1317 2N1318 2N1343 --- thru 2N1352 2N1353 --- thru 2N1357 2N3000 --- UST10 UST19 UST81 UST87 UST88 UST722 UST760 --- thru UST764</p> <p><b>Van Der Heem</b></p> <p>OC3L OC3LR OC4H OC4LP OC5K OC5N</p> <p><b>Western Electric</b></p> <p>2N110 2N463 2N528 2N537 2N559 2N560 2N914 2N1051 2N1060</p>	<p><b>W. Elec. (cont.)</b></p> <p>2N1072 2N1094 2N1173 2N1174 2N1195 2N1444 2N1645 2N1646 2N1675 2N1765 2N1841 2N1992 2N2022 2N2238</p> <p><b>Westinghouse-US</b></p> <p>2N1015, A, B 2N1015C, D 2N1016, A, B 2N1016C, D 2N1809 --- thru 2N1812 2N1816 --- thru 2N1819 2N1823 --- thru 2N1826 2N2109 --- thru 2N2112 2N2116 --- thru 2N2119 2N2123 --- thru 2N2126 2N2228 --- 2N2227 2N2228</p>	<p><b>Wstghs.-US (cont.)</b></p> <p>2N2230 2N2231 2N2232</p> <p><b>Western Trans.</b></p> <p>2N327A 2N328A 2N329A 2N1034 2N1035 2N1036 2N1037 2N1228 2N1229 2N1230 2N1231 2N1232 2N1233 2N1234 2N1275 2N1640 --- thru 2N1643</p>
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# 5. OUTLINE DRAWINGS

IN ORDER OF CASE NUMBER



## THE PREFIX LETTERS OF THE OUTLINE DRAWING NUMBERS INDICATE THE FOLLOWING:

- MD— MOUNTED Type— DIAMOND Base
- MM— MOUNTED Type— MISCELLANEOUS Configuration
- MS— MOUNTED Type— SQUARE and Rectangular Base
- MT— MOUNTED Type— THREADED
- OV— OVAL Case
- RO— ROUND Case
- u— MICROMINIATURE Case—
  
- X— MISCELLANEOUS Configuration including Phototransistor.

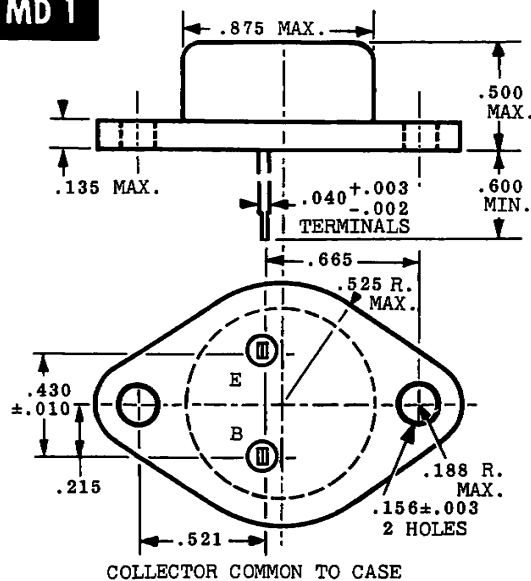
## NOTES:

These outline drawings are intended as a guide to the user. They should not be used for construction purposes without first checking with the appropriate manufacturers.

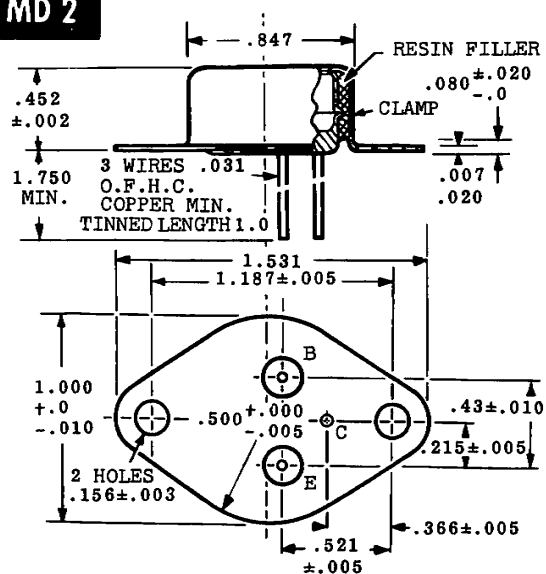
These drawings are referenced in the Technical Sections of this Tabulation in accordance with information supplied by the manufacturers.

The TO drawings have been reproduced from JEDEC Publication No. 12B (July 1960) with the permission of the Electronic Industries Association. JEDEC designations are assigned only to outlines submitted by the JS-10 Committee on Mechanical Standardization and Packaging. The procedure of assigning and announcing the JEDEC designation constitutes registration.

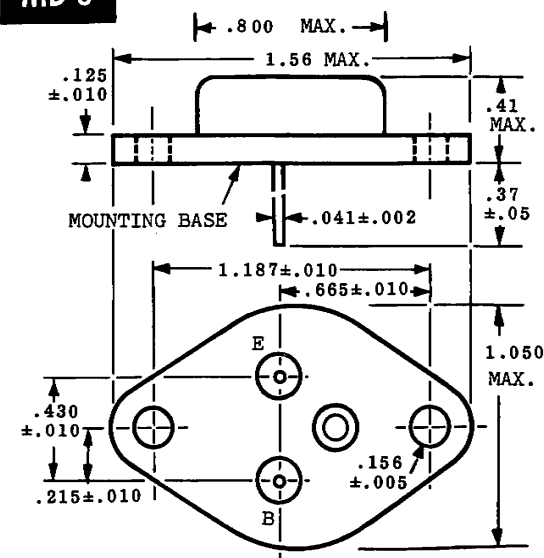
**MD 1**



**MD 2**



**MD 3**

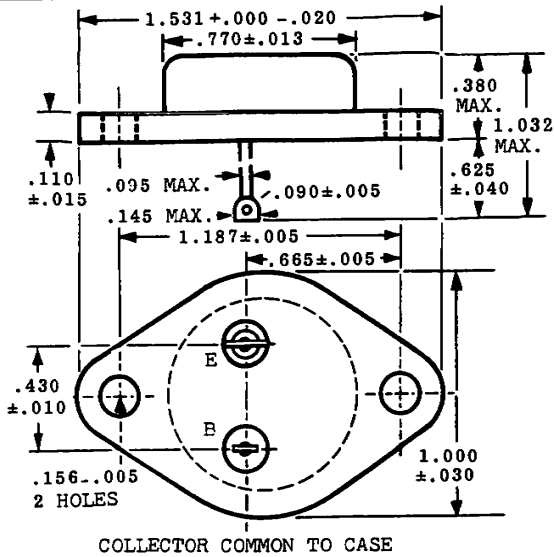


ALL DIMENSIONS IN INCHES

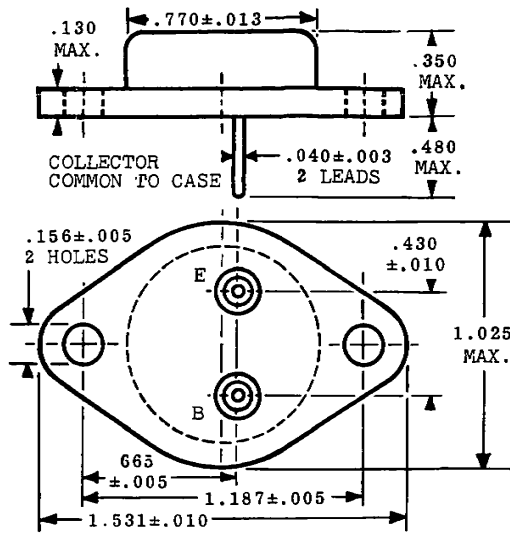
5. OUTLINE DRAWINGS  
IN ORDER OF CASE NUMBER



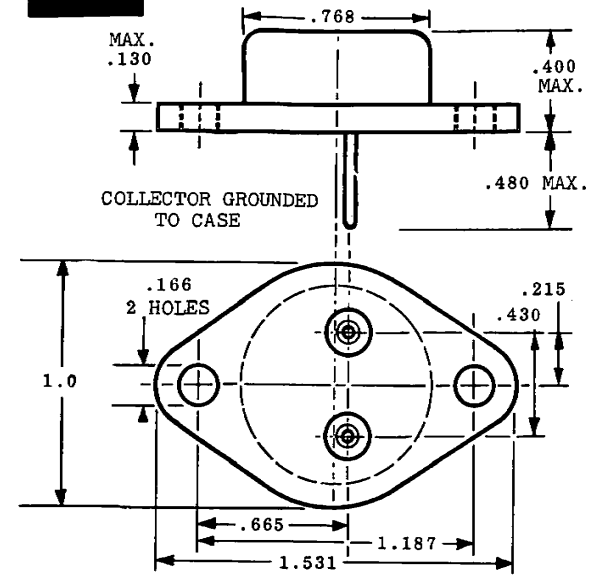
MD 4



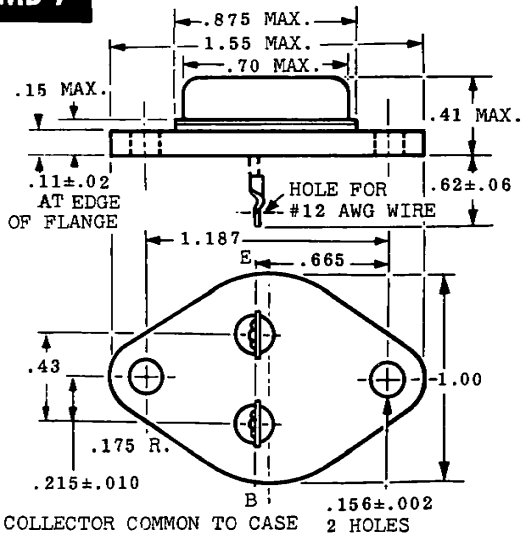
MD 5



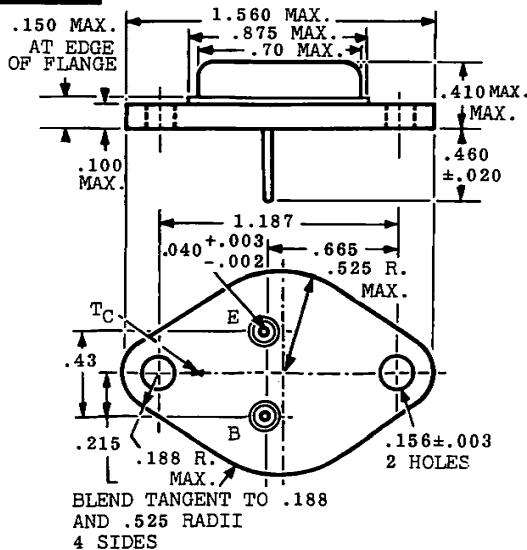
MD 6



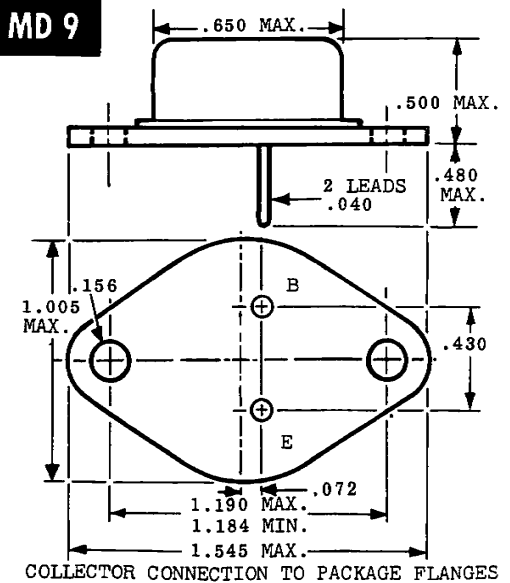
MD 7



MD 8

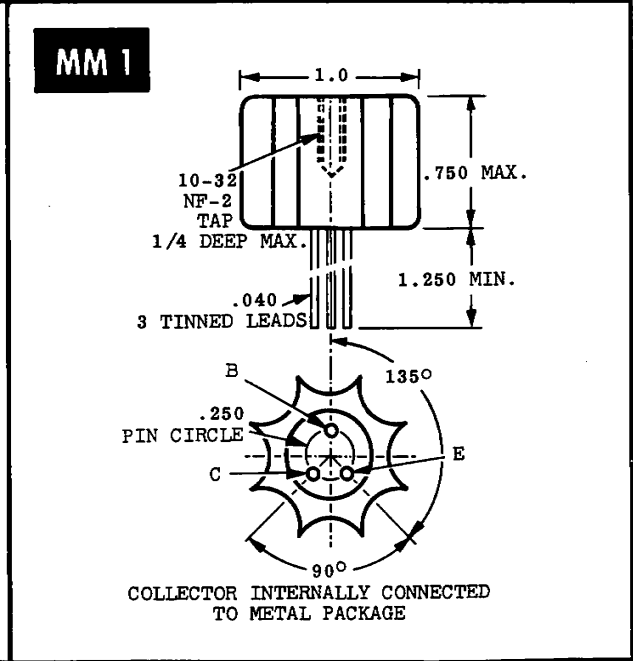
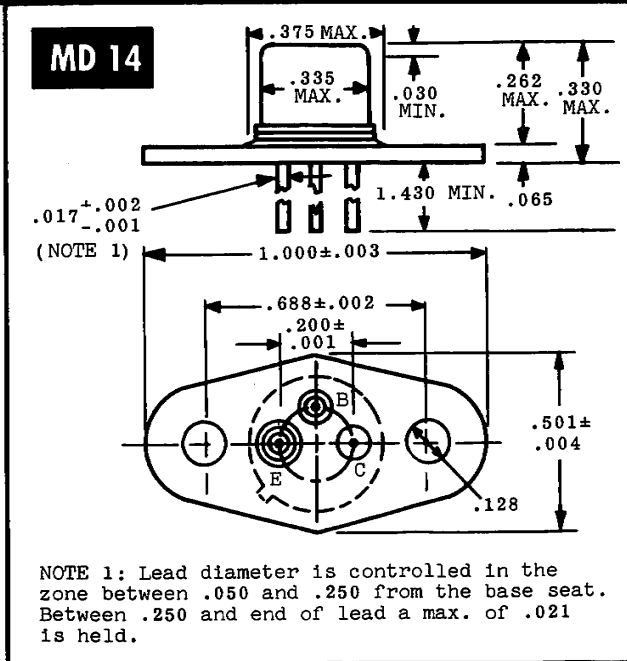
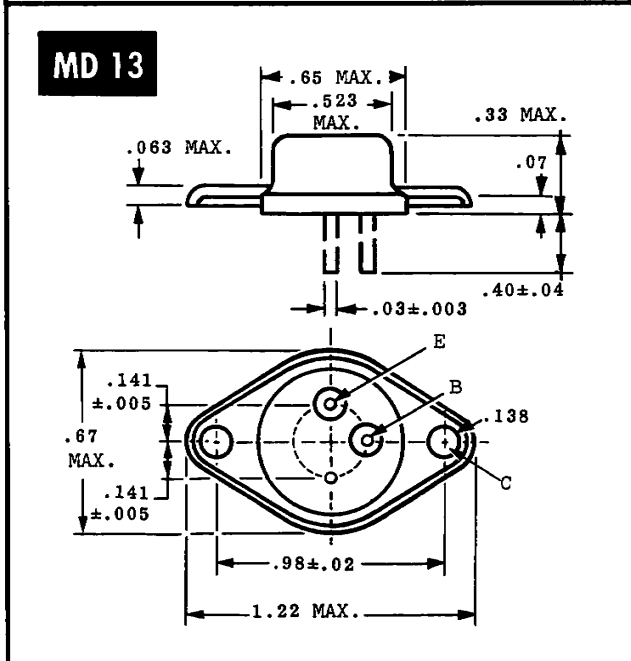
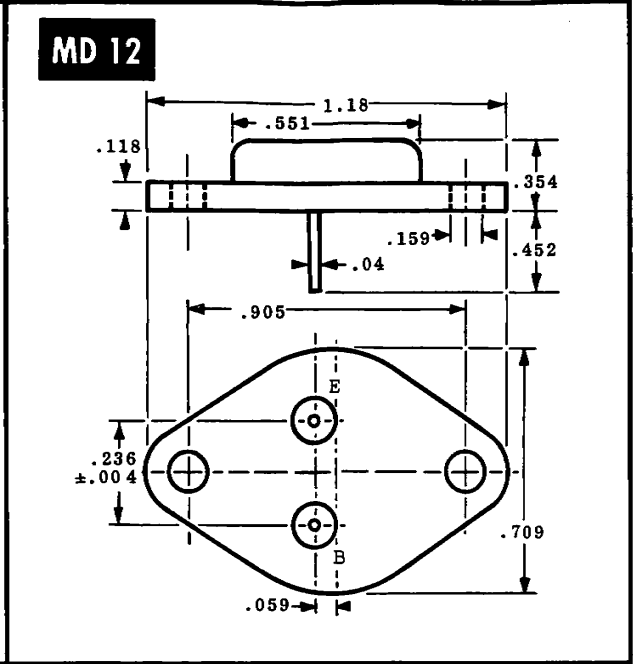
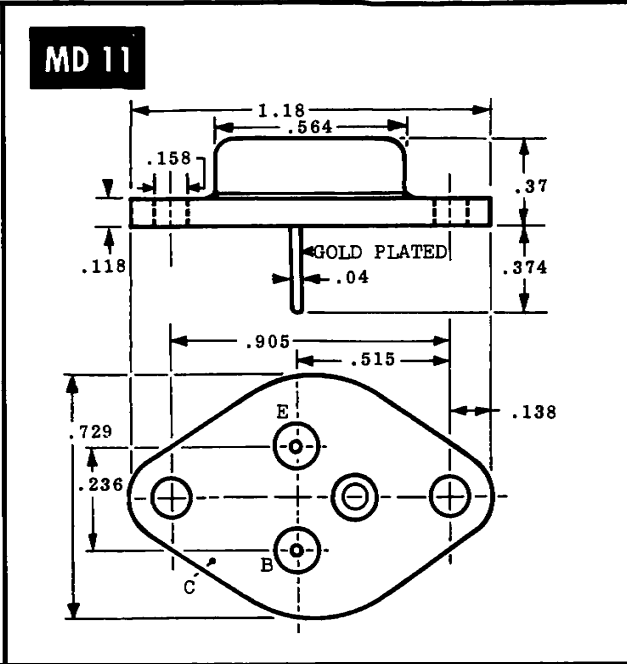
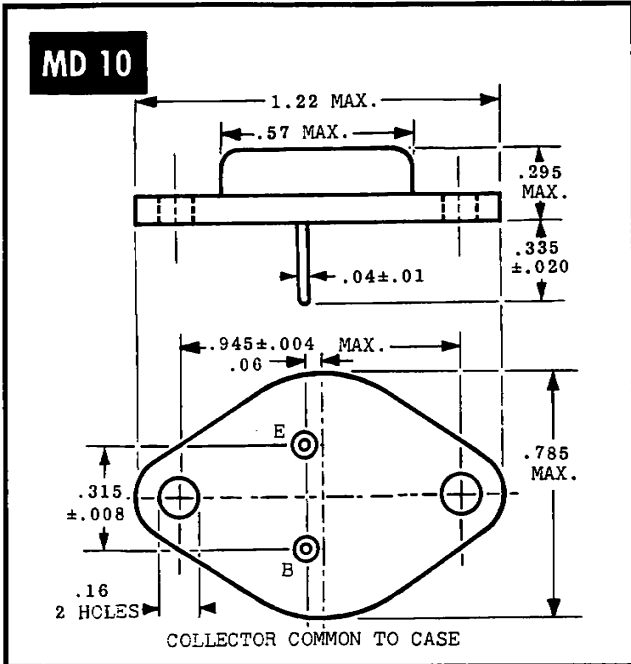


MD 9



ALL DIMENSIONS IN INCHES

# 5. OUTLINE DRAWINGS IN ORDER OF CASE NUMBER

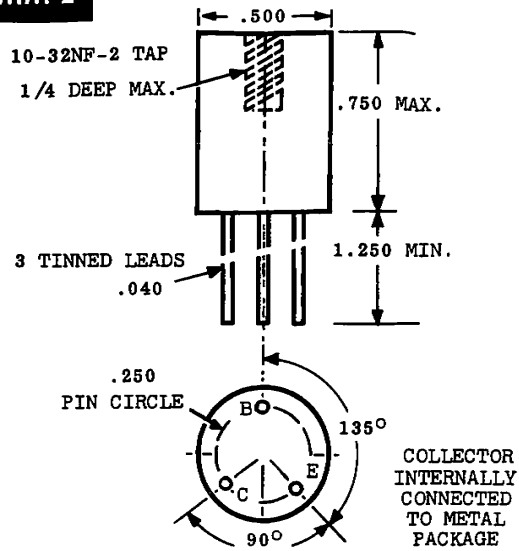


ALL DIMENSIONS IN INCHES

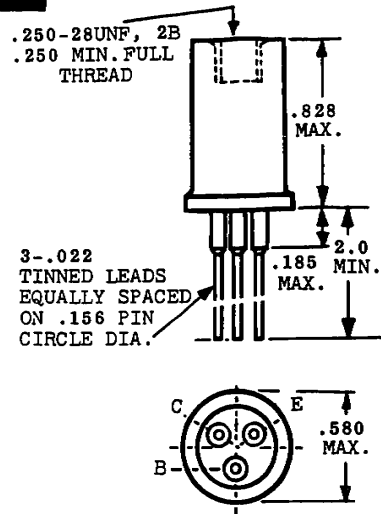
## 5. OUTLINE DRAWINGS IN ORDER OF CASE NUMBER



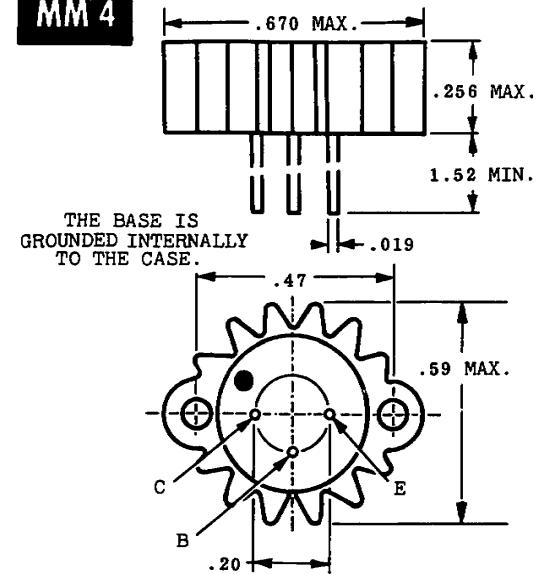
**MM 2**



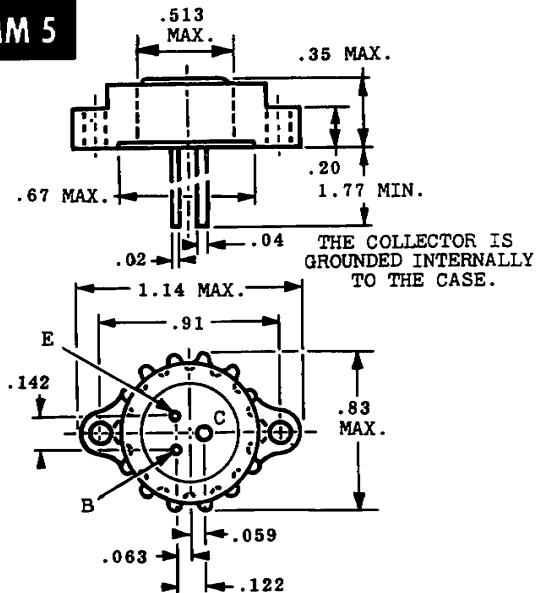
**MM 3**



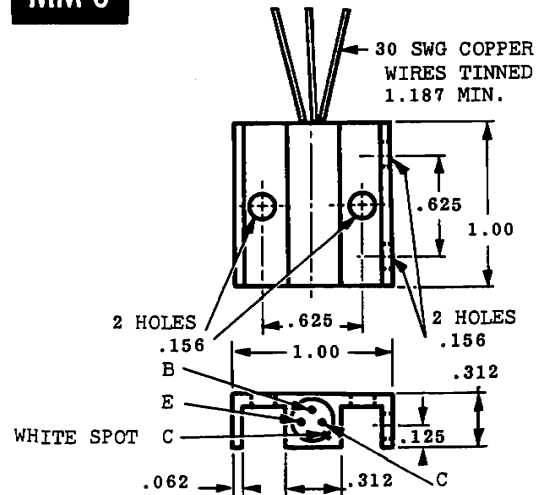
**MM 4**



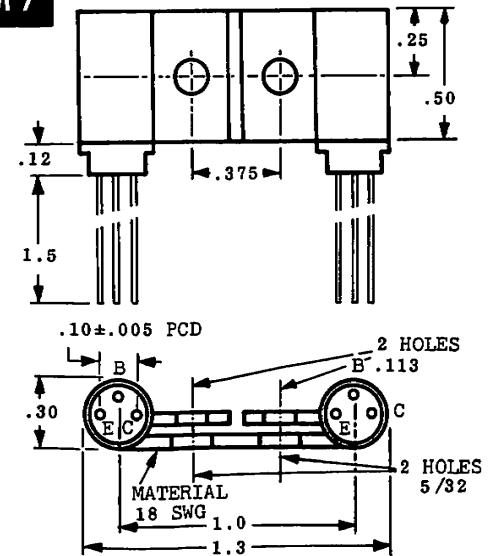
**MM 5**



**MM 6**



**MM 7**



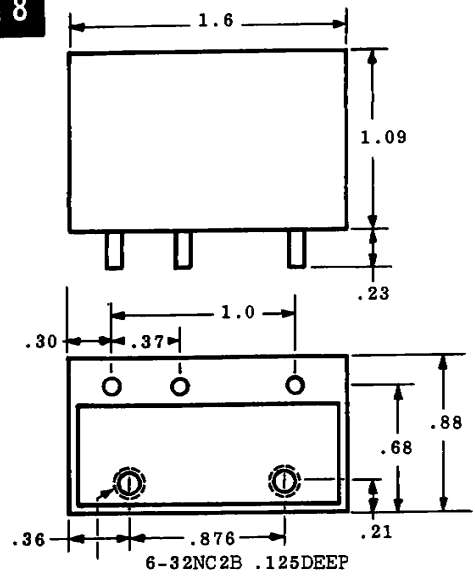
ALL DIMENSIONS IN INCHES

# 5. OUTLINE DRAWINGS

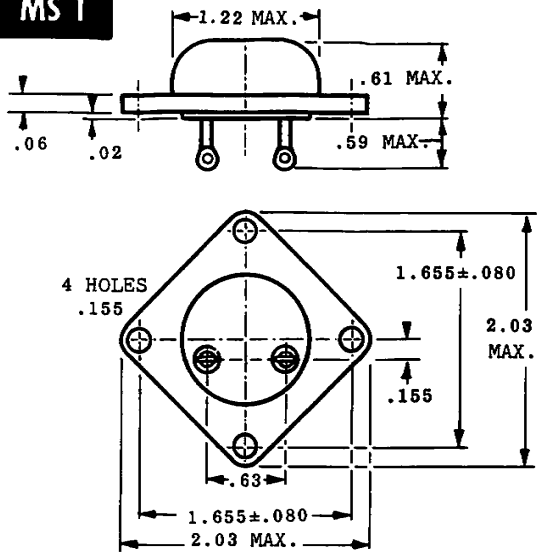
IN ORDER OF CASE NUMBER



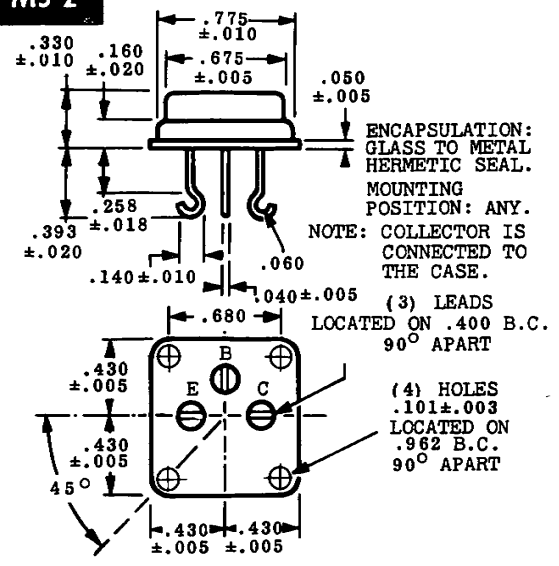
**MM 8**



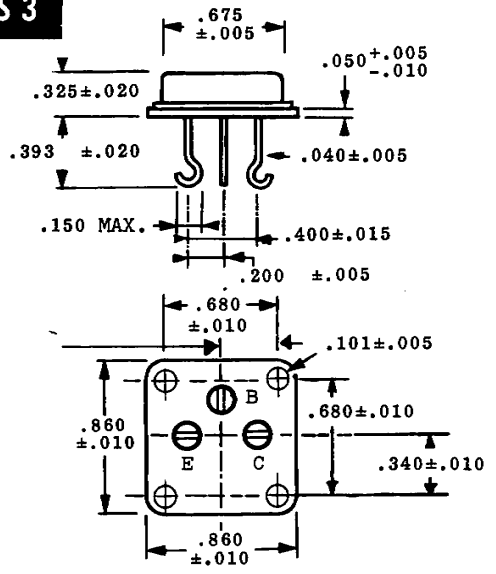
**MS 1**



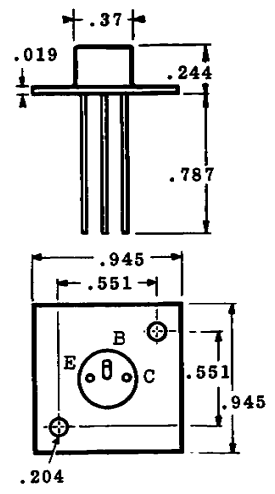
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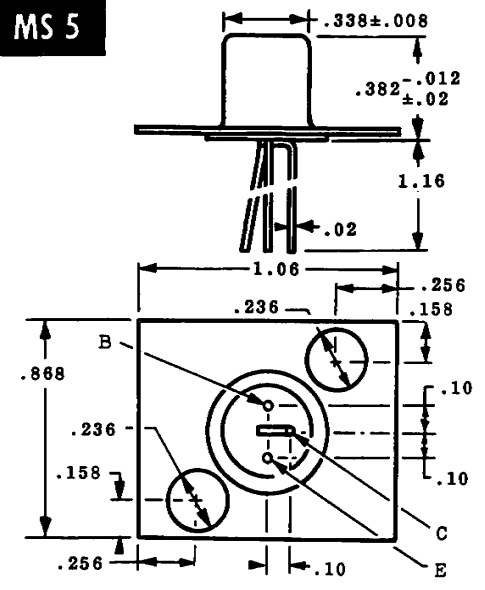
**MS 3**



**MS 4**



**MS 5**



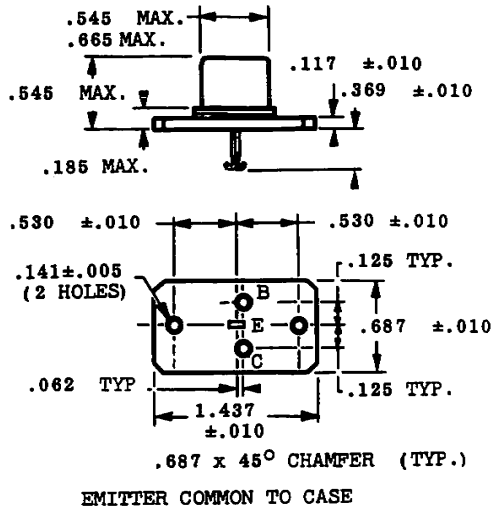
ALL DIMENSIONS IN INCHES

# 5. OUTLINE DRAWINGS

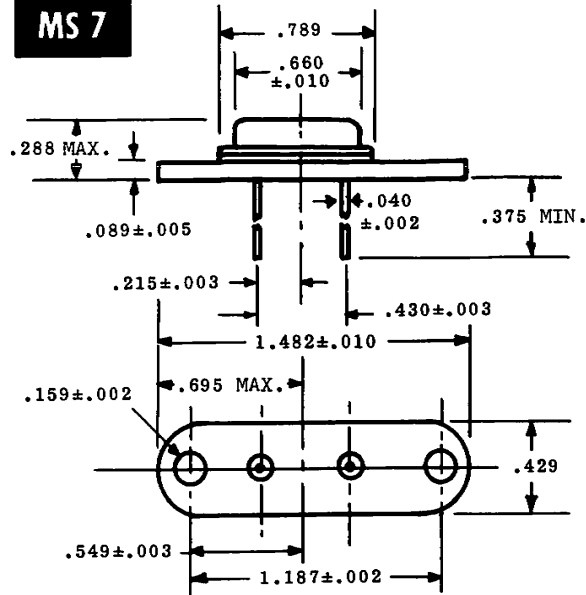
IN ORDER OF CASE NUMBER



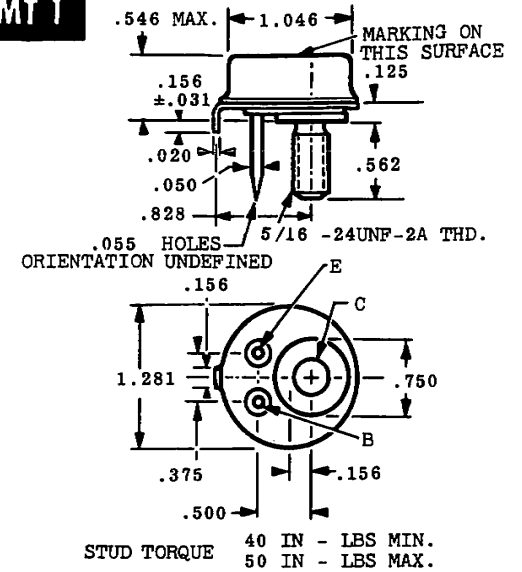
**MS 6**



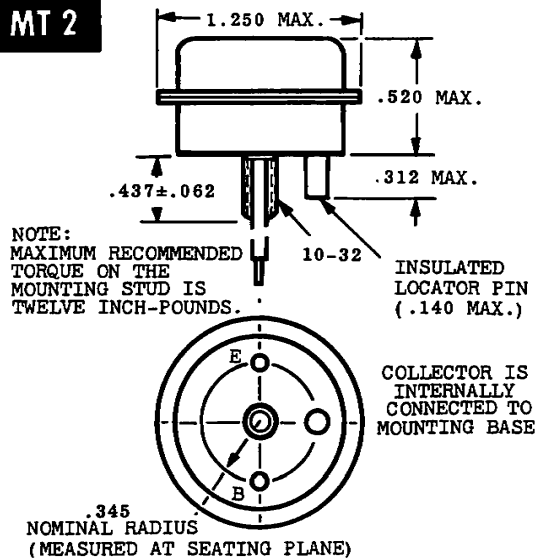
**MS 7**



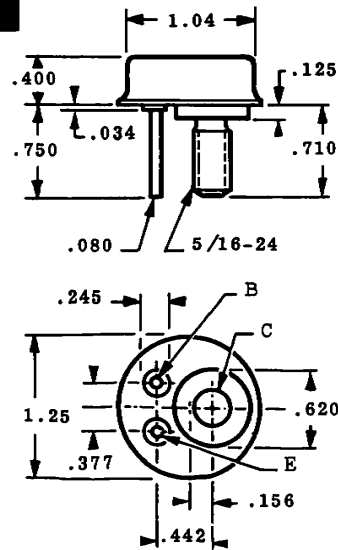
**MT 1**



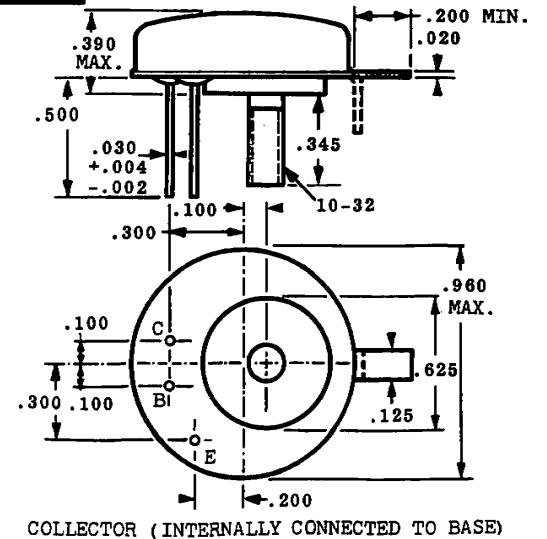
**MT 2**



**MT 3**



**MT 4**



ALL DIMENSIONS IN INCHES

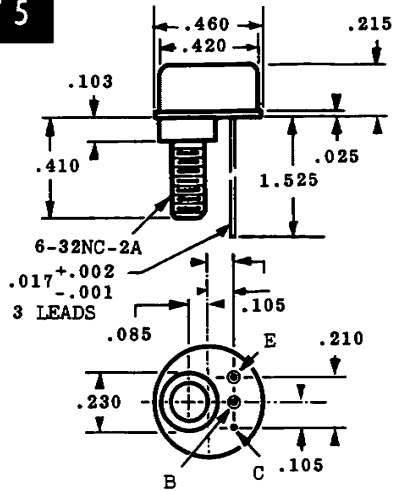


# 5. OUTLINE DRAWINGS

IN ORDER OF CASE NUMBER

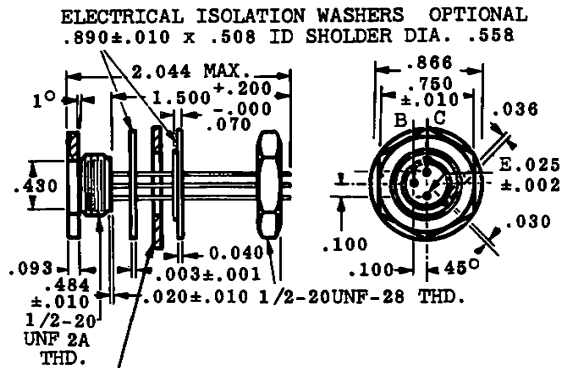


**MT 5**



COLLECTOR COMMON TO CASE  
DIMENSIONS ARE MAXIMUM  
UNLESS OTHERWISE STATED

**MT 6**



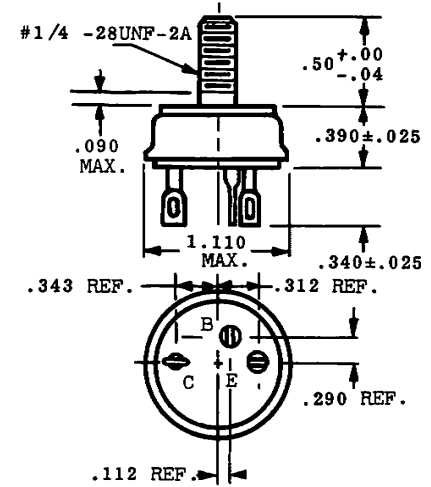
ELECTRICAL ISOLATION WASHERS OPTIONAL  
.890 ± .010 x .508 ID SHOULDER DIA. .558

WHEN ASSEMBLY IS MOUNTED DIRECT TO CHASSIS  
THE CHASSIS HOLE SHALL BE 1/2 DIAMETER.

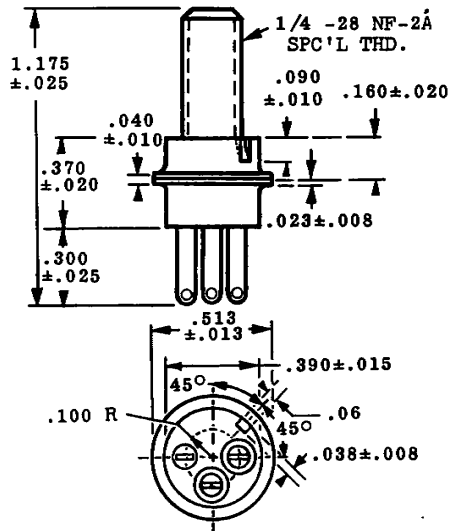
IF ISOLATION WASHERS ARE USED THE CHASSIS  
HOLE SHALL BE 9/16 DIAMETER.

UNLESS OTHERWISE NOTED  
ALL DIMENSIONS WILL BE ± .005

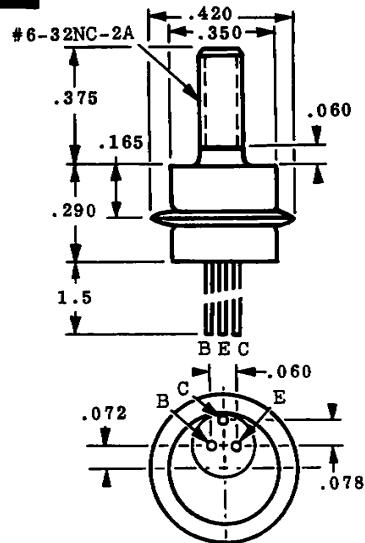
**MT 7**



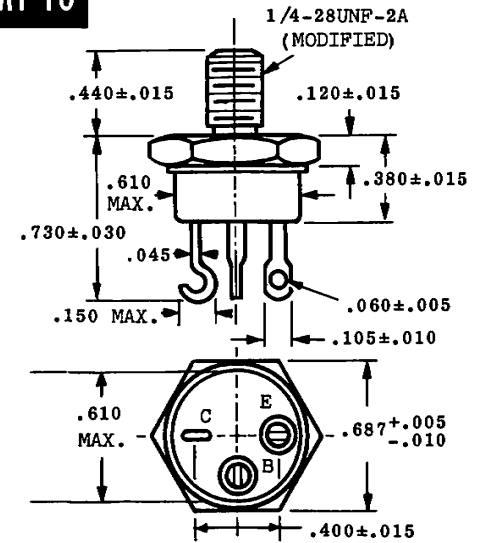
**MT 8**



**MT 9**

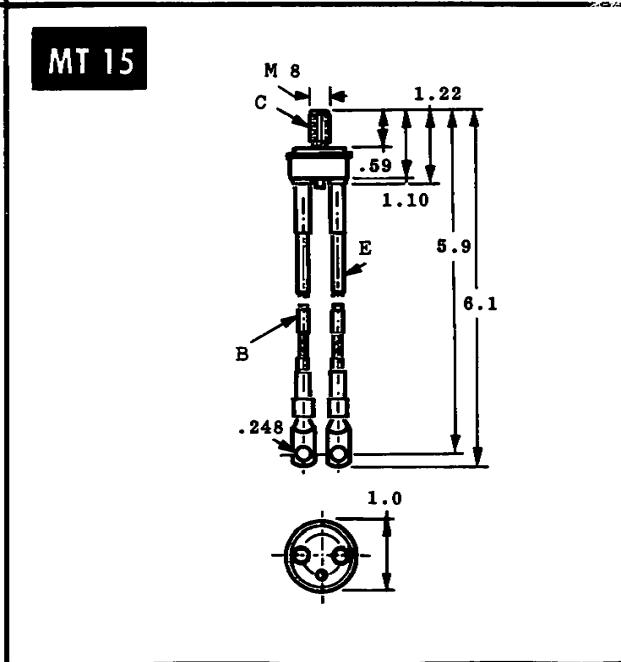
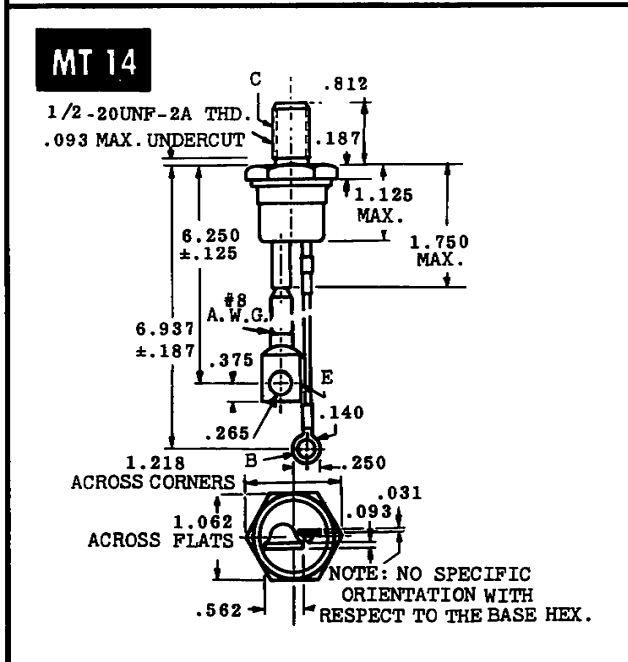
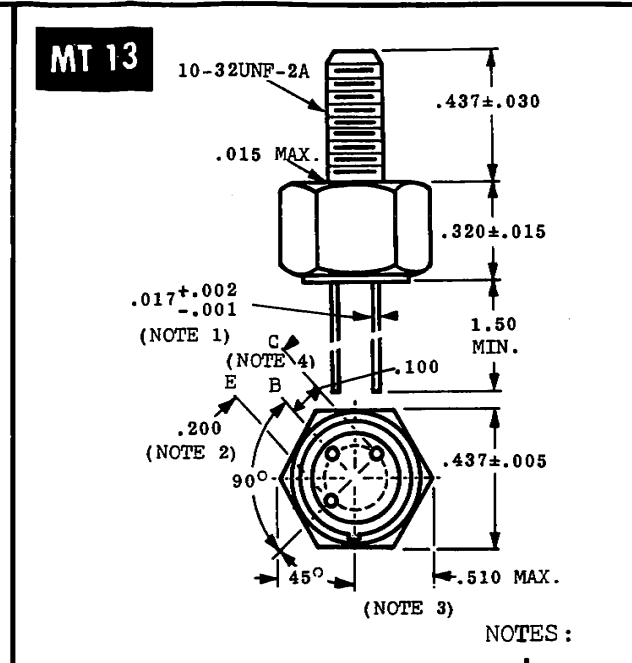
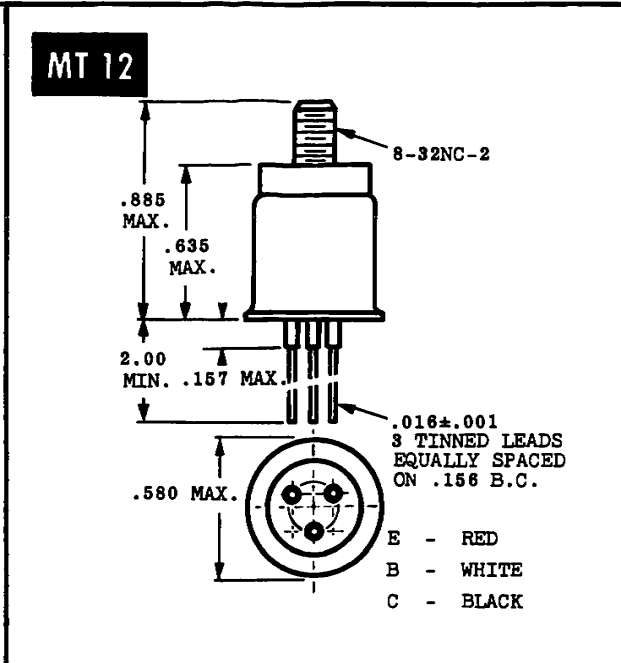
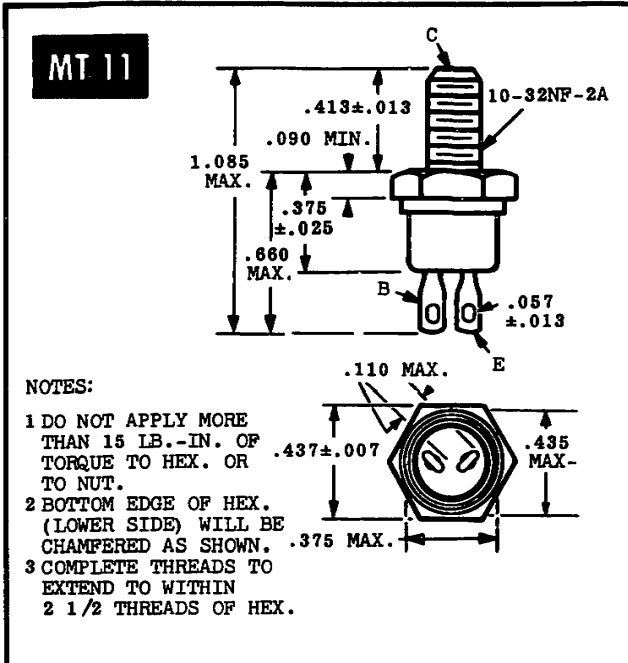


**MT 10**



ALL DIMENSIONS IN INCHES

## 5. OUTLINE DRAWINGS IN ORDER OF CASE NUMBER

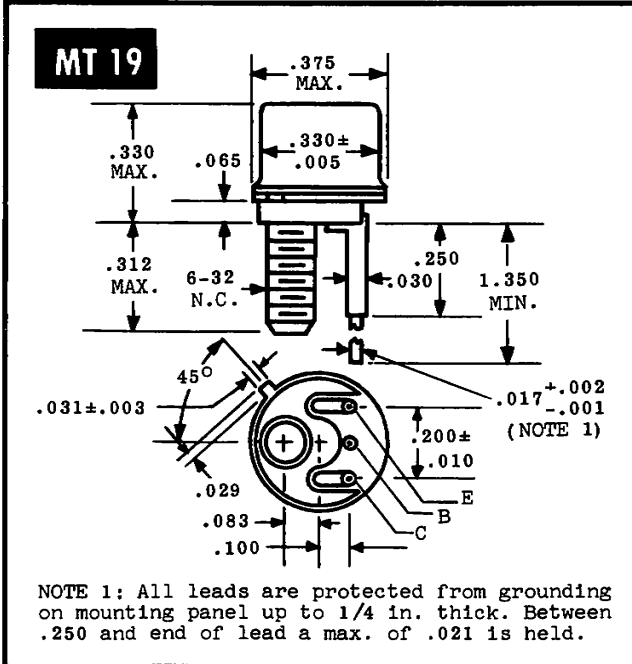
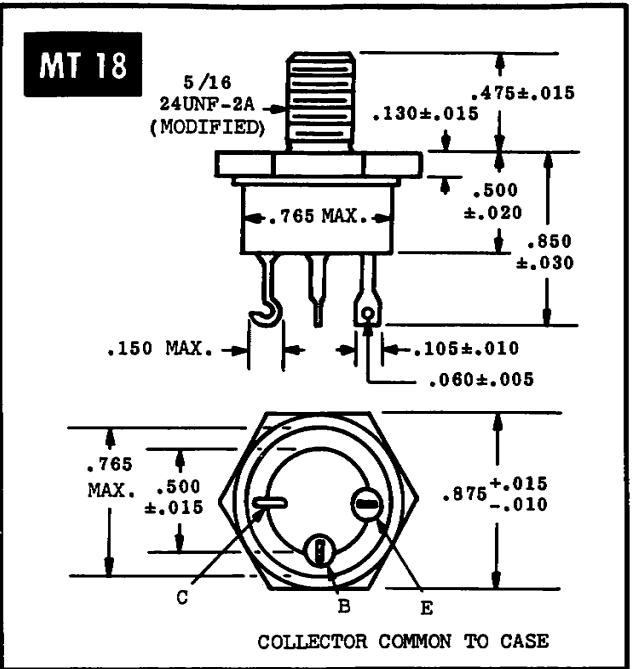
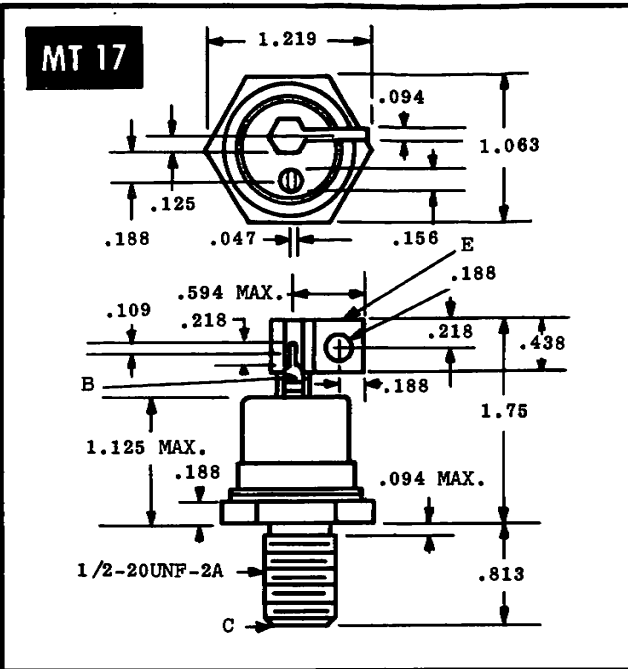
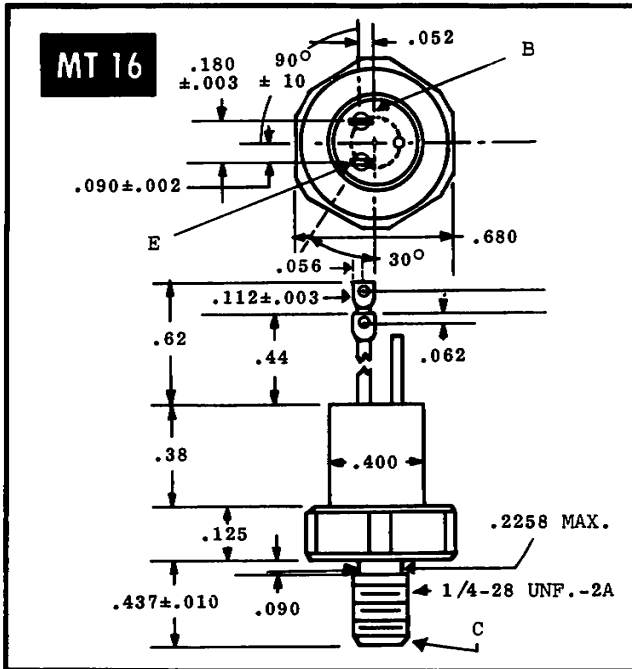


NOTES FOR MT-13:

- The specified lead diameter applies in a zone between .050 and .250 from the base seat. Between .250 and 1.5 a maximum of .021 diameter is held. Outside of these zones the lead diameter is not controlled.
- Leads having maximum diameter (.019) measured in gaging plane  $.054^{+.001}_{-.000}$  below base seat of the device shall be within .007 of their true location relative to the maximum diameter (.510) circumscribing the hex.
- The position of the leads in relation to the hex flats is not controlled.
- The collector is electrically connected to the case.

ALL DIMENSIONS IN INCHES

# 5. OUTLINE DRAWINGS IN ORDER OF CASE NUMBER



ALL DIMENSIONS IN INCHES

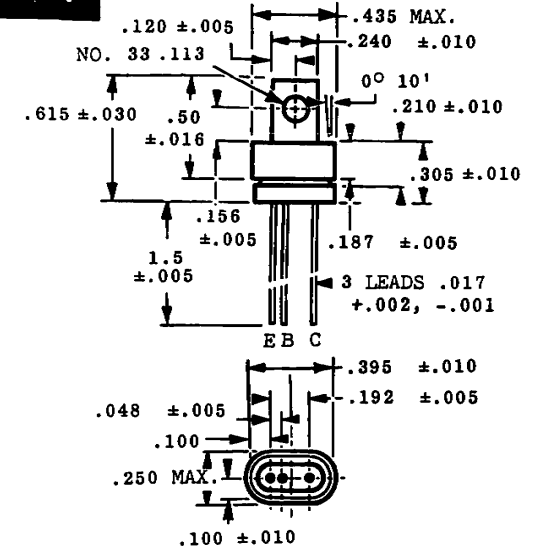
5

# 5. OUTLINE DRAWINGS

IN ORDER OF CASE NUMBER

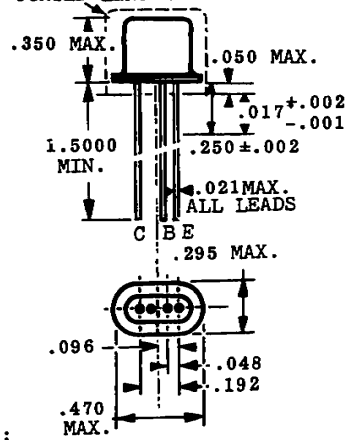


**OV 1**



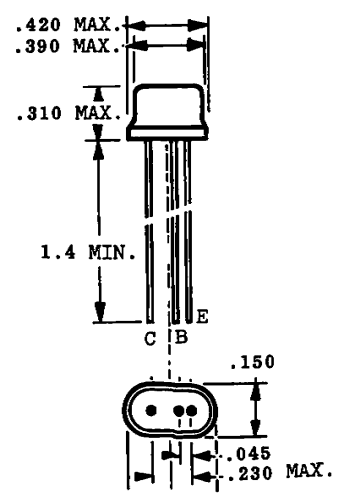
**OV 2**

AREA INDICATED COATED WITH GRAY LACQUER. THE DIAMETER OF THE LEADS IS NOT CONTROLLED OVER THE .050 COATED LENGTH.

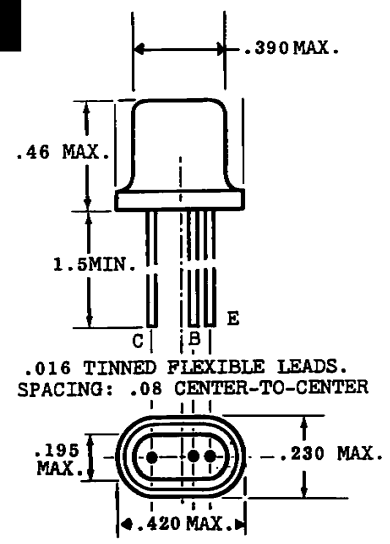


NOTES:  
LEAD ALIGNMENT MAY BE CHECKED WITH GAUGE NO. GE 7-3.

**OV 3**



**OV 4**

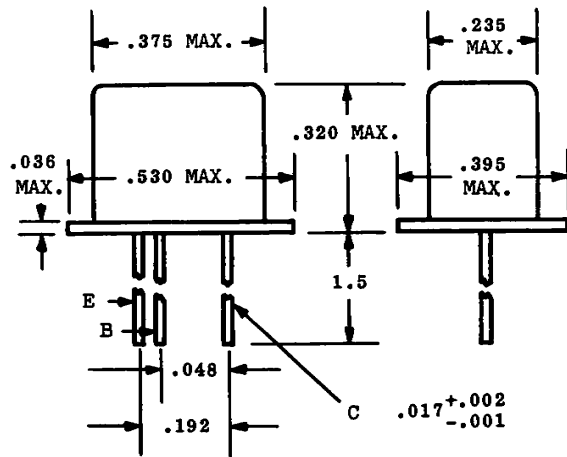


ALL DIMENSIONS IN INCHES

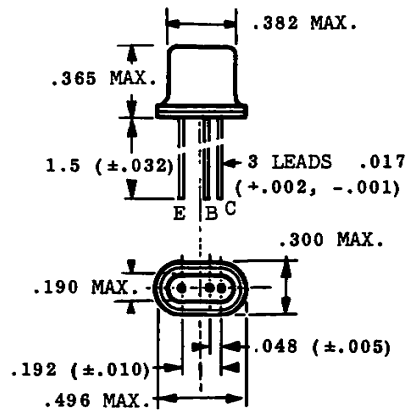
# 5. OUTLINE DRAWINGS IN ORDER OF CASE NUMBER



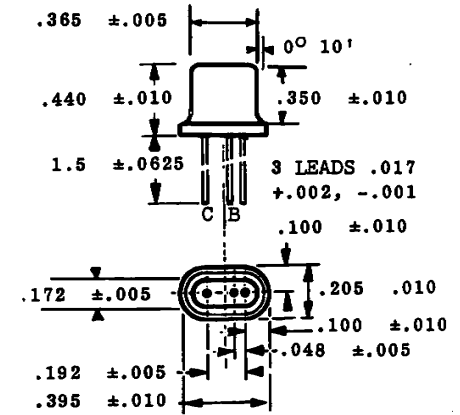
**OV 5**



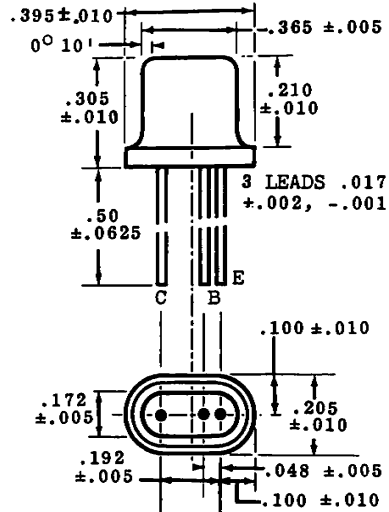
**OV 6**



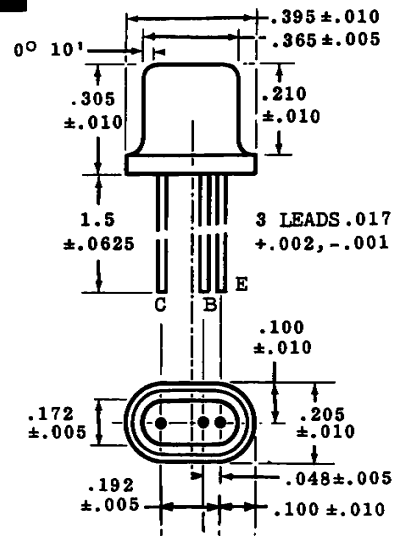
**OV 7**



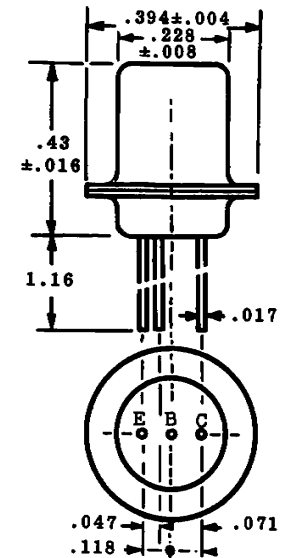
**OV 8**



**OV 9**



**RO 1**



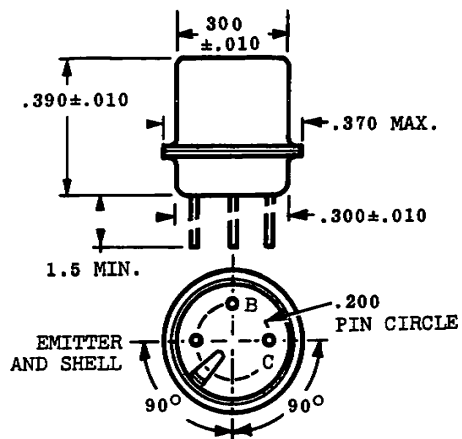
ALL DIMENSIONS IN INCHES

5

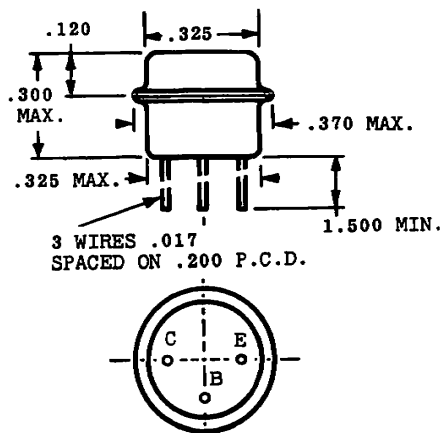
# 5. OUTLINE DRAWINGS IN ORDER OF CASE NUMBER



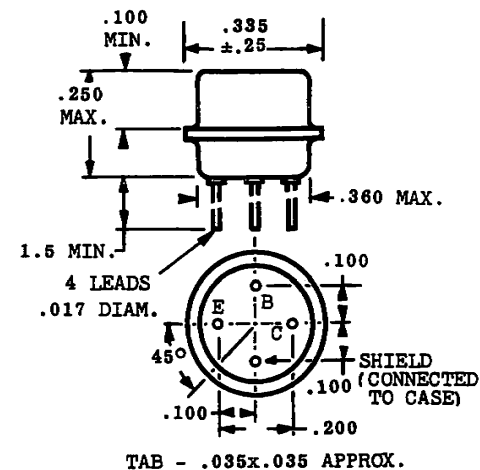
**RO 2**



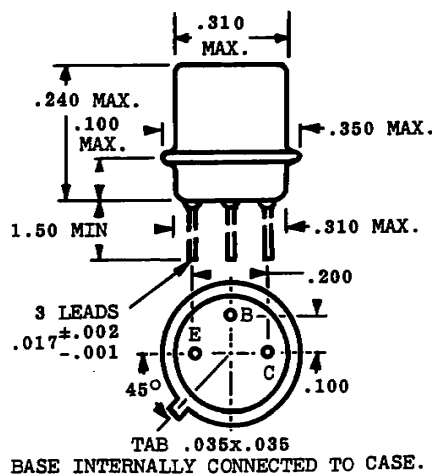
**RO 3**



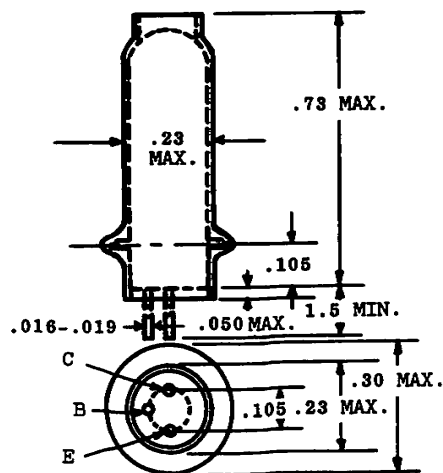
**RO 4**



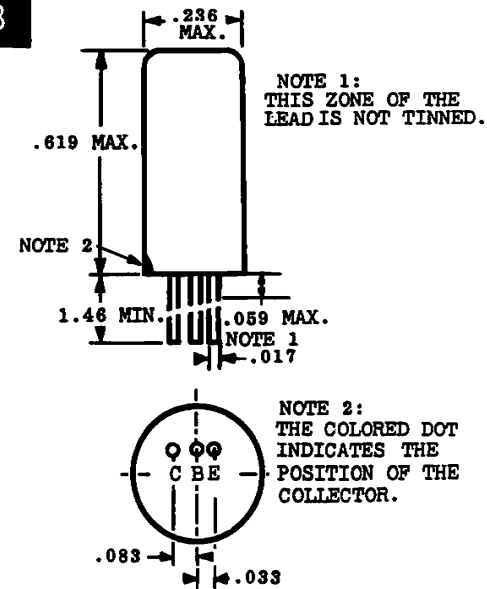
**RO 5**



**RO 7**



**RO 8**

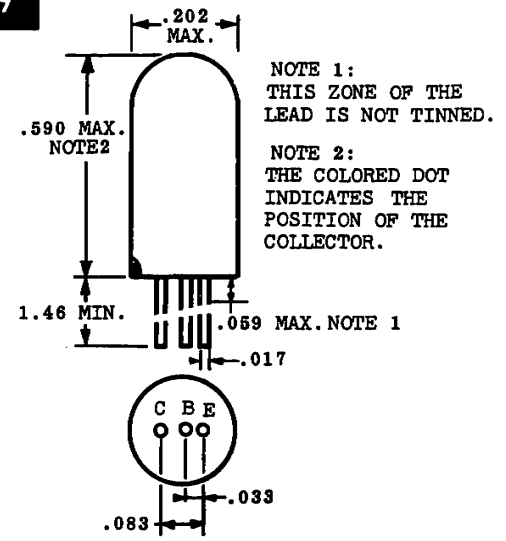


ALL DIMENSIONS IN INCHES

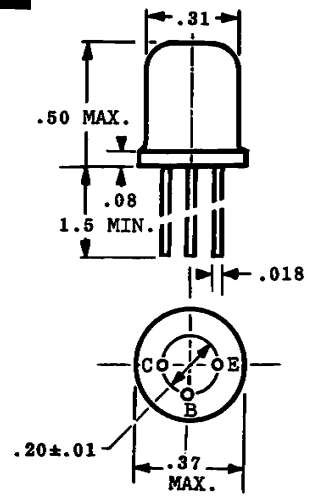
# 5. OUTLINE DRAWINGS IN ORDER OF CASE NUMBER



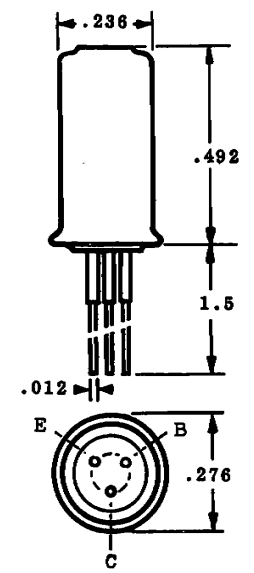
**RO 9**



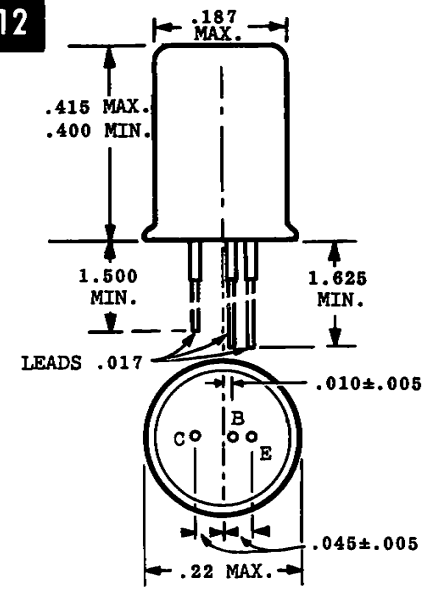
**RO 10**



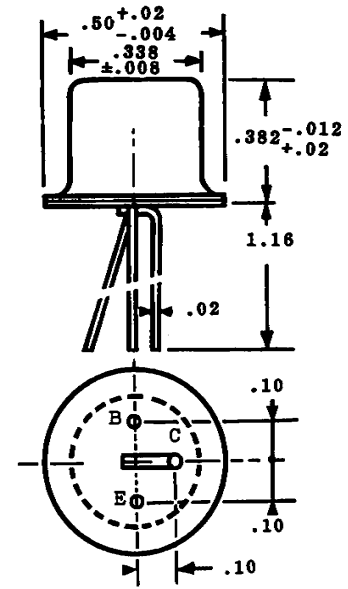
**RO 11**



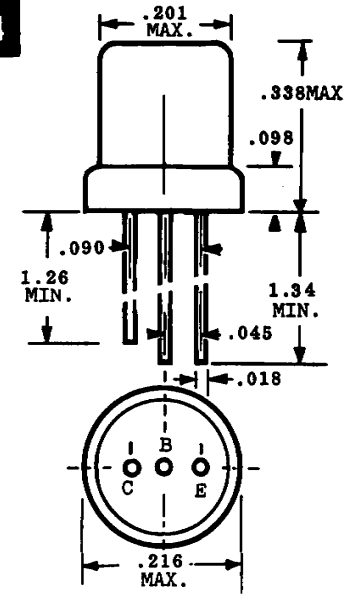
**RO 12**



**RO 13**



**RO 14**



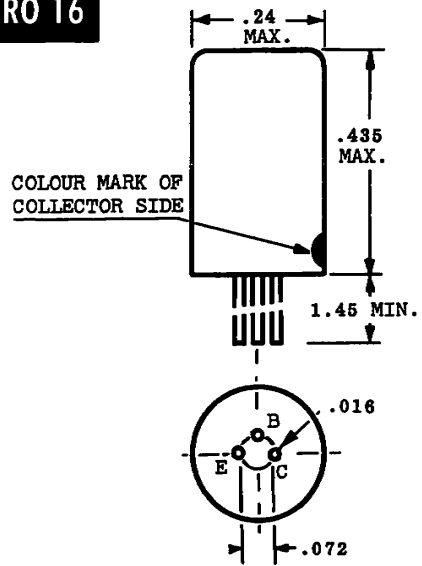
ALL DIMENSIONS IN INCHES

5

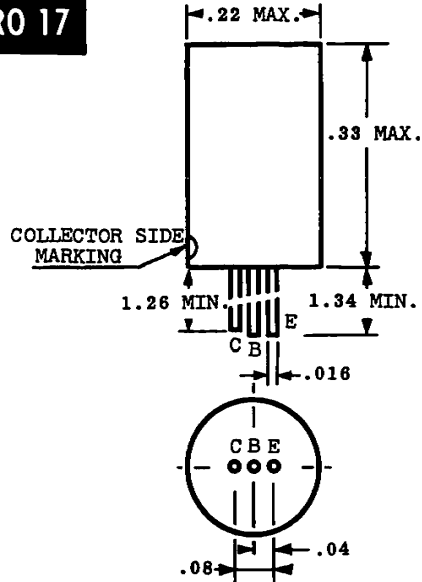
# 5. OUTLINE DRAWINGS IN ORDER OF CASE NUMBER



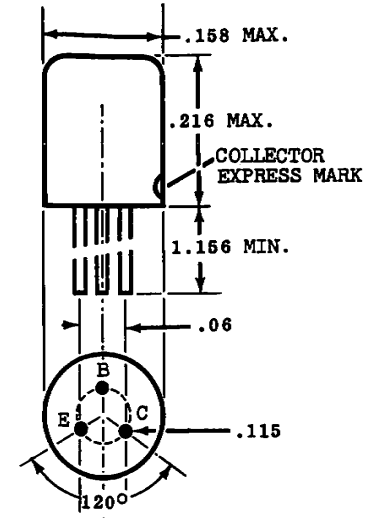
**RO 16**



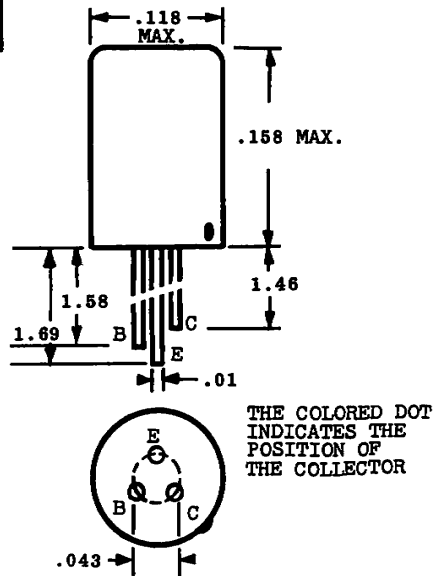
**RO 17**



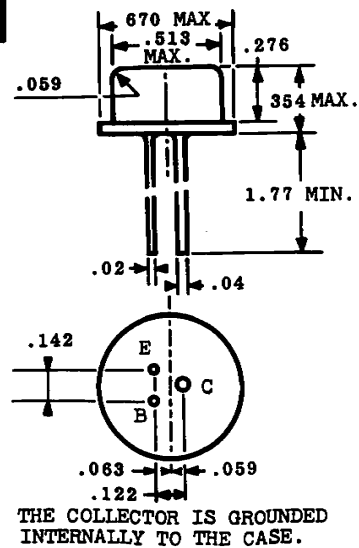
**RO 18**



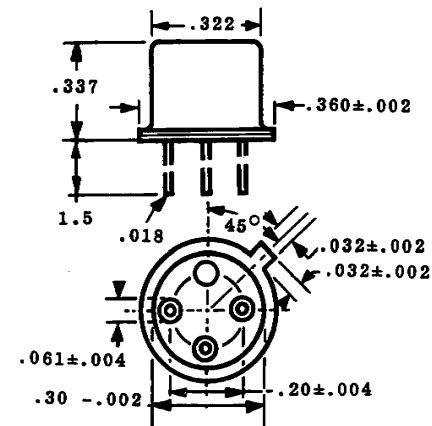
**RO 19**



**RO 20**



**RO 21**



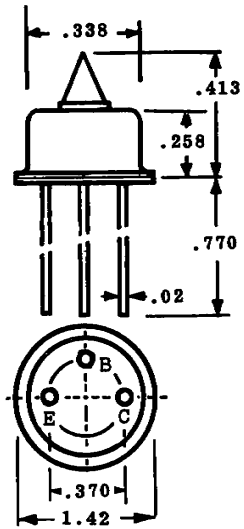
ALL DIMENSIONS IN INCHES



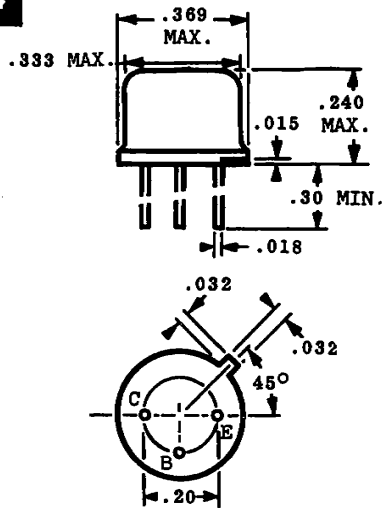
# 5. OUTLINE DRAWINGS IN ORDER OF CASE NUMBER



**RO 23**

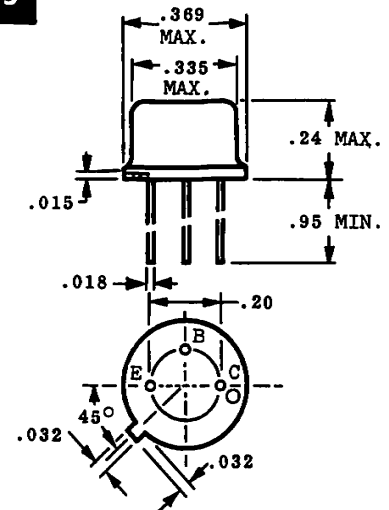


**RO 24**



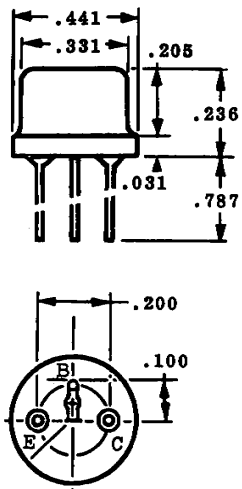
THE COLLECTOR IS GROUNDED INTERNALLY TO THE CASE.

**RO 25**

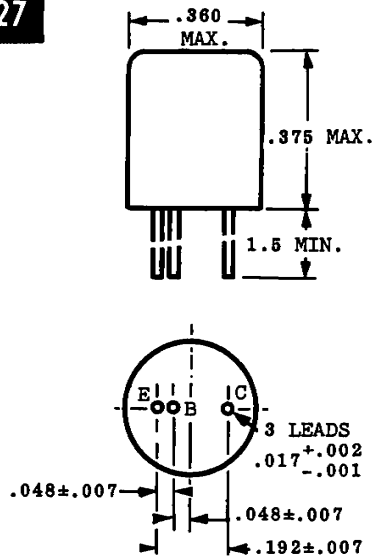


THE COLLECTOR IS GROUNDED TO THE CASE

**RO 26**

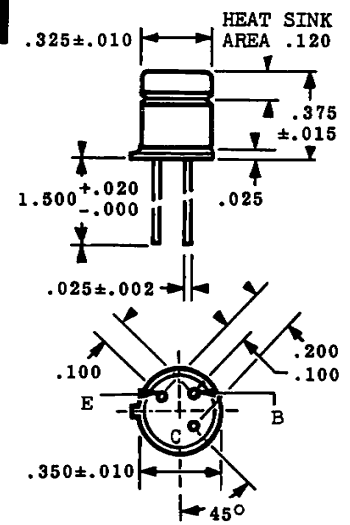


**RO 27**



3 LEADS

**RO 28**



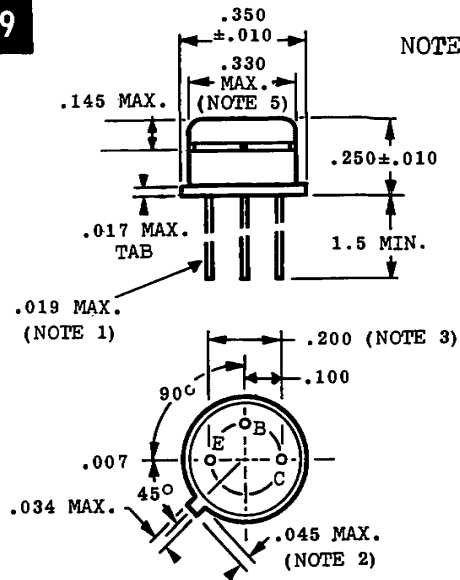
UNLESS OTHERWISE NOTED  
ALL DIMENSIONS WILL BE ±.005

5

## 5. OUTLINE DRAWINGS IN ORDER OF CASE NUMBER



**RO 29**

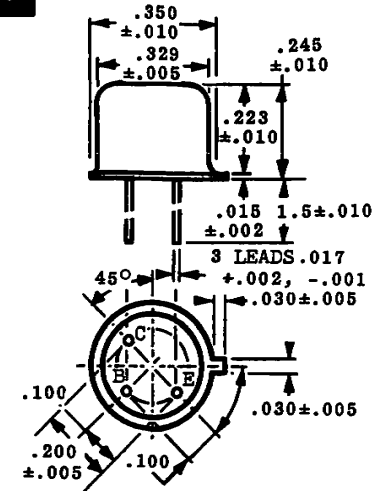


NOTES: →

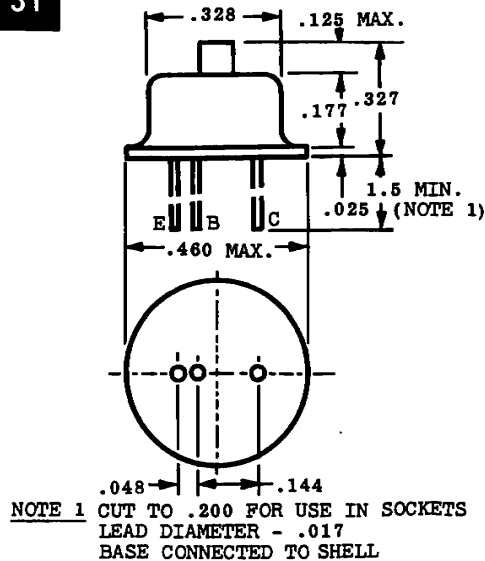
NOTES FOR RO-29:

1. The specified lead diameter applies in the zone between  $.050$  and  $.250$  from the seating plane. Between  $.250$  and  $1.5$  a maximum of  $.021$  diameter is held. Outside of these zones the lead diameter is not controlled.
2. Measured from max. diameter of the actual device.
3. Leads having maximum diameter ( $.019$ ) measured in gaging plane  $.054^{+.001}_{-.000}$  below the seating plane of the device shall be within  $.007$  of their true locations relative to a maximum-width tab.
4. The collector is electrically connected to the case.
5. The can diameter referenced is exclusive of crimping.

**RO 30**

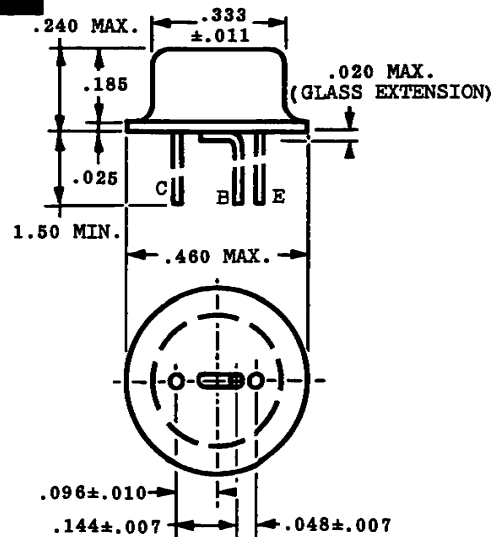


**RO 31**

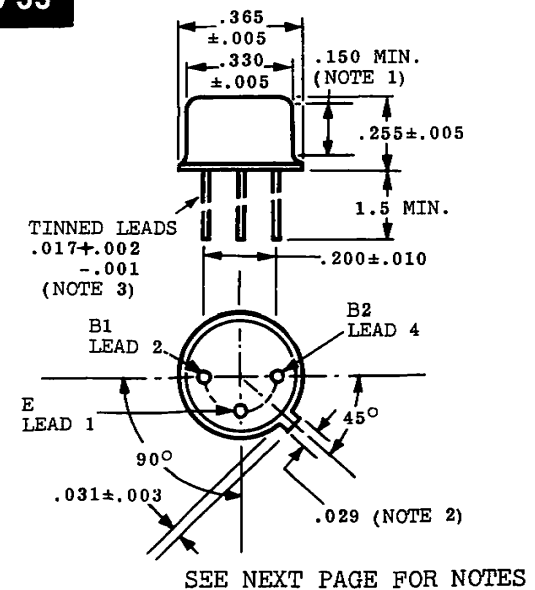


NOTE 1 CUT TO  $.200$  FOR USE IN SOCKETS  
LEAD DIAMETER -  $.017$   
BASE CONNECTED TO SHELL

**RO 32**



**RO 33**



SEE NEXT PAGE FOR NOTES

ALL DIMENSIONS IN INCHES

# 5. OUTLINE DRAWINGS

IN ORDER OF CASE NUMBER



### NOTES FOR RO-33:

#### NOTE 1:

This zone is controlled for automatic handling. The variation in actual diameter within this zone shall not exceed .010.

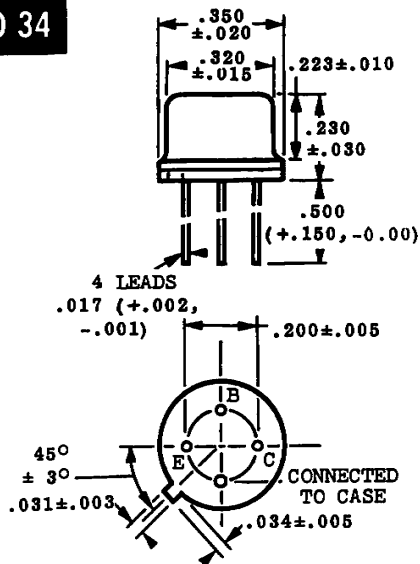
#### NOTE 2:

Measured from max. diameter of the actual device.

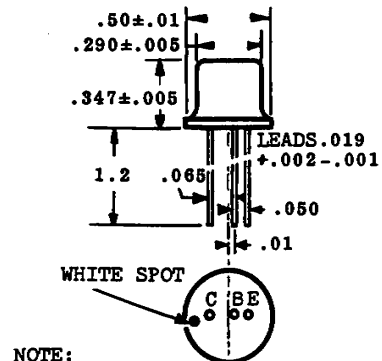
#### NOTE 3:

The specified lead diameter applies in the zone between .050 and .250 from the base seat. Between .250 and 1.5 max. of .021 diameter is held. Outside of these zones the lead diameter is not controlled.

### RO 34



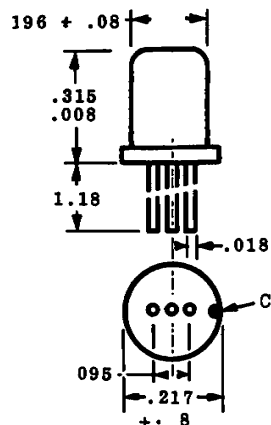
### RO 35



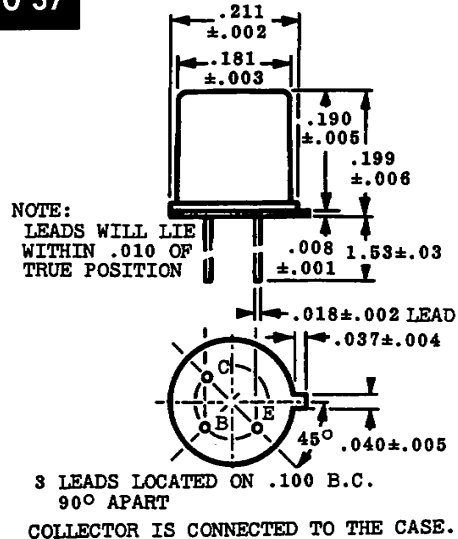
#### NOTE:

THE LEAD WIRES SHOULD NOT BE BENT CLOSE TO THE GLASS SEAL. SOLDER SHOULD NOT BE APPLIED CLOSER TO THE SEAL THAN .373 AND DURING THE SOLDERING OPERATION A HEAT SINK (e.g. PLIERS) SHOULD BE APPLIED BETWEEN SEAL AND JOINT.

### RO 36



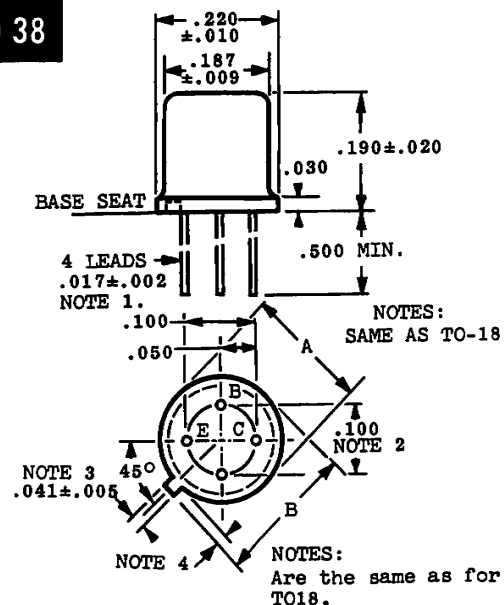
### RO 37



#### NOTE:

LEADS WILL LIE WITHIN .010 OF TRUE POSITION

### RO 38



#### NOTE 1:

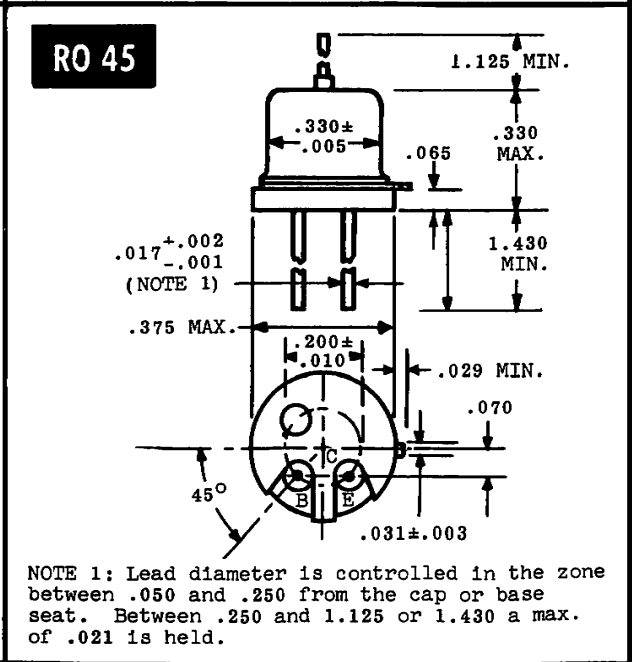
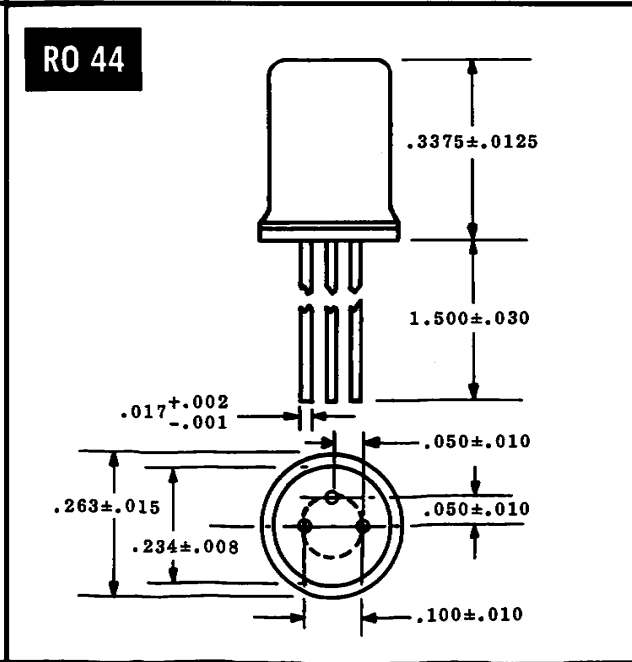
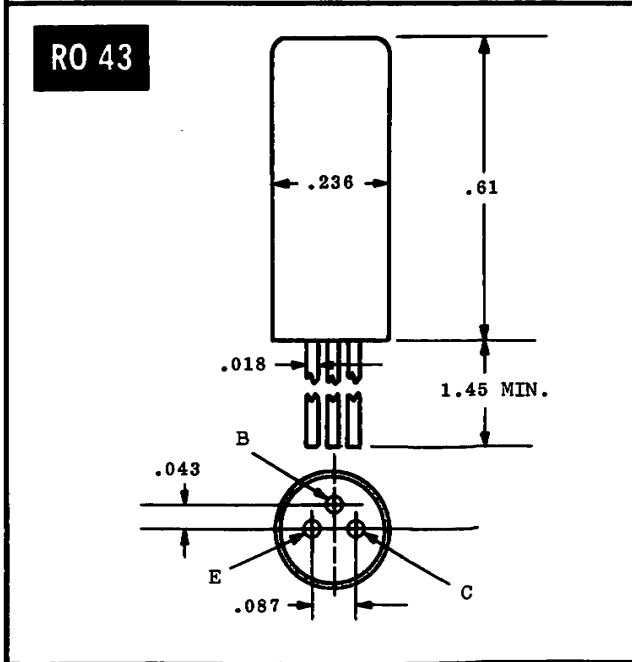
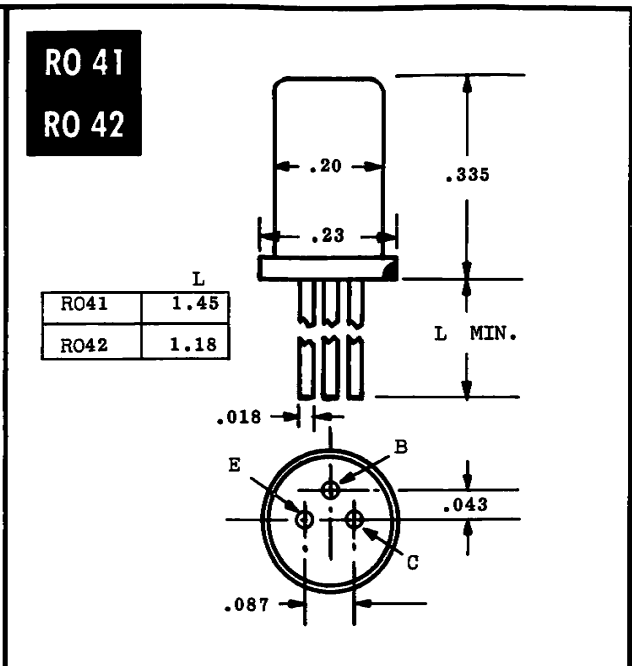
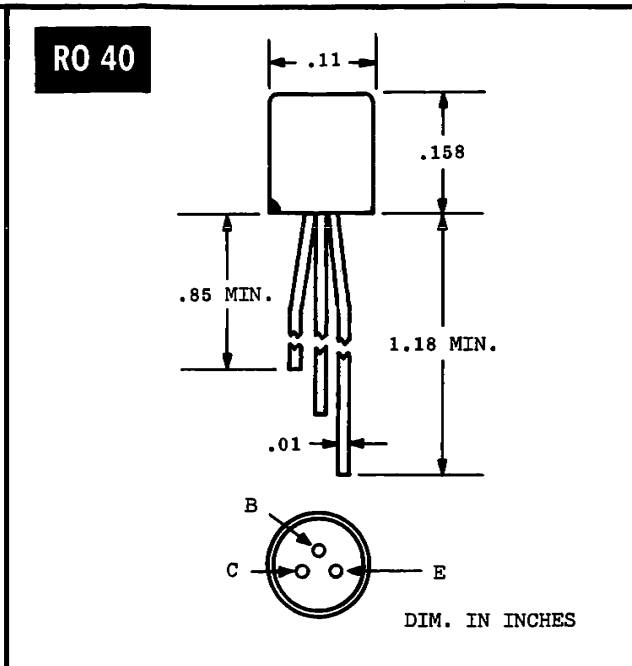
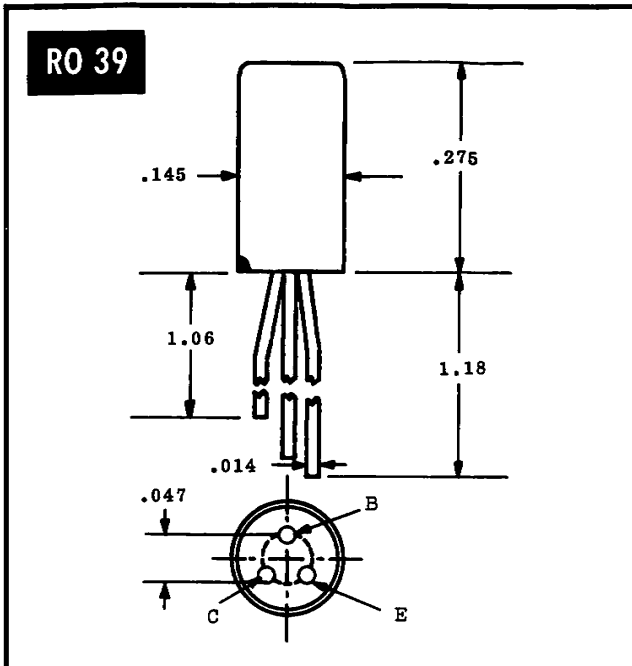
NOTES: SAME AS TO-18

NOTE 3: .041 ±.005

NOTES: Are the same as for TO18.

ALL DIMENSIONS IN INCHES

## 5. OUTLINE DRAWINGS IN ORDER OF CASE NUMBER

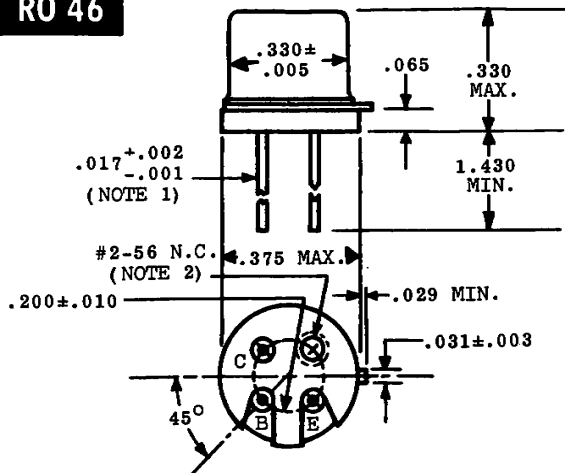


ALL DIMENSIONS IN INCHES

## 5. OUTLINE DRAWINGS IN ORDER OF CASE NUMBER



**RO 46**

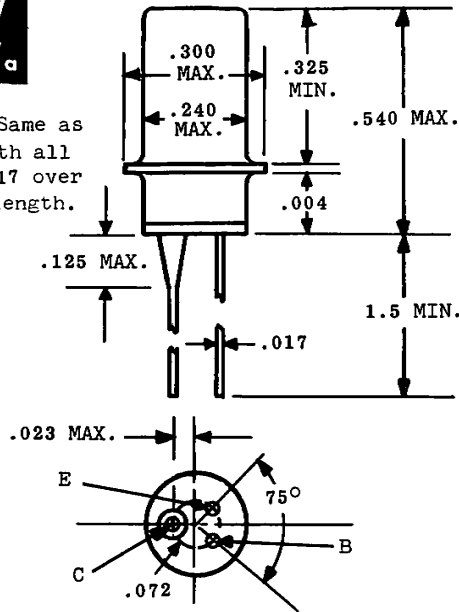


NOTE 1: Lead diameter is controlled in the zone between .050 and .250 from the base seat. Between .250 and end of lead a max. .021 is held.

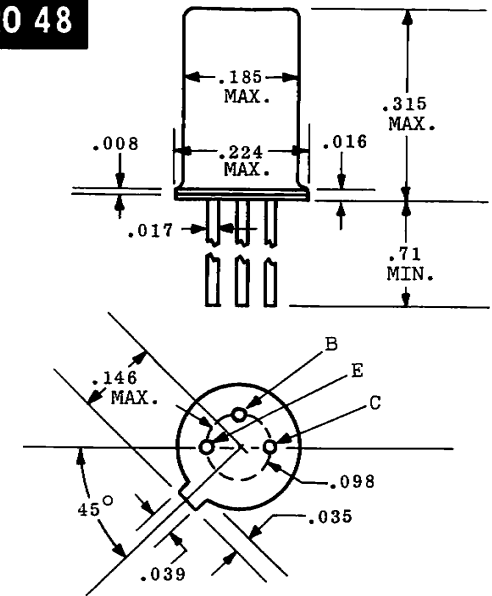
NOTE 2: Do not attempt to insert a #2-56 stud in excess of .045.

**RO 47  
RO 47a**

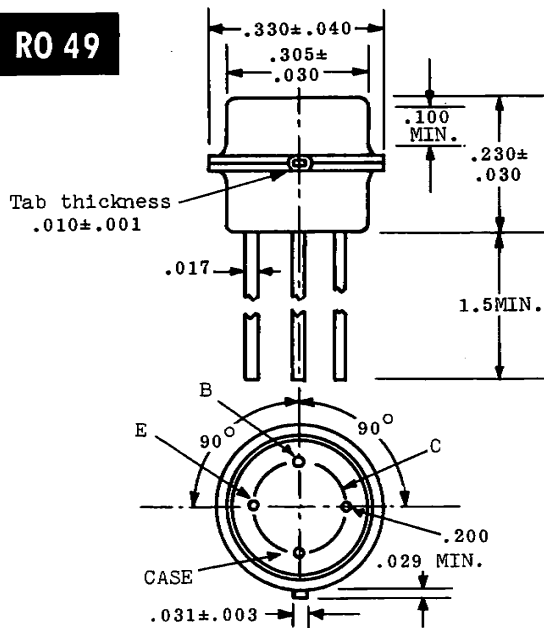
RO47a - Same as RO47 with all leads .017 over whole length.



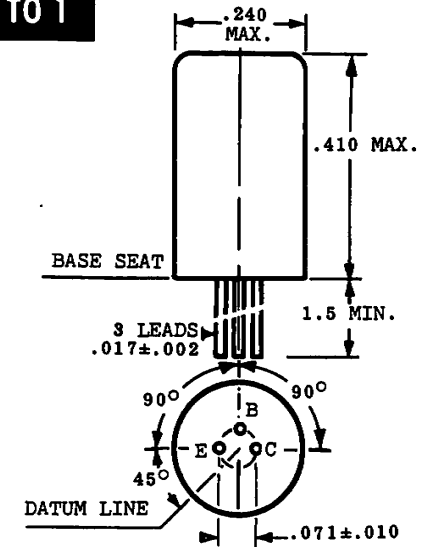
**RO 48**



**RO 49**



**TO 1**

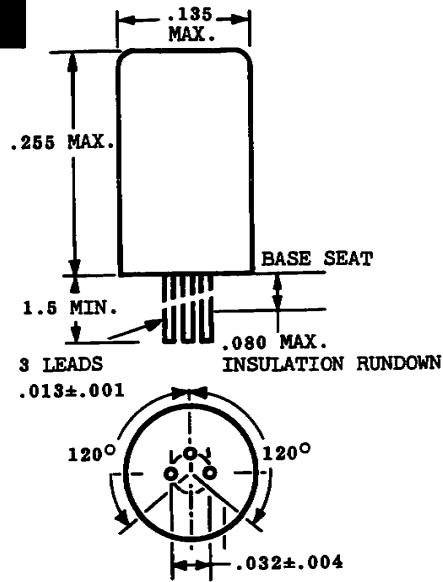


ALL DIMENSIONS IN INCHES

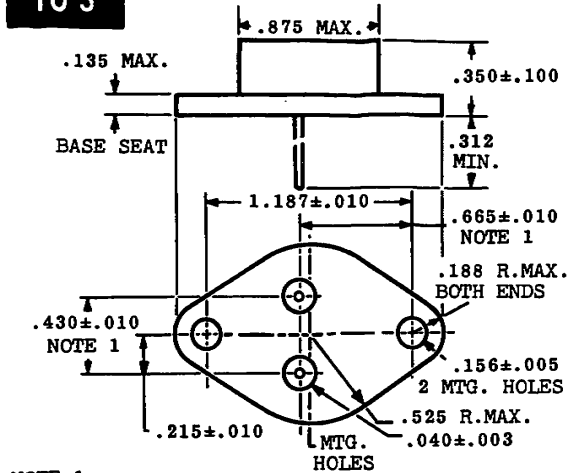
# 5. OUTLINE DRAWINGS IN ORDER OF CASE NUMBER



**T0 2**

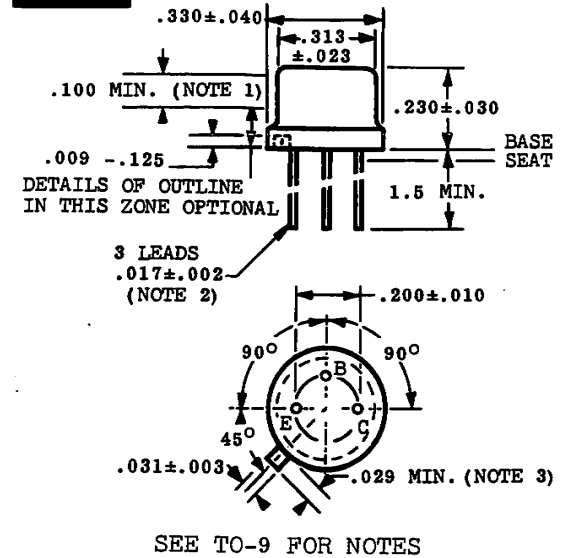


**T0 3**



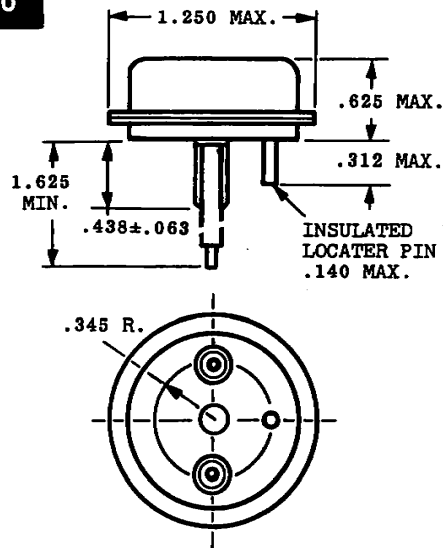
NOTE 1.  
THESE DIMENSIONS SHOULD BE MEASURED AT POINTS  
.050 TO .055 BELOW SEATING PLANE. WHEN GAGE IS  
NOT USED, MEASUREMENT WILL BE MADE AT BASE SEAT

**T0 5**

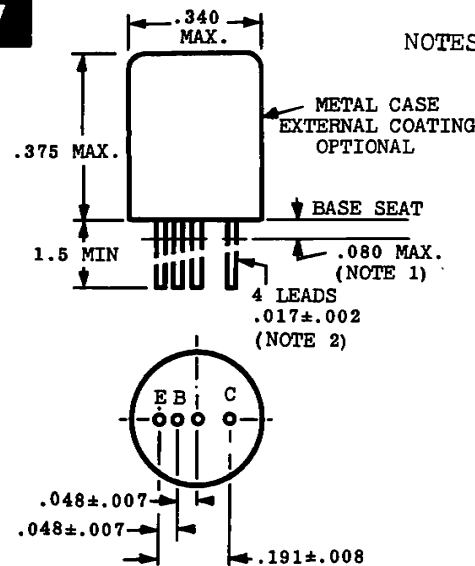


SEE TO-9 FOR NOTES

**T0 6**



**T0 7**



NOTES: →

NOTES FOR TO-7:

NOTE 1. EXTERNALLY COATED DEVICES SHALL NOT HAVE COATING ON THE LEADS BEYOND THIS ZONE.

NOTE 2. THE SPECIFIED LEAD DIAMETER APPLIES IN THE ZONE BETWEEN 0.050 AND 0.250 FROM THE BASE SEAT. BETWEEN 0.250 AND 1.50 A MAXIMUM OF 0.021 DIAMETER IS HELD. OUTSIDE OF THESE ZONES, THE LEAD DIAMETER IS NOT CONTROLLED.

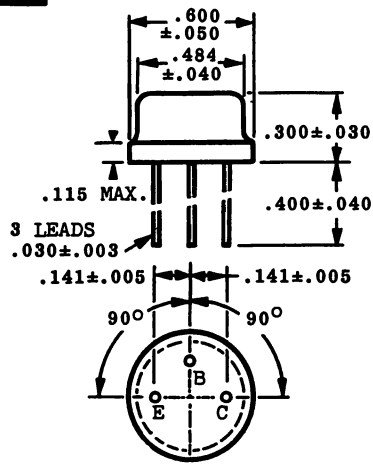
ALL DIMENSIONS IN INCHES

# 5. OUTLINE DRAWINGS

IN ORDER OF CASE NUMBER



**T0 8**



NOTES FOR T0-5,9,11,12,16,33,39

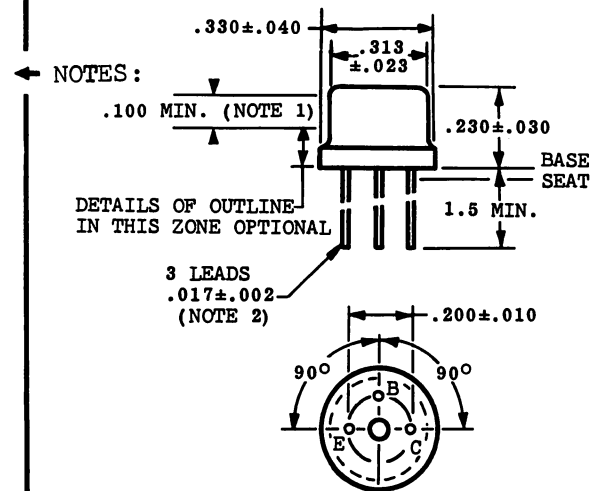
This device is for socketed, single-sided circuit-board, wire in and similar applications, where used in double-sided or eyeleted circuit-board or similar applications where solder bridging may occur. A dielectric washer or other standoff device may be necessary.

NOTE 1: This zone is controlled for automatic handling. The variation in actual dia. within this zone shall not exceed .010.

NOTE 2: The specified lead dia. applies in the zone between .050 and .250 from the base seat. Between .250 and 1.5 a max. of .021 dia. is held. Outside of these zones the lead dia. is not controlled.

NOTE 3: Measured from max. dia. of the actual device.

**T0 9**



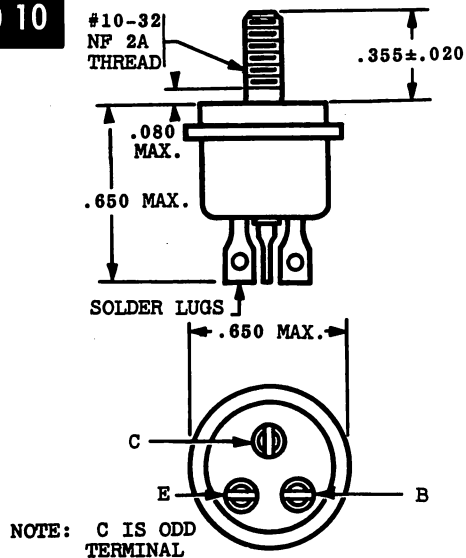
NOTES:

.100 MIN. (NOTE 1)

DETAILS OF OUTLINE IN THIS ZONE OPTIONAL

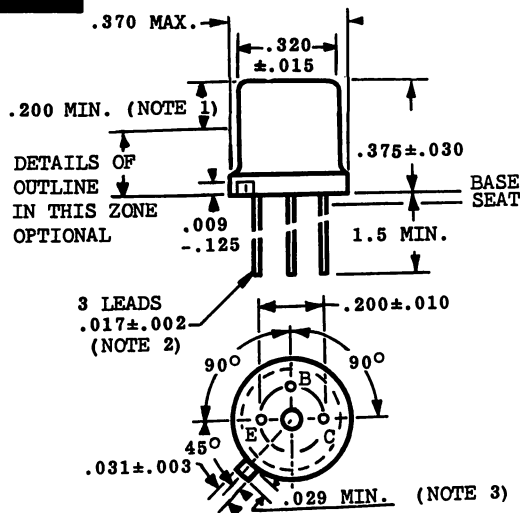
3 LEADS  
.017 ±.002  
(NOTE 2)

**T0 10**



NOTE: C IS ODD TERMINAL

**T0 11**



NOTES:

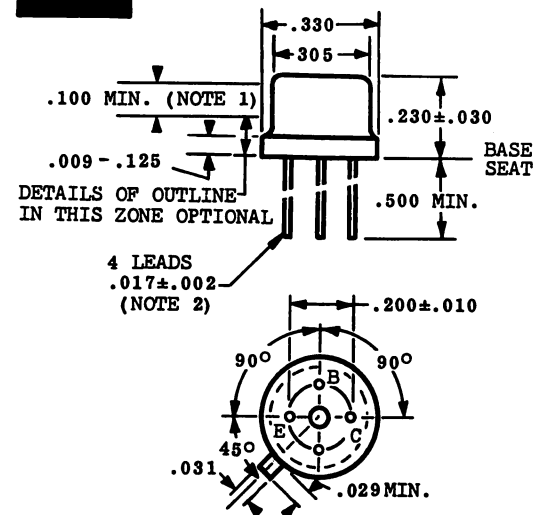
.200 MIN. (NOTE 1)  
DETAILS OF OUTLINE IN THIS ZONE OPTIONAL

3 LEADS  
.017 ±.002  
(NOTE 2)

.031 ±.003

.029 MIN. (NOTE 3)

**T0 12**

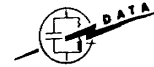


4 LEADS  
.017 ±.002  
(NOTE 2)

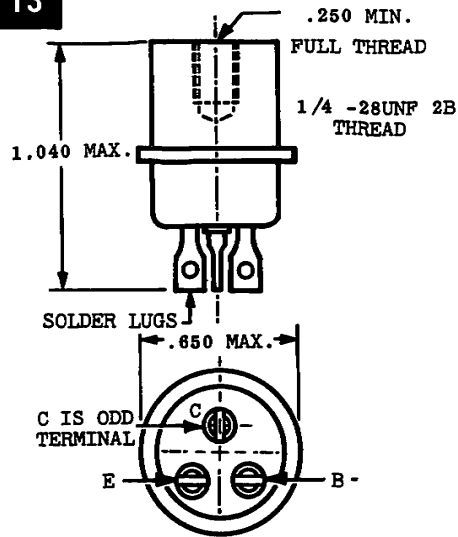
SEE TO-9 FOR NOTES

ALL DIMENSIONS IN INCHES

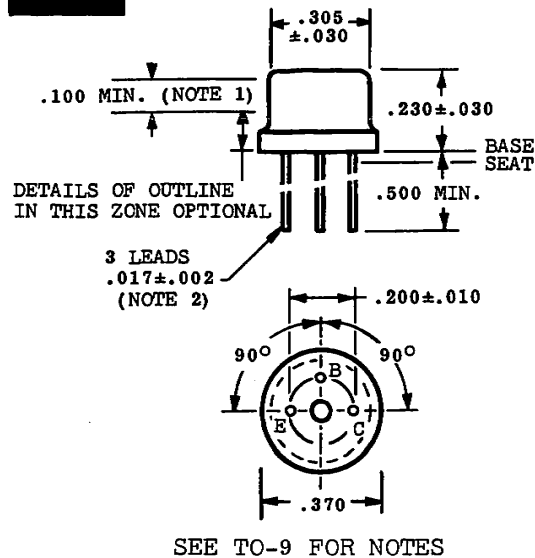
## 5. OUTLINE DRAWINGS IN ORDER OF CASE NUMBER



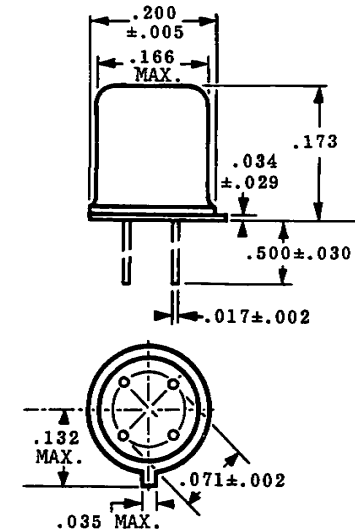
**TO 13**



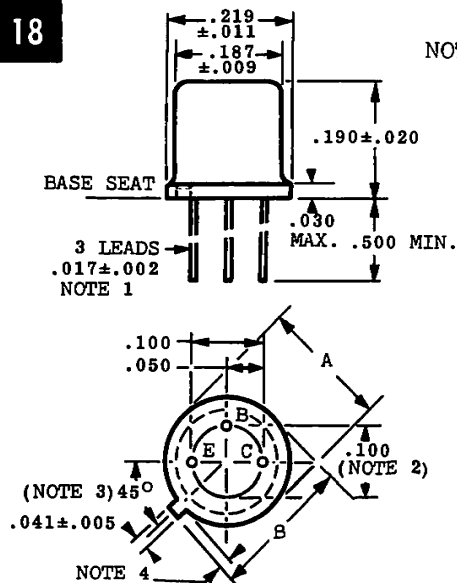
**TO 16**



**TO 17**



**TO 18**

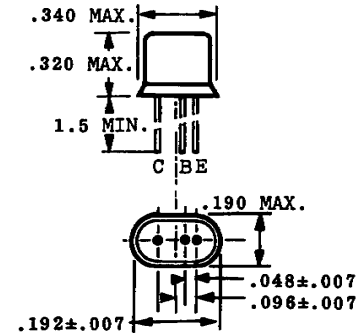


NOTES: →

NOTES FOR TO18 and RO38

1. The specified lead diameter applies to the zone between .050 and .250 from the base seat. Between .250 and end of lead a maximum of .021 is held. Outside of these zones the lead diameter is not controlled.
2. Maximum diameter leads at a gaging plane .054 - .001 - .000 below base seat to be within .007 of their true location relative to max. width tab and to the maximum .230 diameter measured with a suitable gage. When gage is not used, measurement will be made at base seat.
3. Index tab for visual orientation only.
4. Tab length to be .028 minimum - .048 maximum, and will be determined by subtracting diameter A from dimension B.

**TO 22**



ALL DIMENSIONS IN INCHES

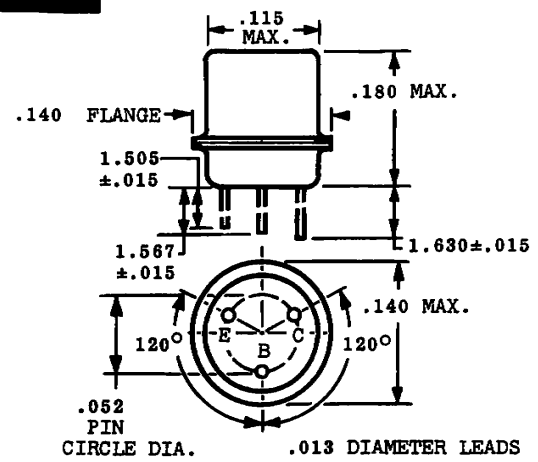


# 5. OUTLINE DRAWINGS

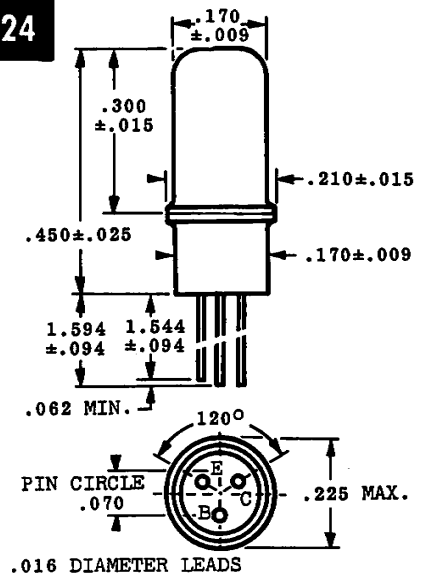
IN ORDER OF CASE NUMBER



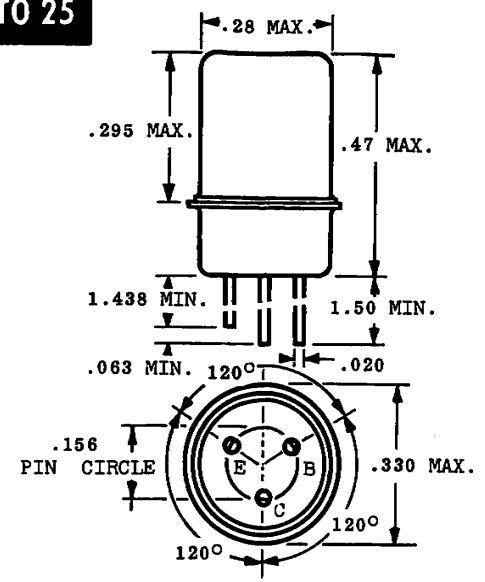
**TO 23**



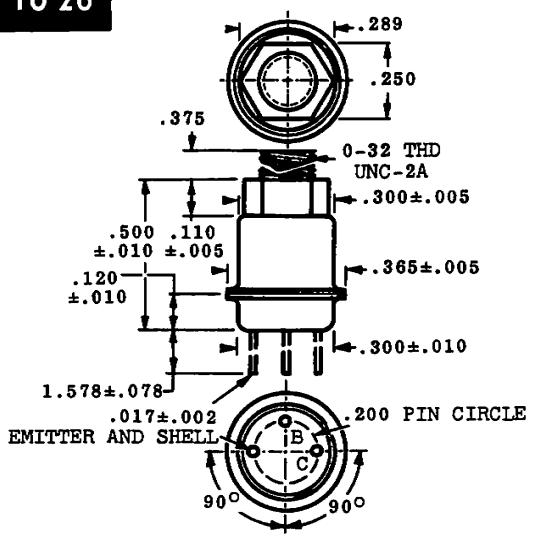
**TO 24**



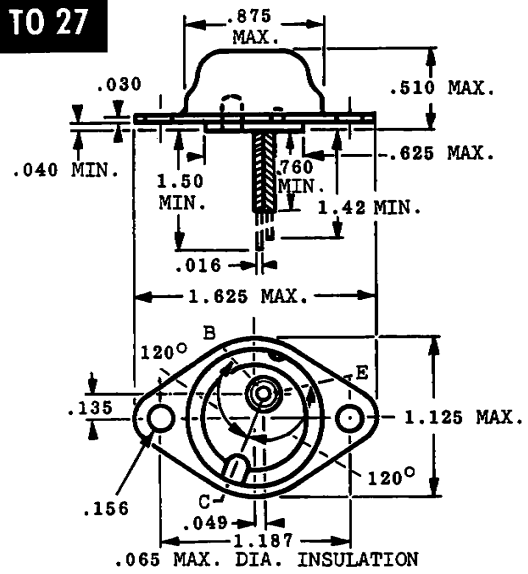
**TO 25**



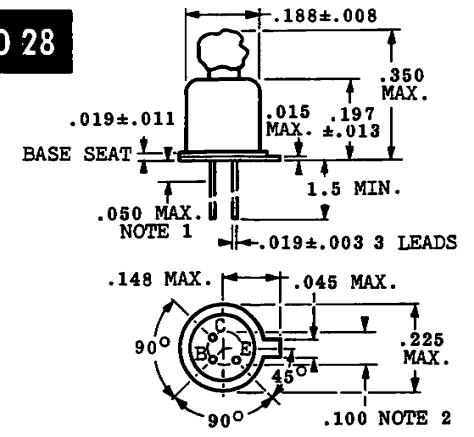
**TO 26**



**TO 27**



**TO 28**



- NOTES:
1. THE LEAD DIAMETER SHALL BE UNRESTRICTED FOR A MAXIMUM OF .050 FROM BASE SEAT.
  2. LEADS SHALL BE LOCATED ON TRUE CENTERS WITHIN .010 WITH RELATION TO THE .225 MAX. DIA. AT MAXIMUM MATERIAL CONDITION MEASURED .050 BELOW THE BASE SEAT.

ALL DIMENSIONS IN INCHES

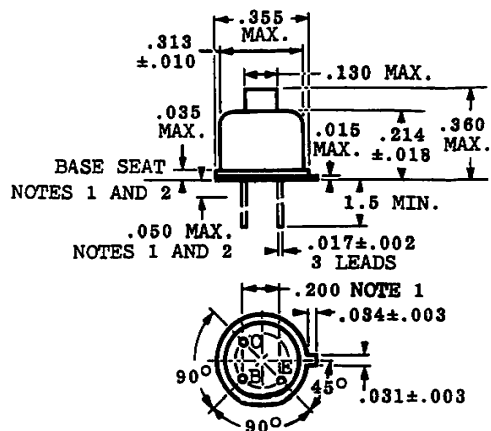
# 5. OUTLINE DRAWINGS

IN ORDER OF CASE NUMBER



**TO 29**

NOTES: →

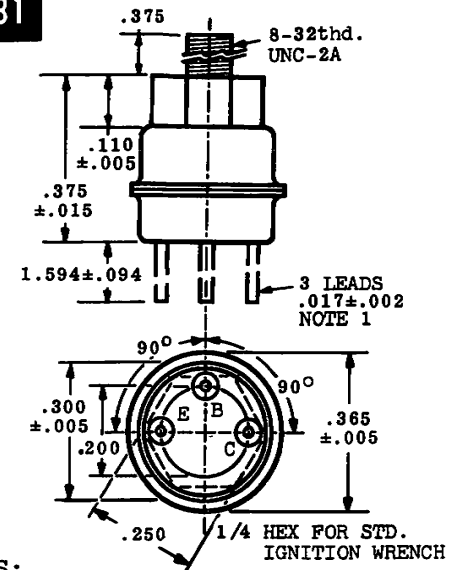


NOTES FOR TO-29:

**NOTE 1.** MAX.DIA. SHALL BE WITHIN .010 OF THEIR TRUE CENTERS WITH RESPECT TO THE .355 DIA. MEASURED AT POINTS .050 MAX. BELOW THE BASE SEAT.

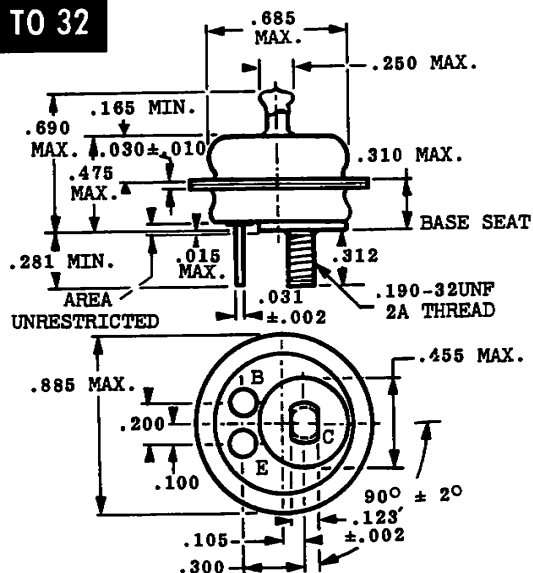
**NOTE 2.** THE SPECIFIED LEAD DIAMETER APPLIES IN THE ZONE BETWEEN .050 and .250 FROM THE BASE SEAT, BETWEEN .250 AND 1.5 THE DIAMETER SHALL NOT EXCEED .021; OUTSIDE OF THESE ZONES THE DIAMETER IS NOT CONTROLLED.

**TO 31**

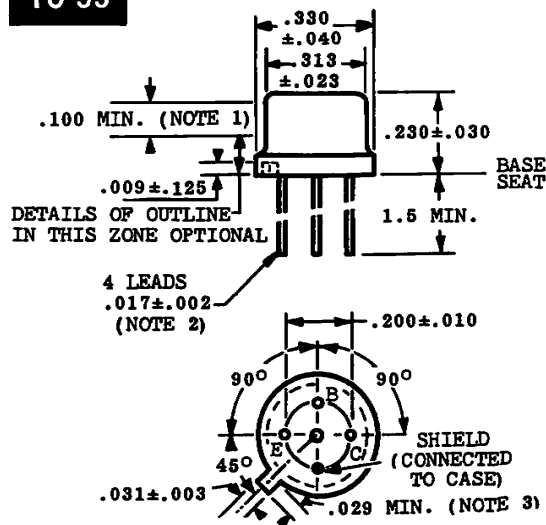


NOTES:

**TO 32**



**TO 33**



SEE TO-9 FOR NOTES

NOTES FOR TO-31:

NOTE 1:

THE SPECIFIED LEAD DIA. APPLIES IN THE ZONE BETWEEN .050 AND .250 FROM THE BASE SEAT, BETWEEN .250 AND 1.50 A MAX. OF .021 DIA. IS HELD, OUTSIDE OF THESE ZONES, THE LEAD DIA. IS NOT CONTROLLED.

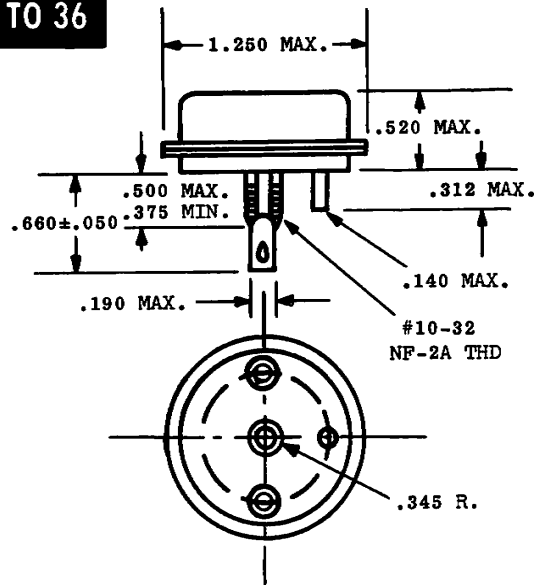
ALL DIMENSIONS IN INCHES

# 5. OUTLINE DRAWINGS

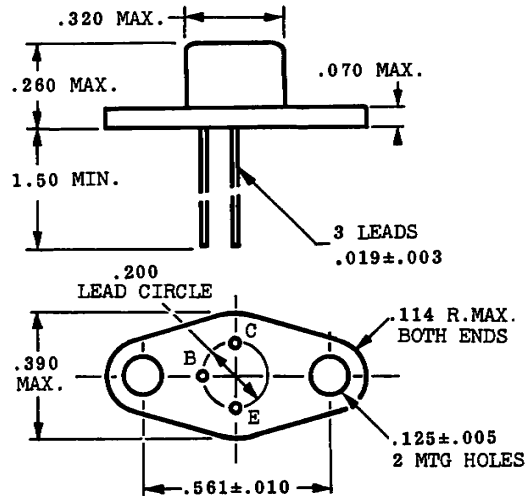
IN ORDER OF CASE NUMBER



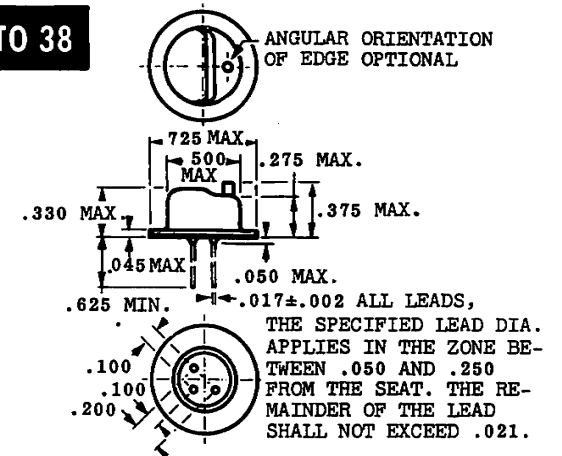
**TO 36**



**TO 37**

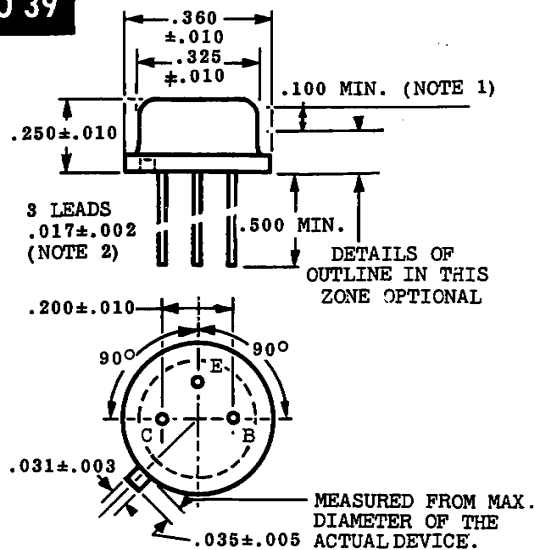


**TO 38**



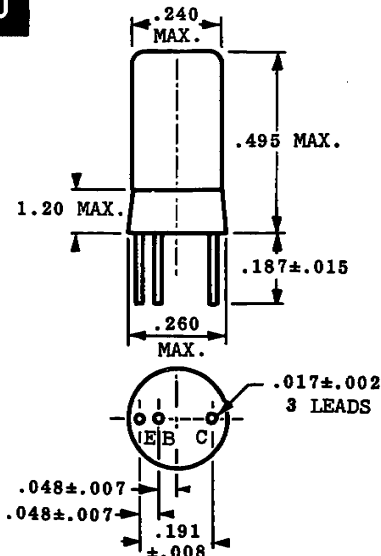
THE MAXIMUM DIAMETER LEADS SHALL BE WITHIN .010 OF THEIR TRUE CENTERS WITH RESPECT TO THE .725 DIA. MEASURED AT POINTS .050 MAX. BELOW THE SEAT AND AT THE MAXIMUM MATERIAL CONDITION.

**TO 39**

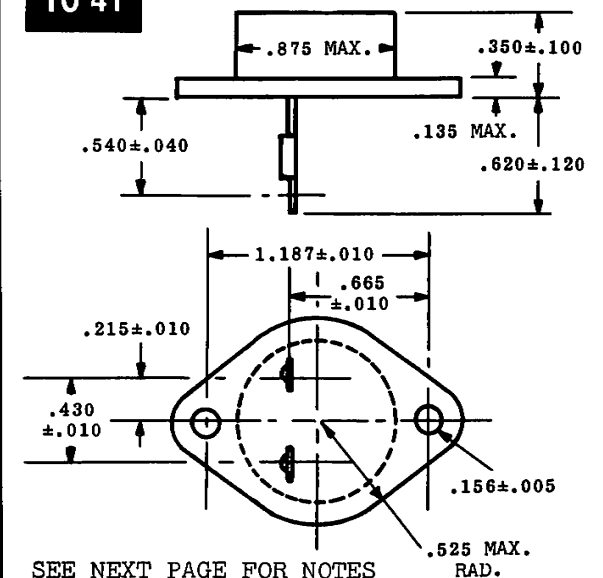


SEE TO-9 FOR NOTES

**TO 40**



**TO 41**



SEE NEXT PAGE FOR NOTES

ALL DIMENSIONS IN INCHES

# 5. OUTLINE DRAWINGS

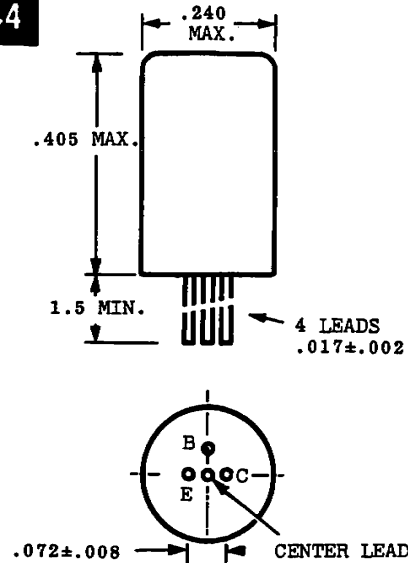
IN ORDER OF CASE NUMBER



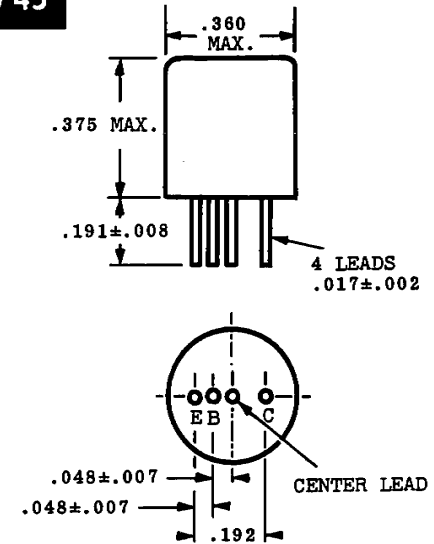
**NOTES FOR TO-41:**

1. THESE DIMENSIONS SHOULD BE MEASURED AT POINTS .050 TO .055 BELOW SEATING PLANE. WHEN GAGE IS NOT USED, MEASUREMENT WILL BE MADE AT SEATING PLANE.
2. SQUARE OR RADIUS ON END OF TERMINAL . AND/OR HOLE OPTIONAL.

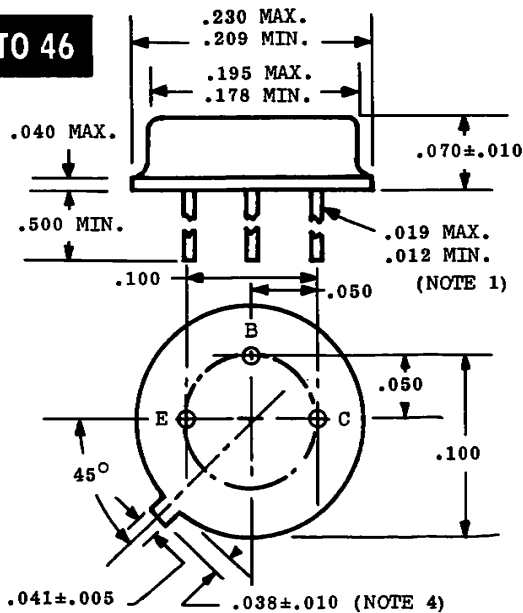
**TO 44**



**TO 45**



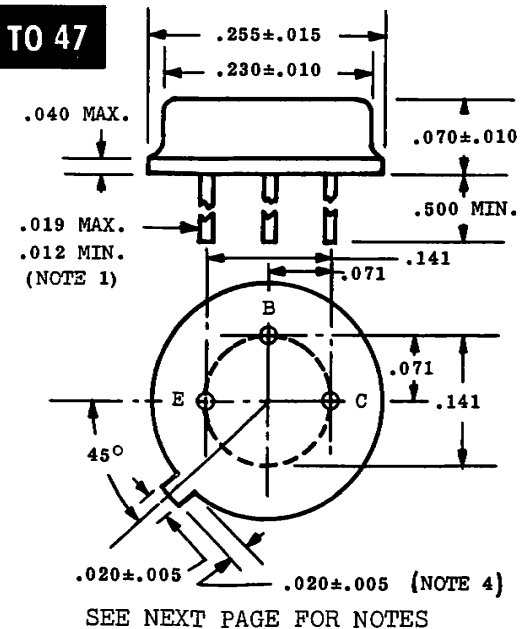
**TO 46**



**NOTES FOR TO-46:**

1. The specified lead diameter applies to the zone between .050 and .250 from the base seat. Between .250 and the end of lead a maximum of .021 is held. Outside of these zones the lead diameter is not controlled.
2. Maximum diameter leads at a gaging plane  $.054^{+.001}_{-.000}$  below base seat to be within .007 of their true location relative to max. width tab and to the maximum .230 diameter measured with a suitable gage. When gage is not used, measurement will be made at seating plane.
3. Index tab for visual orientation only.
4. Measured from max. diameter of the actual device.

**TO 47**



SEE NEXT PAGE FOR NOTES

ALL DIMENSIONS IN INCHES

# 5. OUTLINE DRAWINGS

IN ORDER OF CASE NUMBER



### NOTES FOR TO-47:

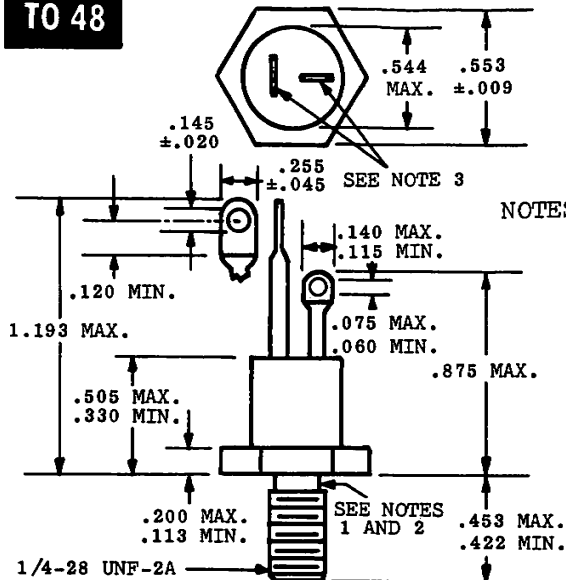
1. The specified lead diameter applies to the zone between .050 and .250 from the base seat. Between .250 and the end of lead a maximum of .021 is held. Outside of these zones the lead diameter is not controlled.

2. Maximum diameter leads at a gaging plane  $.054^{+.001}_{-.000}$  below base seat to be within .007 of their true location relative to max. width tab and to the maximum .270 diameter measured with a suitable gage. When gage is not used, measurement will be made at seating plane.

3. Index tab for visual orientation only.

4. Measured from max. diameter of the actual device.

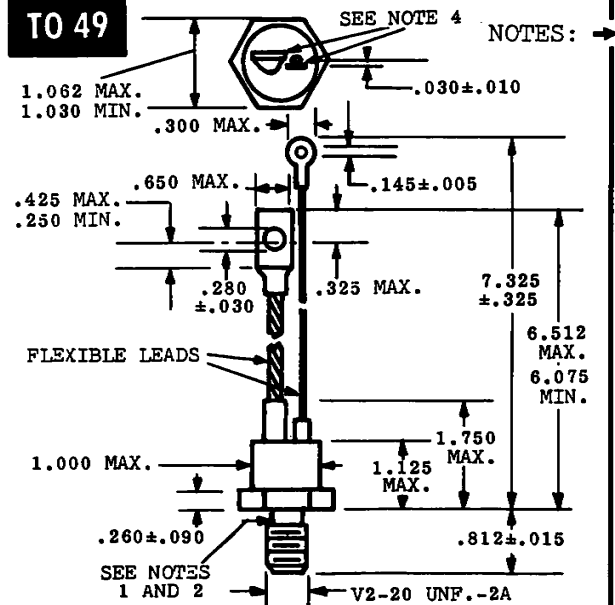
### TO 48



### NOTES FOR TO-48

1. Complete threads to extend to within 2 1/2 threads of head.
2. Dia. of unthreaded portion .249 max. .220 min.
3. Angular orientation of these terminals is undefined
4. Max. pitch dia. of plated threads shall be basic pitch dia (.2268) ref. (Screw Thread Standards for Federal Services 1957) Handbook H28 1957 P1.
5. A chamfer (or undercut) on one or both ends of hexagonal portions is optional.
6. Square or radius on end of terminal is optional.

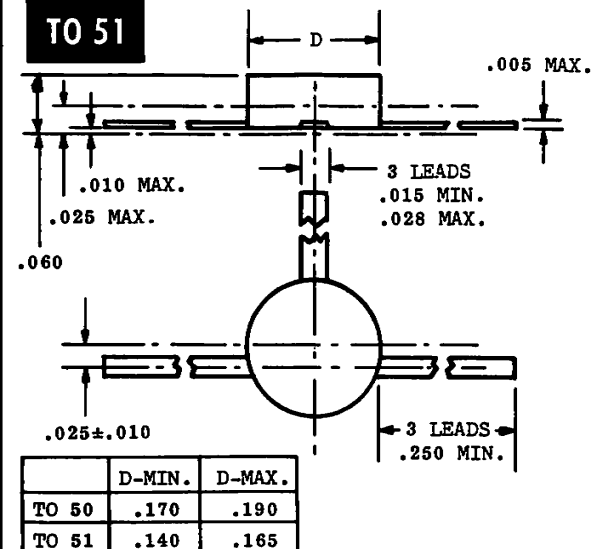
### TO 49



### NOTES FOR TO-49

1. Complete threads to extend to within 2 1/2 threads of head.
2. Dia. of unthreaded portion .435 max. .425 min.
3. Screw Thd. Standards for Federal Services (1957 Handbook H28 P1) apply to UNF 2A thd.
4. Angular orientation of these terminals is undefined.
5. A chamfer (or undercut) on one or both ends of hexagonal portions is optional.
6. Square or radius on end of terminal is optional.

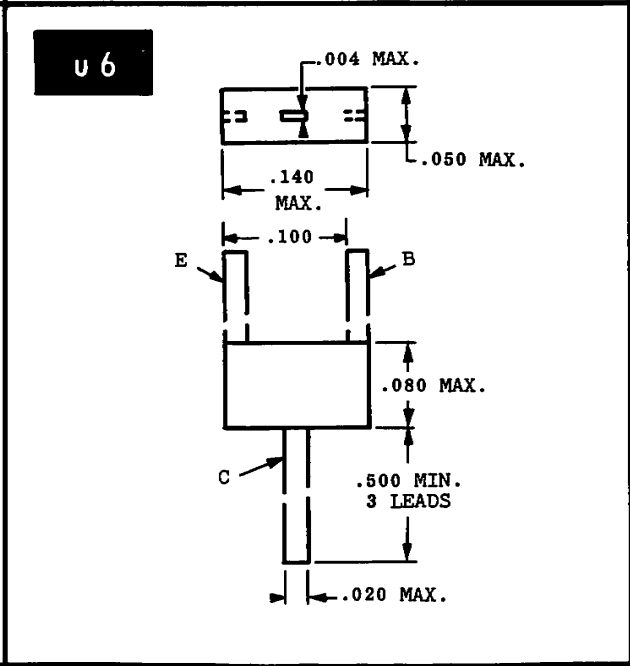
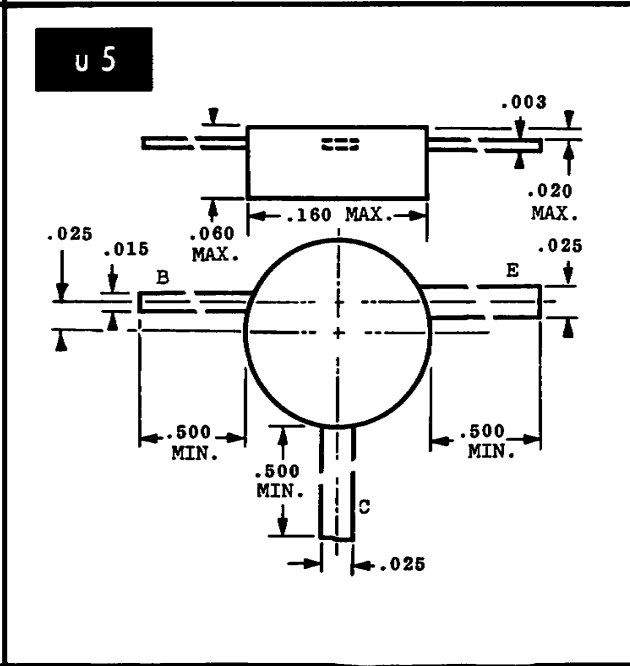
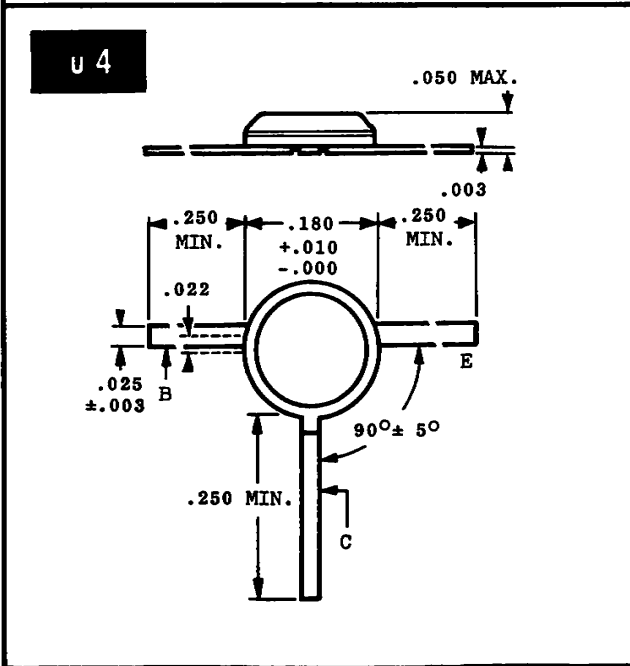
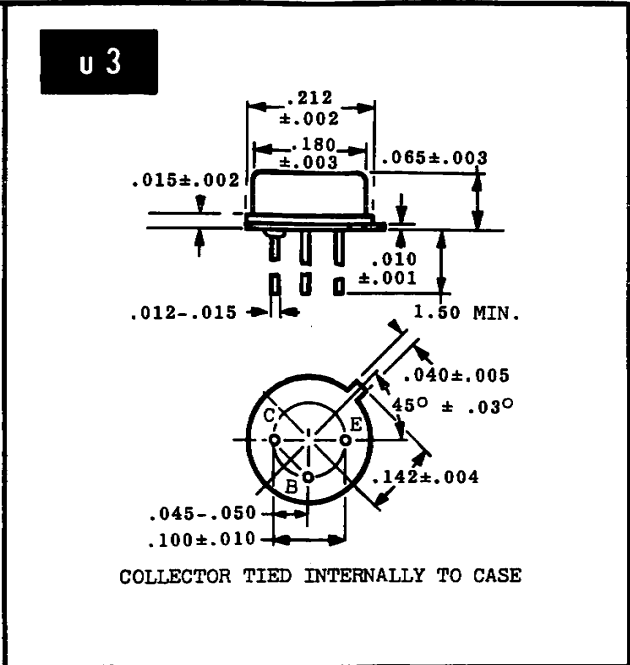
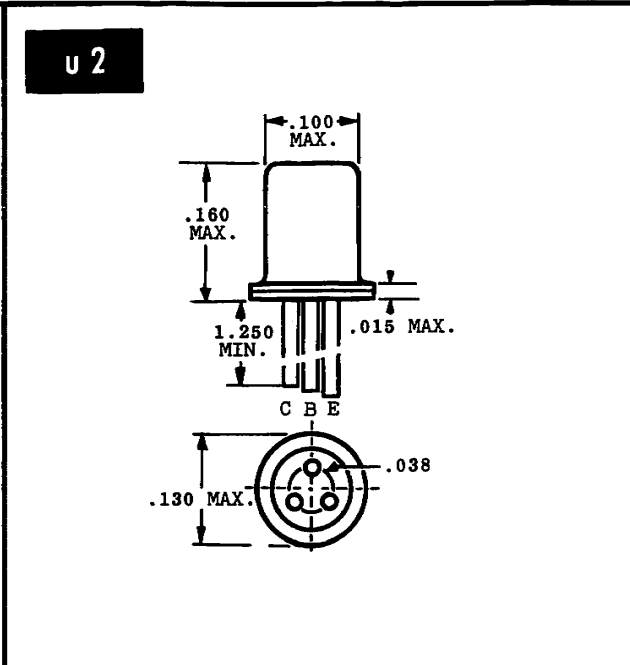
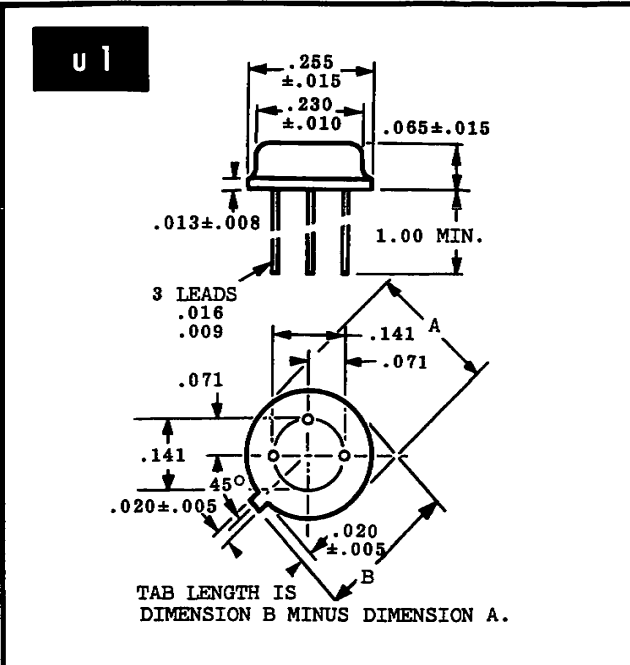
### TO 50 TO 51



	D-MIN.	D-MAX.
TO 50	.170	.190
TO 51	.140	.165

ALL DIMENSIONS IN INCHES

# 5. OUTLINE DRAWINGS IN ORDER OF CASE NUMBER

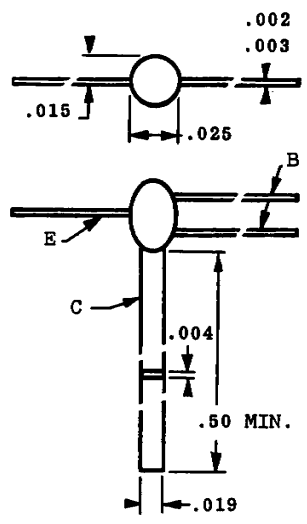


ALL DIMENSIONS IN INCHES

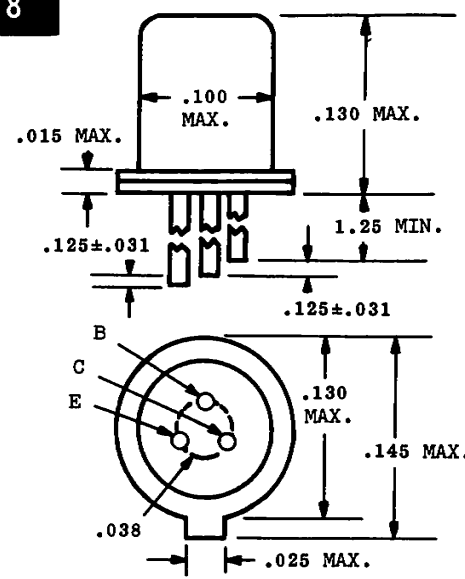
# 5. OUTLINE DRAWINGS IN ORDER OF CASE NUMBER



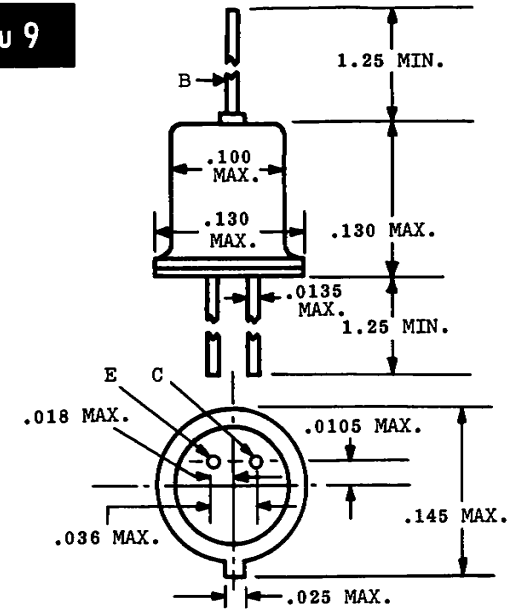
**u 7**



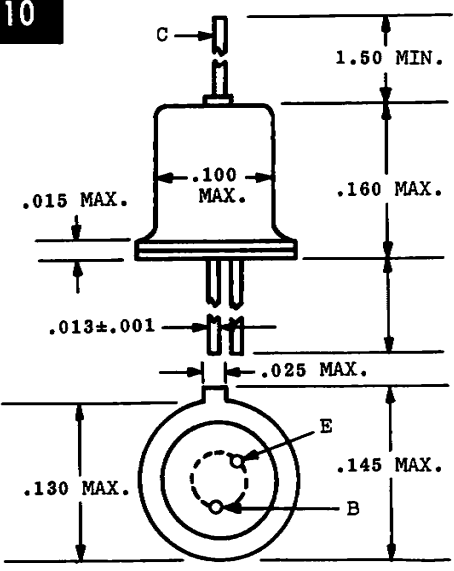
**u 8**



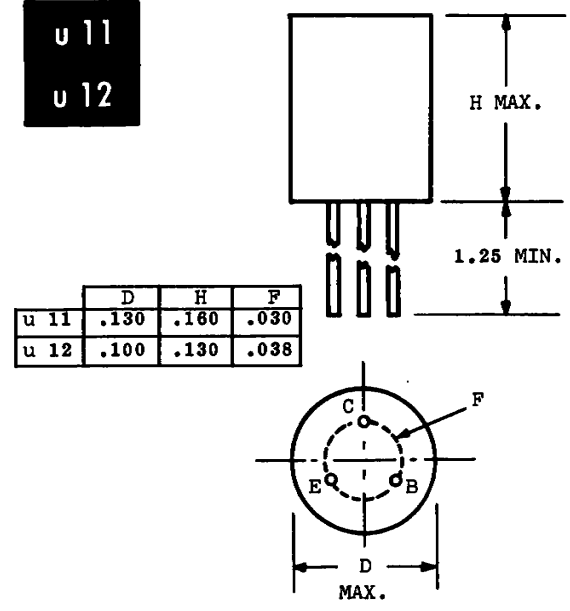
**u 9**



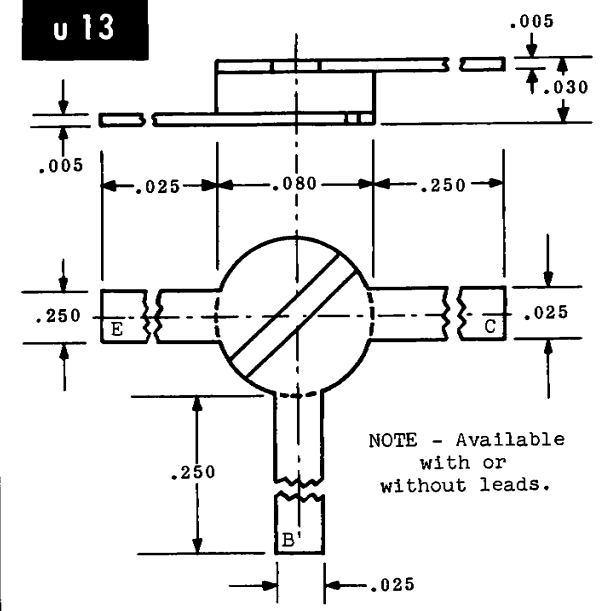
**u 10**



**u 11  
u 12**



**u 13**



ALL DIMENSIONS IN INCHES

5. OUTLINE DRAWINGS  
IN ORDER OF CASE NUMBER



<p><b>X1</b></p> <p>.83 MAX.</p> <p>.059</p> <p>.67 MAX.</p> <p>.16 MAX.</p> <p>1.5 MIN.</p> <p>.012</p>		

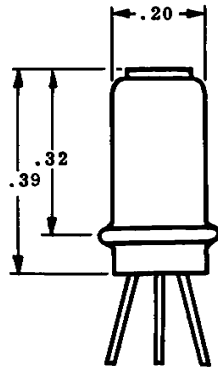
ALL DIMENSIONS IN INCHES



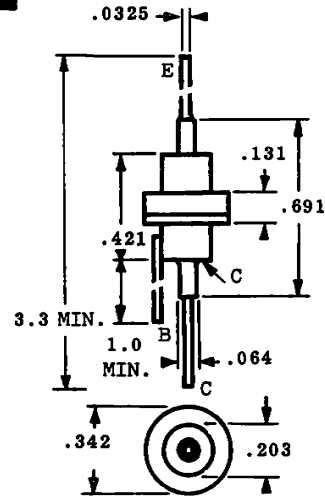
# 5. OUTLINE DRAWINGS IN ORDER OF CASE NUMBER



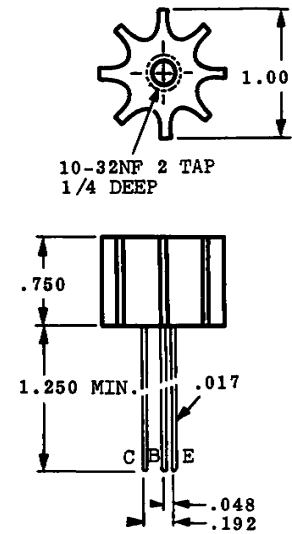
**X 2**



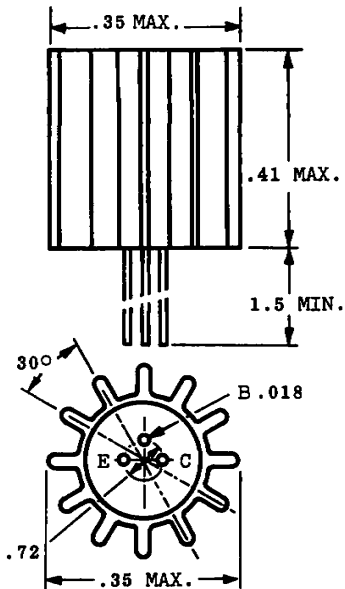
**X 3**



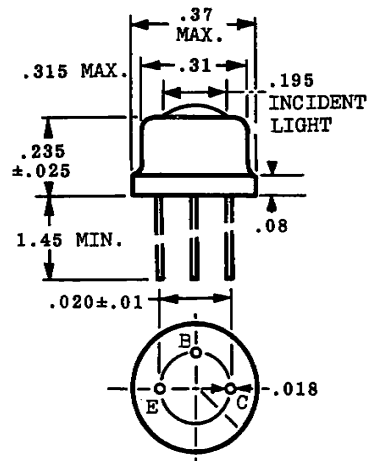
**X 4**



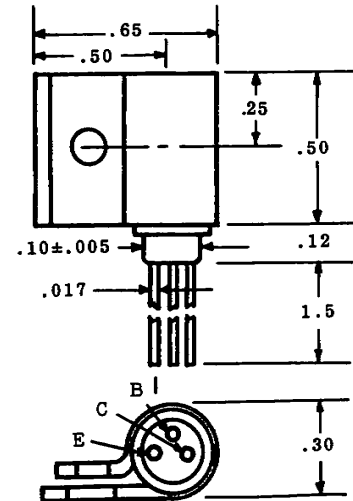
**X 5**



**X 6**



**X 7**



ALL DIMENSIONS IN INCHES

6. TRANSISTORS WITH U. S. MILITARY SPECIFICATIONS  
IN ORDER OF TYPE NO.



TYPE No.	MIL. SPEC. No.	TYPE No.	MIL. SPEC. No.	TYPE No.	MIL. SPEC. No.
2N43A	MIL-T-19500/18 (AF)	Δ*2N428	MIL-S-19500/44B(JAN)	Ø2N1026A	MIL-S-19500/78A(SC)
2N44A	MIL-T-19500/6 (AF)	2N461	MIL-T-19500/45 (AF)	Ø*2N1039	MIL-S-19500/89 (NAVY)
2N78A	MIL-S-19500/90 (AF)	2N463	MIL-T-19500/70 (NAVY)	Ø2N1041	MIL-S-19500/89 (NAVY)
2N117	MIL-T-19500/35 (NAVY)	2N464	MIL-T-19500/49B(SC)	2N1042	MIL-S-19500/137(SC)
2N118	MIL-T-19500/2 (JAN)	2N465	MIL-T-19500/50A(SC)	2N1043	MIL-S-19500/137(SC)
2N119	MIL-T-19500/35 (NAVY)	2N466	MIL-S-19500/51C(JAN)	2N1044	MIL-S-19500/137(SC)
2N123	MIL-T-19500/30 (AF)	Ø2N467	MIL-T-19500/52B(SC)	2N1045	MIL-S-19500/137(SC)
2N123A	MIL-T-19500/30 (AF)	2N489	MIL-T-19500/75 (AF)	2N1046	MIL-S-19500/88 (NAVY)
2N128	MIL-T-19500/9A (JAN)	2N490	MIL-T-19500/75 (AF)	2N1047A	MIL-S-19500/176(NAVY)
2N129	MIL-T-19500/8 (SC)	Ø2N491	MIL-T-19500/75 (AF)	2N1048A	MIL-S-19500/176(NAVY)
2N158	MIL-S-19500/24B(JAN)	2N492	MIL-T-19500/75 (AF)	2N1049A	MIL-S-19500/176(NAVY)
2N167	MIL-S-19500/11A(AF)	2N493	MIL-T-19500/75 (AF)	Ø2N1050A	MIL-S-19500/176(NAVY)
2N167A	MIL-S-19500/11B(AF)	2N494	MIL-T-19500/75 (AF)	2N1072	MIL-S-19500/163(SC)
2N174	MIL-T-19500/13A(JAN)	2N495	MIL-T-19500/54A(SC)	2N1081	MIL-S-19500/190(SC)
2N174A	MIL-T-19500/13 (AF)	2N496	MIL-S-19500/85 (SC)	2N1082	MIL-S-19500/103(SC)
Ø*2N220	MIL-T-19500/1 (JAN)	2N497	MIL-S-19500/74B(JAN)	2N1094	MIL-S-19500/161(SC)
2N240	MIL-S-19500/25A(JAN)	Δ*2N498	MIL-S-19500/74B(JAN)	2N1100	MIL-T-19500/76 (NAVY)
2N274	MIL-T-19500/26 (SC)	2N499	MIL-T-19500/72A(SC)	Ø2N1118	MIL-S-19500/138(SC)
Δ*2N297A	MIL-T-19500/36A(SC)	2N501A	MIL-S-19500/62A(JAN)	Ø2N1119	MIL-S-19500/139A(SC)
2N300	MIL-T-19500/55 (SC)	2N502A	MIL-S-19500/112(SC)	Ø*2N1120	MIL-T-19500/68 (SC)
2N325	MIL-S-19500/40A(JAN)	Δ*2N526	MIL-S-19500/60C(JAN)	2N1131	MIL-S-19500/177(NAVY)
Ø*2N326	MIL-S-19500/40A(JAN)	2N537	MIL-S-19500/100(SC)	Ø*2N1132	MIL-S-19500/177(NAVY)
2N328A	MIL-S-19500/110(SC)	Δ*2N539	MIL-T-19500/38A(NAVY)	Ø2N1142	MIL-S-19500/87 (NAVY)
Δ*2N329A	MIL-S-19500/111(SC)	2N539A	MIL-T-19500/38A(NAVY)	2N1158A	MIL-S-19500/113(SC)
2N331	MIL-S-19500/4B (JAN)	2N545	MIL-S-19500/84 (NAVY)	Ø2N1165	MIL-S-19500/178(NAVY)
2N332	MIL-T-19500/37A(NAVY)	Ø2N559	MIL-S-19500/152(SC)	2N1183	MIL-S-19500/143(SC)
2N333	MIL-T-19500/37A(NAVY)	Ø2N560	MIL-S-19500/73A(JAN)	2N1183A	MIL-S-19500/143(SC)
2N334	MIL-T-19500/37A(NAVY)	2N574	MIL-T-19500/46 (SC)	2N1183B	MIL-S-19500/143(SC)
Δ*2N335	MIL-T-19500/37A(NAVY)	2N575	MIL-T-19500/47 (SC)	2N1184	MIL-S-19500/143(SC)
Ø*2N337	MIL-S-19500/69C(NAVY)	Ø2N599	MIL-S-19500/166(NAVY)	2N1184A	MIL-S-19500/143(SC)
Δ*2N338	MIL-S-19500/69C(NAVY)	2N600	MIL-S-19500/197(SC)	Ø2N1184B	MIL-S-19500/143(SC)
2N339	MIL-S-19500/31 (NAVY)	2N624	MIL-S-19500/82 (SC)	Ø*2N1195	MIL-S-19500/71C(JAN)
2N340	MIL-T-19500/31 (NAVY)	2N650A	MIL-S-19500/175(NAVY)	2N1196	MIL-S-19500/164(SC)
Ø2N341	MIL-T-19500/31 (NAVY)	2N651A	MIL-S-19500/175(NAVY)	2N1197	MIL-S-19500/165(SC)
2N342	MIL-S-19500/16C(JAN)	Ø2N652A	MIL-S-19500/175(NAVY)	2N1199A	MIL-S-19500/131(SC)
2N343	MIL-S-19500/16C(JAN)	2N656	MIL-S-19500/74B(JAN)	2N1200	MIL-S-19500/105(SC)
Δ*2N358A	MIL-S-19500/63C(JAN)	Δ*2N657	MIL-S-19500/74B(JAN)	2N1201	MIL-S-19500/101(SC)
2N377	MIL-T-19500/65 (NAVY)	2N665	MIL-S-19500/58C(JAN)	2N1224	MIL-S-19500/189(SC)
Ø*2N384	MIL-S-19500/27B(JAN)	2N694	MIL-S-19500/160(SC)	2N1225	MIL-S-19500/189(SC)
Δ2N388	MIL-T-19500/65 (NAVY)	Ø2N695	MIL-S-19500/135(NAVY)	Ø2N1234	MIL-S-19500/179(SC)
Ø*2N389	MIL-S-19500/173(NAVY)	2N696	MIL-S-19500/99A(SC)	2N1302	MIL-S-19500/126A(NAVY)
Ø*2N393	MIL-S-19500/77B(JAN)	Δ*2N697	MIL-S-19500/99A(SC)	2N1303	MIL-S-19500/126A(NAVY)
2N395	MIL-T-19500/64 (NAVY)	Ø2N700A	MIL-S-19500/123(SC)	2N1304	MIL-S-19500/126A(NAVY)
2N396	MIL-T-19500/64 (NAVY)	2N702	MIL-S-19500/153(SC)	2N1305	MIL-S-19500/126A(NAVY)
Δ*2N396A	MIL-S-19500/64B(JAN)	2N703	MIL-S-19500/153(SC)	2N1306	MIL-S-19500/126A(NAVY)
2N397	MIL-T-19500/20 (AF)	Δ2N705	MIL-S-19500/86 (NAVY)	2N1307	MIL-S-19500/126A(NAVY)
Ø*2N398	MIL-S-19500/174(NAVY)	Δ2N706	MIL-S-19500/120(SC)	Ø2N1308	MIL-S-19500/126A(NAVY)
Δ*2N404	MIL-T-19500/20 (AF)	2N716	MIL-S-19500/154(SC)	Ø2N1309	MIL-S-19500/126A(NAVY)
2N416	MIL-T-19500/56A(SC)	2N1000	MIL-T-19500/79 (SC)	Ø2N1310	MIL-S-19500/136 (NAVY)
2N417	MIL-T-19500/57A(SC)	2N1001	MIL-S-19500/81 (SC)	Δ*2N1358	MIL-S-19500/122 (SC)
2N422	MIL-T-19500/66A(NAVY)	2N1002	MIL-S-19500/83 (SC)	2N1411	MIL-S-19500/133 (SC)
Ø*2N424	MIL-S-19500/173(NAVY)	2N1008B	MIL-S-19500/196(SC)	2N1412	MIL-S-19500/133 (SC)
2N425	MIL-T-19500/41A(SC)	2N1011	MIL-T-19500/67 (SC)	2N1433	MIL-S-19500/180 (SC)
2N426	MIL-T-19500/42A(SC)	Ø2N1016B	MIL-S-19500/102(AF)	2N1484	MIL-S-19500/180(SC)
2N427	MIL-T-19500/43A(SC)	2N1025	MIL-S-19500/78A(SC)	Ø2N1485	MIL-S-19500/180(SC)
		2N1026	MIL-S-19500/78A(SC)	2N1486	MIL-S-19500/180(SC)
				2N1499A	MIL-S-19500/170(SC)
				Ø2N1500	MIL-S-19500/125A(SC)
				Ø2N1613	MIL-S-19500/181(NAVY)
				Ø2N1893	MIL-S-19500/182(NAVY)
				Ø*3N35	MIL-S-19500/80B(JAN)

Ø - GUIDANCE  
Δ - PREFERRED  
\* - NATO

## HEADING SYMBOL DEFINITIONS

- $BV_{CB}$  — Breakdown voltage, collector to base junction reverse biased, emitter open-circuited.  
 $BV_{CE}$  — Breakdown voltage, collector to emitter, base open-circuited.  
 $BV_{EB}$  — Breakdown voltage, emitter to base junction reverse biased, collector open-circuited.  
 $C_{ob}$  — Collector to base capacitance across the output terminals with input AC open-circuited.  
 $f_{\alpha b}$  — Common base, the frequency at which the magnitude of the small signal short-circuit forward current transfer ratio ( $h_{fb}$ ) is 0.707 of its low frequency value.  
 $f_T$  — The frequency at which the common emitter small signal short-circuit forward current transfer ratio ( $h_{fe}$ ) is equal to one.  
 $h_i$  — Input impedance, output AC short-circuited. Circuit configuration (b — common base, e — common emitter) indicated under arrow.  
 $h_o$  — Output admittance, input AC open-circuited. Circuit configuration (b — common base, e — common emitter) indicated under arrow.  
 $h_r$  — Reverse voltage transfer ratio, input AC open-circuited. Circuit configuration (b — common base, e — common emitter) indicated under arrow.  
 $h_{fb}$  — Common base, forward-current transfer ratio, output AC short-circuited.  
 $h_{fe}$  — Common emitter, forward-current transfer ratio, output AC short-circuited.  
 $h_{FE}$  — Common emitter — static value of short-circuit forward current transfer ratio.  
 $I_{C,B,E}$  — DC current into collector, base, or emitter terminal.  
 $I_{CBO}$  — Collector current with collector junction reversed biased and emitter DC open-circuited  
 NF — Noise figure.  
 $r_{bb}$  — Extrinsic base resistance.  
 $t_r$  — Rise time.  
 $V_{cb}$  — A.C. Voltage, collector to base.  
 $V_{EB}$  — D.C. Voltage, emitter to base.

These prefixes, used to indicate powers of ten, are recommended by the International Committee on Weights and Measures and have been adopted by the National Bureau of Standards:

<u>POWER</u>	<u>PREFIX</u>	<u>SYMBOL</u>
$10^{12}$	tera	T
$10^9$	giga	G
$10^6$	mega	M
$10^3$	kilo	k
$10^2$	hecto	h
10	deka	dk
$10^{-1}$	deci	d
$10^{-2}$	centi	c
$10^{-3}$	milli	m
$10^{-6}$	micro	$\mu$
$10^{-9}$	nano	n
$10^{-12}$	pico	p

## EXPLANATORY COMMENTS

Under the column heading 'Status', we indicate if a particular type has a military specification, either Air Force, Army, Navy, or combined service (the latter known as a MIL specification). This indication does not specify which, if any, of the manufacturers have qualification approval. Qualification approval can only be obtained by contacting the military services direct.



# SYMBOLS APPLICABLE BOTH to JUNCTION and POWER TRANSISTOR SECTIONS

## FOLLOWING ANY COLUMN

- $\triangle$ —Minimum
- $\square$ —Maximum
- $\dagger$ —Pulsed

## FOLLOWING LINE NO.

- $\blacktriangledown$ —New
- $\blacklozenge$ —Revised
- #—Foreign
- $\ddagger$ —Replacement use only

## FOLLOWING $t_r$

- $\emptyset$ — $t_d + t_r$
- $\S$ — $t_s$

## FOLLOWING MAX. DISS. & MAX. THERM. RESIST.

(Note: This means derating factor applies starting with this temperature)

- $\dagger$ —at 40° C.
- \*—at 45° C.
- #—at 50° C.
- $\square$ —at 60° C.
- $\S$ —at 75° C.
- $\$$ —at 100° C.
- $\emptyset$ —Infinite heat sink

## FOLLOWING $f_{\alpha b}$

$$* \text{—Max. Freq. of Osc.} = \left( \frac{\alpha f_{\alpha b}}{8\pi r'_b C_c} \right)^{1/2} \text{Mc.}$$

$$\emptyset \text{—Figure of Merit} = \frac{1}{4\pi} \left( \frac{g_m}{r'_{bb} C'_{bc} C'_{be}} \right)^{1/2} \text{Mc.}$$

Freq. for Unity Power Gain

$\S$ —Gain-Bandwidth Product,  $f_T$

## FOLLOWING BIAS $V_{CB}$

$$\emptyset \text{—} V_{CE}$$

## FOLLOWING TEMP.

- A—Ambient
- B—Base or Stud
- C—Case
- J—Junction
- M—Mounting Flange
- S—Storage

## UNDER STATUS

- A—Army Spec.
- D—Under Development
- F—AF Spec.
- M—Mil. Spec.
- N—Navy Spec.
- R—Military Use Only
- T—Tentative Data

## FOLLOWING TYPE

- A—Alloyed
- AV—Avalanche Mode
- B—Bi-directional or symmetrical
- D—Diffused or Drift
- E—Epitaxial
- F—Fused
- FET—Field Effect Transistor
- G—Grown
- H—Hook Collector
- MA—Microalloy
- MD—Microalloy Diffused
- ME—Mesa
- PA—Precision Alloy
- PC—Point Contact
- PL—Planar
- S—Surface Barrier
- UNI—Unijunction
- 4—Tetrode
- $\S$ —Matched Pair—PNP & NPN
- $\ddagger$ —Switching Primarily
- $\triangle$ —Switching plus its other uses
- \*—Pair
- $\emptyset$ —Photo-Transistor

# JUNCTION TRANSISTOR SYMBOLS ONLY

## FOLLOWING MAXIMUM $V_{cb}$

$$\emptyset \text{—} V_{ce}$$

## FOLLOWING BIAS $I_e$

$$\emptyset \text{—} I_c$$

$$\triangle \text{—} I_b$$

## FOLLOWING MAXIMUM $I_{cbo}$

$$\emptyset \text{— at } V_{cb}^* < \text{Max. } V_{cb}$$

(\*see mfr. specs.)

# POWER TRANSISTOR SYMBOLS ONLY

## FOLLOWING MAXIMUM $I_C$ & $I_B$

$$\emptyset \text{—} I_E$$

## FOLLOWING BIAS $I_C$

$$\emptyset \text{—} I_B$$

$$\triangle \text{—} I_E$$

## FOLLOWING MAXIMUM $BV_{CB}$ , $BV_{EB}$ , $BV_{CE}$

NOTE: This is the reverse bias condition between indicated electrodes when the other electrode is open-circuited (normally designated  $BV_{CBO}$ ,  $BV_{EBO}$ ,  $BV_{CEO}$ .)

#—Subscript s added i.e.  $BV_{CBS}$ ,  $BV_{EBS}$ ,  $BV_{CES}$

$\S$ —Subscript R added i.e.  $BV_{CBR}$ ,  $BV_{EBR}$ ,  $BV_{CER}$

**NOTE:** All values in this tabulation are Typical and given at 25° C. ambient unless otherwise indicated.

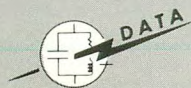


# Manufacturers

in order of code letters

- ADV** — Advanced Research Associates, Box 68, Kensington, Md.  
**AEG** — Allgemeine Elektricitats-Gesellschaft, Schutzenstrasse 30, Belecke (Mohne), Germany  
**AEIL** — Associated Electrical Industries Export, Carlholme Road, Lincoln, England  
**AMP** — Amperex Electronic Co., 230 Duffy Ave., Hicksville, N. Y.  
**BEN** — Bendix Semicon. Products, South St., Holmdel, N. J.  
**\*\*BRDB** — G. and E. Bradley Ltd., Electrical House, Neasden Lane, London, N.W. 10, England  
**BRUB** — Brush Crystal Co. Ltd., Hythe, Southampton, England  
**CDLF** — Compagnie des Lampes, 29 Rue de Lisbonne, Paris 8e, France  
**CLE** — Clevite Transistor, 200 Smith St., Waltham 54, Mass.  
**CRY** — Crystalonics, 249 Fifth St., Cambridge 42, Mass.  
**\*\*CSC** — Clark Semiconductor Corp., Walnut Ave., Clark, New Jersey  
**CSF** — (COSEM) Cie Generale des Semi-Conducteurs, 12 Rue de la Republique, Puteaux, Seine, France  
**DEL** — Delco Radio Div., General Motors Corp., Kokomo, Ind.  
**EBAS** — Ebauches S.A., Faubourg Hopital 1, Neuchatel, Switzerland  
**ELE** — Electromation Co., 4254 Glencoe Ave., Venice, Calif.  
**ETC** — Electronic Transistors Corp., 9226 Hudson Blvd., North Bergen, N. J.  
**FCAJ** — Fuji Communication Apparatus Mfg. Co., No. 1015, Kamiddanaka, Kawasaki City, Kanagawa Prefecture, Japan  
**FERB** — Ferranti Ltd; Gemmill, Chadderton, Oldham, Lancs, England  
**FSC** — Fairchild Semiconductor Corp., 545 Whisman Road, Mountain View, Calif.  
**FTC** — Fanon Transistor Corp., 439 Frelinghuysen Ave., Newark 12, N. J.  
**FTHF** — French Thomson-Houston Semicon. Dept., 41 Rue de l'Amiral Mouchez, Paris 13e, France  
**GECB** — General Electric Co. Ltd., Semicon. Div., Hazel Grove, Stockport, Ches., England  
**GELC** — Canadian General Electric Co., 189 Dufferin St., Toronto, Ont., Canada  
**GESY** — General Electric Semicon. Products, 1224 W. Genesee St., Syracuse, N. Y.  
**GIC** — General Instrument Corp., 65 Gouverneur St., Newark 4, N. J.  
**HITJ** — Hitachi Ltd., Mushashi Works, 1450 Kodaira-Mochi, Kitatama-Gun, Toyko, Japan  
**HSDC** — Hoffman Semiconductor Div., 1001 Arden Drive, El Monte, Calif.  
**HUG** — Hughes Products, Semicon. Div., P. O. Box 278, Newport Beach, Calif.  
**INTG** — Intermetall, Hans-Bunte-Strasse 19, Freiburg i. Br., Germany  
**ITC** — Industro Transistor Corp., 35-10 36th Ave., Long Island City 6, N. Y.  
**KOKJ** — Kobe Kogyo Corp., Hyogo-ku, Kobe, Japan  
**KSC** — Kearfoot Semiconductor Corp., 437 Cherry St., West Newton 65, Mass.  
**MATJ** — Matsushita Electronics Corp., 300 Oaza Nishiiozumi, Takatsuki, Osaka, Japan  
**MIN** — Minneapolis-Honeywell Semicon. Products, 2747 Fourth Ave. S., Minneapolis 4, Minn.  
**MISI** — (MISTRAL) Manifattura Intereuropea Semi-conduttori Transistori Latina, Via Carnevali 113, Milan, Italy  
**MOTA** — Motorola Semicon. Products, 5005 East McDowell Road, Phoenix, Ariz.  
**MULB** — Mullard Overseas Ltd., Mullard House, Torrington Place, London, W. C. 1, England  
**NAS** — National Semiconductor Corp., P. O. Box 443, Danbury, Conn.  
**NECJ** — Nippon Electric Co., Ltd., 1753 Shimonumabe, Kawasaki City, Japan  
**\*\*NORC** — Northern Electric Co. Ltd., 1261 Shearer St., Montreal, Quebec, Canada  
**NTLB** — Newmarket Transistors Ltd., Exning Road, New Market, Cambridge, England  
**PHIL** — Philco Corp., Lansdale Tube Div., Lansdale, Pa.  
**PHIN** — Philips Gloeilampenfabrieken, Eindhoven, Netherlands  
**PSI** — Pacific Semiconductors, Inc., 12955 Chadron Ave., Hawthorne, California  
**RADF** — La Radiotechnique, Div. Tubes Electroniques, 130 Ave. Ledru Rollin, Paris 11e, France  
**\*\*RAU** — The Rauland Corp., 4245 North Knox Ave., Chicago 41, Illinois  
**RAYN** — Raytheon Semicon. Div., 150 California St., Newton 58, Mass.  
**RCAS** — Radio Corp. of America, Semiconductor Div., Somerville, N. J.  
**RDR** — Radio Development & Research Corp. (Bogue), 100 Pennsylvania Ave., Paterson 3, N. J.  
**ROSG** — Dr. Ing. Rudolph Rost, Ubbenstrasse 21, Hanover 1, Germany  
**SANJ** — Sanyo Electric Co., Ltd., 161-4 Haizuka, Daito City, Osaka, Japan  
**SEC** — Secoa Electronics Corp., 85 Sylvester St., Westbury, L. I., N. Y.  
**SGSI** — Societa Generale Semiconduttori, Via C. Olivetti 1, Agrate/Milano, Italy  
**SHEJ** — Shindengen Electric Mfg. Co. Ltd., 4, 2-chome Ohtemachi, Chiyodaku, Tokyo, Japan  
**SIHG** — Siemens and Halske Aktiengesellschaft, Balanstrasse 73, Munich 8, Germany  
**SIL** — Silicon Transistor Corp., 150 Glen Cove Road, Carle Place, L. I., N. Y.  
**SOI** — Semi-Onics Inc., 4 Broadway, Lowell, Mass.  
**SONY** — SONY Corp., 351 Kitashigawa-6, Shinagawa-ku, Tokyo, Japan  
**SPR** — Sprague Electric Co., North Adams, Mass.  
**SSD** — Sperry Semiconductor Div., South Norwalk, Conn.  
**\*\*SSE** — Solid State Electronics Co., 15321 Rayen St., Sepulveda, California  
**STCA** — Standard Telephones and Cables Pty. Ltd., 252/274 Botany Road, Alexandria, Sydney, Australia  
**STCB** — Standard Telephones & Cables, Footscray, Sidcup, Kent, England  
**SYL** — Sylvania Semiconductor Div., 100 Sylvan Road, Woburn, Mass.  
**TEC** — Transitron Electronic Corp., 168 Albion St., Wakefield, Mass.  
**\*TFKG** — Telefunken Gmbh, Postfach 837, Ulm/Donau, Germany  
**TIH** — Texas Instruments, Semicon.-Components Div., P. O. Box 312, Dallas, Texas  
**TIIB** — Texas Instruments Ltd., Manton Lane, Bedford, England  
**TKAD** — Tekade, Schliessfach 870, Nurnberg 2, Germany  
**TOSJ** — Tokyo Shibaura Electric Co., 1 Komukaitoshiba Cho, Kawasaki, Japan  
**TUNE** — Tung-Sol Electric Semicon. Div., 545 N. Arlington Ave., East Orange, N. J.  
**TYC** — Tyco Semiconductor Corp., Bear Hill, Waltham 54, Mass.  
**UST** — U. S. Transistor Corp., 149 Eileen Way, Syosset, L. I., N. Y.  
**VANN** — Van Der Heem N.V., Maanweg 156, The Hague, Netherlands  
**WEC** — Western Electric Co., Marion & Vine Sts., Laureldale, Pa.  
**WESY** — Westinghouse Electric Corp., Semiconductor Dept., Youngwood, Pa.  
**WTC** — Western Transistor Corp., 13021 S. Budlong Ave., Gardena, Calif.

\*Telefunken transistors not for export to U.S.A.  
\*\*New manufactures.



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