

SYMBOLS & CODES EXPLAINED

IN TYPE No. CROSS-INDEX & TECHNICAL SECTIONS

- Δ } Indicators of separate manufacturers producing same type number (non-JEDEC) whose characteristics are not the same.
- \square } This manufacturer-identifying symbol (assigned by D.A.T.A.) is an integral part of the type number (in Type No. Cross Index, Technical Data Sections) to avoid the possibility of confusing the devices of one manufacturer with the devices of others.
- $\%$ } Technical Data Sections)
- RT ... Replacement Type; consult manufacturer.

SYMBOLS & CODES COMMON TO MORE THAN ONE TECHNICAL SECTION

LINE No.

- ∇ - New Type
- \blacklozenge - Revised Specifications
- # - Non-JEDEC Type manufactured outside U.S.A.

TYPE No.

- \dagger - Switching type, also listed in Section 12
- \emptyset - Chopper, also listed in Section 13, Category 10
- * - These types also included elsewhere with other characteristics. See Type No. Cross Index for alternate line no.
- \S - Radiation Resistant Devices, also listed in Section 13, Category 13.

STRUCTURE (All Sections)

- A - Alloy Except 6 & 7)
- AN - Annular
- D - Diffused or drift
- DM - Diffused mesa
- E - Epitaxial
- EA - Epitaxial annular
- EM - Epitaxial mesa
- F - Fused
- G - Grown
- GA - Gallium Arsenide
- H - Hometaxial
- MA - Mico alloy
- MD - Micro alloy diffused
- ME - Mesa
- MOS - Metal oxide silicon
- PA - Precision alloy
- PC - Point contact
- PD - Precision alloy diffused
- PE - Planar epitaxial
- PL - Planar
- S - Surface barrier
- * - Matched pair
- Δ - Switching, other uses
- \square - Chopper, other uses
- \emptyset - Noise figure 8db or below
- \dagger - Plastic package
- $\%$ - Overlay

2. GERMANIUM PNP 3. GERMANIUM NPN 4. SILICON PNP 5. SILICON NPN -- Low Power Transistors

LINE No.	TYPE No.	1. MAX. COLL. DISS. @25°C (W)	2. DERATE IN FREE AIR W/C (Hz)	3. M E X P (V)	4. ABS. MAX. RATINGS @25°C (V)	5. BV _{cb0} (V)	6. BV _{ceo} (V)	7. BV _{ebo} (V)	8. I _{cb0} @MAX V _{cb} (A)	9. V _{cb} (V)	10. TYPICAL h _{FE} PARAMETERS				11. h _{oe} (mhos)	12. COMMON EMITTER			13. Cob (F)	14. STRUC-TURE	15. DWG # s/a TO200 Ser.	16. C A D E
											10. h _{fe}	11. h _{ie}	12. h _{re}	12. h _{ob}		12. h _{ib}	12. h _{rb}					

\emptyset - With infinite heat sink
Following symbols indicate temperature at which derating starts:

\dagger - 40°C	\square - 60°C	\S - 100°C
* - 45°C	\S - 70°C	\blacklozenge - Min.
# - 50°C	Δ - 85°C	

\dagger - f_{ae}
 \S - Gain bandwidth product (f_t)
* - Maximum frequency of oscillation
 \emptyset - Figure of merit (frequency for unity power gain)
 Δ - Minimum
 \square - Maximum

\emptyset - With infinite heat sink

* - 50-65°C	A - Ambient
\emptyset - 70-80°C	C - Case
# - 85-100°C	J - Junction
\blacklozenge - 110-125°C	S - Storage
\dagger - 130-135°C	
\S - 140-165°C	
$\%$ - 170-200°C	
∇ - Over 200°C	

\emptyset - I_C Δ - I_B

\emptyset - V_{CE}

\emptyset - At $V_{CB} < \text{Max. } V_{CB}$ (See Mfr. Spec.)
- I_{CEX} \S - Typical
 \S - I_{CES} * - I_{CER}
 \dagger - At Temp. $> 25^\circ\text{C}$ Δ - I_{CEO}
 \blacklozenge - At Temp. 25°C Case

- Pulsed or Peak
 \S - Minimum

- BV_{CEX} or punch-through
 \emptyset - BV_{CES} \square - $BV_{ceo(sus)}$
 \S - BV_{CER} * - Pulsed
 $\%$ - Indicates min. values given for BV_{cb0} , BV_{ceo} , and BV_{ebo} .

11-13: b - h parameters are h_{ob} , h_{ib} , h_{rb}
 \square - Maximum

10: \dagger - h_{FE} Δ - Minimum
- Pulsed \square - Maximum
 \S - h_{FC}
* - Available in selected ranges

\square - Maximum \S - C_{cb} \dagger - C_{re}

\S - Tetrode
- Radiation Resistant Device (Also See Above)

5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1 MAX. COLL. DISS. @25°C (W)	2 fab (Hz)	DERATE IN FREE AIR W/°C	TEMP. MAX. (°C)	ABS. MAX. RATINGS @25°C				MAX. Ic @ MAX Vcb (A)	TYPICAL 'h' PARAMETERS			Cob (F)	STRUC-TURE	DWG # s/a TO200 Ser.	# E O D E
						VbVco (V)	VbVce (V)	VbVbe (V)	Ic (A)		Vcb (V)	le (A)	hfe				
1	TMT697	150m	100M	833u	5J	60	40	5.0	200m	1.0u	10	150m	75	1	ME	T051	
2	2N1613/51	150m	130M	833u	5J	75	50	7.0		0.1u	10	150m	80	1#	PLTΔ	T051	
3	2N1613/TPT	150m	130M	833u	5J	75	50	7.0		0.1u	10	150m	80	1#	PLTΔ	X31	
4#	25C621T	150m	150M	1.2m	5J	25	15	4.0	100m	1.0u	6.0	10m	75	1#	PE	R126	A
5#	25C621A1	150m	150M	1.2m	5J	30	25	4.0	100m	1.0u	6.0	10m	75	1#	PE	R107c	
6#	25C622	150m	150M	1.2m	5J	25	15	4.0	100m	1.0u	6.0	10m	75	1#	PE	R126	
7#	25C912T	150m	150M	1.2m	5J	30	25	4.0	100m	1.0u	6.0	10m	90	1#	PE	R126	A
8#	BFS29P	150m	150M	1.2m	5J	45	45	5.0	200m	20n	15	100m	40	1Δ	PE	u17c	E
9#	BFS30P	150m	150M	1.2m	5J	45	45	5.0	200m	20n	15	100m	60	1Δ	PE	u17c	E
10#	BFS31P	150m	150M	1.2m	5J	45	30	5.0	200m	20n	15	100m	80	1Δ	PE	u17c	E
11	MT104	150m	150M	1.0m	5J	60	60	5.0		1.0u	10	150m	40	1	PE	u15	
12	NS6207T	150m	150M	1.2m	5J	45	50	5.0		200n	1.0	150m	30	1#Δ	PE	X16	
13	NS6212	150m	150M	1.2m	5A	150	150	6.0		50n	10	10m	50	1Δ	PE	X16	
14	2N1711/51	150m	160M	833u	5J	75	50	7.0		0.1u	10	150m	130	1	PLΔ	T051	
15	2N1711/TPT	150m	160M	833u	5J	75	50	7.0		0.1u	10	150m	130	1	PLΔ	X31	
16#	L4	150m	180M	1.5m	5J	50	40	5.0	100m	100n	6.0	1.0m	90	1Δ	PE		
17#	L5	150m	180M	1.5m	5J	50	40	5.0	100m	100n	6.0	1.0m	135	1Δ	PE		
18#	L6	150m	180M	1.5m	5J	50	40	5.0	100m	100n	6.0	1.0m	200	1Δ	PE		
19#	L7	150m	180M	1.5m	5J	50	40	5.0	100m	100n	6.0	1.0m	300	1Δ	PE		
20#	M3	150m	180M	1.5m	5J	50	40	5.0	100m	100n	6.0	1.0m	60	1Δ	PE		
21#	BFY37L	150m	200M	1.0m	5J	25	20	5.0	100m	100n	10	10m	35	1Δ	PE	u56b	A
22#	D6	150m	200M	1.5m	5J	30	25	5.0	30m	50n	3.0	500u	200	1Δ	PE		
23#	D7	150m	200M	1.5m	5J	30	25	5.0	30m	50n	3.0	500u	300	1Δ	PE		
24#	D8	150m	200M	1.5m	5J	30	25	5.0	30m	50n	3.0	500u	450	1Δ	PE		
25	NS6203	150m	200M	1.2m	5J	30	30	5.0		0.2u	10	10m	100	1Δ	PE	X16	
26	2N3131T	150m	250M	1.1m	5J	40	15	5.0	100m	25n	1.0	10m	30	1Δ	PE	X16	
27#	BCW60A1	150m*	250M	1.2m	5J	32	32	5.0	100m	20n	5.0	2.0m	200		PE	u56a	A
28#	BCW60B1	150m*	250M	1.2m	5J	32	32	5.0	100m	20n	5.0	2.0m	260	24	PE	u56a	A
29#	BCW60C1	150m*	250M	1.2m	5J	32	32	5.0	100m	20n	5.0	2.0m	330	30	PE	u56a	A
30#	BCW60D1	150m*	250M	1.2m	5J	32	32	5.0	100m	20n	5.0	2.0m	520	50	PE	u56a	A
31#	F1	150m	250M	1.5m	5J	50	25	5.0	50m	100n	3.0	500u	30	1Δ	PE		
32#	F2	150m	250M	1.5m	5J	50	25	5.0	50m	100n	3.0	500u	40	1Δ	PE		
33#	F3	150m	250M	1.5m	5J	50	25	5.0	50m	100n	3.0	500u	60	1Δ	PE		
34#	F4	150m	250M	1.5m	5J	50	25	5.0	50m	100n	3.0	500u	90	1Δ	PE		
35#	F5	150m	250M	1.5m	5J	50	25	5.0	50m	100n	3.0	500u	135	1Δ	PE		
36#	25C100T	150m	300M	1.2m	5J	40	15	5.0	200m	25n	1.0	10m	30	1Δ	PE	u23	C
37#	25C405T	150m	300M	1.2m	5J	15	15	3.5	50m	3.0u	30	10m	40	1Δ	ME	T018	
38	2N706/TPT	150m	320M	833u	5J	25	20	3.0		0.5u	1.0	10m	20	1#Δ	D	X31	
39	2N706A/TPT	150m	320M	833u	5J	25	15	5.0		0.5u	1.0	10m	20		D	X31	
40#	25C739	150m	350M	1.5m	5J	25	12	4.0	20m	1.0u	6.0	1.0m	60	1#	PE	T092	D
41	2N2218/TPT	150m	400M	833u	5J	60	30	5.0		0.1u	10	150m	80	1	PE	X31	
42	2N2219/TPT	150m	400M	833u	5J	60	30	5.0		0.1u	10	150m	150	1	PE	X31	
43#	25C659	150m	400M	1.2m	5J	25	12	4.0	20m	1.0u	6.0	1.0m	60	1#	PE	R126	
44	A466	150m	400M	1.0m	5J	40	30	4.0	25m	10u	10	4.0m	60	1	PE	T072	J
45#	B2T	150m	400M	1.0m	5J					50	5.0	1.0	40	1Δ	PE		
46#	B3T	150m	400M	1.0m	5J					50	5.0	1.0	60	1Δ	PE		
47#	B4T	150m	400M	1.0m	5J					50	5.0	1.0	90	1Δ	PE		
48#	BF207	150m	400M	1.0m	5J	40	30	4.0	25m	10u	10	4.0m	80	1	PL	T072	G
49#	BSV53P1	150m	400M	1.2m	5J					1.0	1.0	10m	40	1Δ	PE	u17c	E
50#	BSV54P1	150m	400M	1.2m	5J					1.0	1.0	10m	20	1Δ	PE	u17c	E
51	MT106	150m	400M	1.0m	5J	25		5.0		10u	1.0	10m	40	1	PE	u15	
52	MT107	150m	400M	1.0m	5J	40		5.0		25n	1.0	10m	30	1Δ	PE	u15	
53	NPC167	150m	400M	1.0m	5S	40	30	4.0	25m	0.1u	10	4.0m	57		PE	T072	J
54	NS6213	150m	400M	1.1m	5J	25	15	4.0	100m	50u	0.1	5.0m	20		PE	X16	
55#	25C921	150m	450M	1.2m	5J	25	12	4.0	10m	100n	3.0	500u	65	1	PE	u23a	C
56	2N708/TPT	150m	480M	833u	5J	40	15	5.0		0.2u	1.0	10m	30	1#Δ	PL	X31	
57#	25C1035	150m	500M	1.2m	5J	30	15	3.0	20m	1.0u	6.0	1.0m	70	1	PL	T0104	
58#	25C1036	150m	500M	1.2m	5J	30	15	3.0	20m	1.0u	6.0	1.0m	70	1	PL	T0104	
59	MT102	150m	500M	1.0m	5J	40	15	5.0		25n	1.0	10m	50	1	PE	u15	
60#	25C658	150m	550M	1.2m	5J	25	12	4.0	20m	1.0u	6.0	1.0m	60	1#	PE	R126	
61#	25C660	150m	600M	1.4m	5J	25	12	3.0	20m	100n	10	3.0m	60	1#	PE	R107c	
62#	25C661	150m	600M	1.4m	5J	25	12	3.0	20m	100n	10	3.0m	60	1#	PE	R107c	
63#	25C707	150m	650M	1.4m	5J	20	20	3.0	20m	100u	10	2.0m	50	1	PE		
64	MT100	150m	750M	1.0m	5J	25	20	3.0		50u	1.0	10m	45	1	PE	u15	
65	2N709/TPT	150m	800M	833u	5J	15	6.0	4.0		0.5u	5.0	10m	55	1	PE	X31	
66	2N2369/TPT	150m	800M	833u	5J	40	15	4.5	500m	40u	1.0	10m	80	1	PE	X31	
67	2N2594/TPT	150m	800M	833u	5J	40	15	4.5	500m	40u	1.0	10m	80	1	PE	X31	
68#	25C662	150m	800M	1.2m	5J	25	12	2.0	20m	50u	10	2.0m	40	1#	PE	R126	
69#	25C663	150m	900M	1.2m	5J	25	12	2.0	20m	50u	10	10m	40	1#	PE	R126	
70#	25C740	150m	900M	1.2m	5J	25	12	2.0	20m	50u	10	10m	40	1#	PE	R126	
71	2N2784/TPT	150m	1.0G	833u	5J	15	6.0	4.0	500m	5n	5.0	50m	120	1#	PE	X31	
72	A427	150m	1.0G	1.0m	5J	25	20	3.0	15m	100n	10	30m	23	1	PE	T072	G
73#	25C391	150m	1.2G	1.2m	5J	20	12	2.0	20m	1.0u	10	2.0m	70		PE	T072	
74#	25C804	150m	1.2G	2.0m	5J	15	13		20m	50u	3.0	1.0m	50	1	D		
75	2N3633/51	150m	1.3G	833u	5J	15	6.0	4.0	50m	5n	5.0	10m	150	1	PE	T051	
76	2N3633/TPT	150m	1.3G	833u	5J	15	6.0	4.0	50m	5n	5.0	10m	150	1	PE	X31	
77#	BFW78	150m	1.5G	1.0m	5J	30	14	4.0	80m	50u	5.0	50m	70	1	PE	u34a	A
78	K5011	150m	1.5G	1.1m	5J	25	12	2.5		50n	1.0	30m	100	1	D	T050	C
79	K5010	150m	1.7G	1.1m	5J	25	12	2.5		50n	1.0	30m	100	1	D	T050	C
80#	V327	150m	3.2G	1.2m	5J	20	12	3.0	50m	50u	1.0	30m	90	1#	PE	u23a	C
81#	25C987	150m	4.5G	1.2m	5J	20	15	3.0	30m	50u	10	10m	30	1Δ	PE	X80	G
82#	BF214	160m	150M	1.1m	5J	30	30	4.0	30m		10	1.0m	150		PE	T072	J
83#	BF215	160m	150M	1.1m	5J	30	30	4.0	30m		10	1.0m	70		PE	T072	J
84#	BF226	160m	150M	1.1m	5J	30	30	4.0	30m		10	1.0m	70		PE	T072	J
85	A495	160m	220M	2.0m	5J	30	20	5.0	30m		10						