

# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) MAX RISE TIME, (2) fab &  
(3) TYPE No.

LINE No.	TYPE No.	fab (Hz)	MAX RISE TIME tr (s)	MAX DELAY TIME td (s)	MAX STORE TIME ts (s)	MAX FALL TIME tf (s)	MAX. Pc IN FREE AIR @ 25°C (W)	BIAS			MAX. SAT. RES. (Ω)	Cob (F)	r'bb X Cob (s)	STRUCTURE P-NPN	M A T	MAX. TEMP (°C)	Y200 s/a TO200 Ser.	DWG #	L C O D E
								Vcb (V)	Ic (A)	hFE									
1#	BFX50	150MΔ	60n			200n	350m	1.0	150m	30 Δ	1.2	12p	NPE	Si	150S	T018	A	∅	
2	2N3973	200MΔ	60n			110n	360m	1.0	10m	100 Δ	2.0	7.0p	N	Si	200J	R67b	B	∅	
3	2N3974	200MΔ	60n			110n	360m	1.0	10m	200 Δ	2.0	7.0p	N	Si	150S	R67b	B	∅	
4	2N3975	200MΔ	60n			200n	360m	1.0	10m	100 Δ	2.0	7.0p	N	Si	150S	R67b	B	∅	
5	2N3976	200MΔ	60n			250n	360m	1.0	10m	200 Δ	2.0	7.0p	N	Si	150S	R67b	B	∅	
6	2N4971	200MΔ	60n	20n	150n	50n	500m	1.0	150m	40 #Δ	2.0	8.0p	P	Si	125J	T0106	A	∅	
7#	BC212	200MΔ	60n			30n	300m	5.0	2.0m	60 #Δ		10p	PE	Si	150S	R203	A	∅	
8#	BC212A	200MΔ	60n			30n	300m	5.0	2.0m	100 Δ		10p	PE	Si	150S	R203	A	∅	
9#	BC212B	200MΔ	60n			30n	300m	5.0	2.0m	200 Δ		10p	PE	Si	150S	R203	A	∅	
10#	BC212K	200MΔ	60n			30n	300m	5.0	2.0m	50 Δ		10p	P-PE	Si	125A	R204a	A	∅	
11#	BC212KA	200MΔ	60n			30n	300m	5.0	2.0m	300 Δ		10p	P-PE	Si	125A	R204a	A	∅	
12#	BC212KB	200MΔ	60n			30n	300m	5.0	2.0m	400 Δ		10p	P-PE	Si	125A	R204a	A	∅	
13#	BC212L	200MΔ	60n			30n	300m	5.0	2.0m	60 #Δ		10p	PE	Si	150S	T092	B	∅	
14#	BC212LA	200MΔ	60n			30n	300m	5.0	2.0m	100 Δ		10p	PE	Si	150S	T092	B	∅	
15#	BC212LB	200MΔ	60n			30n	300m	5.0	2.0m	200 Δ		10p	PE	Si	150S	T092	B	∅	
16#	BC213	200MΔ	60n			30n	300m	5.0	2.0m	80 #Δ		10p	PE	Si	150S	R203	A	∅	
17#	BC213A	200MΔ	60n			30n	300m	5.0	2.0m	100 Δ		10p	PE	Si	150S	R203	A	∅	
18#	BC213B	200MΔ	60n			30n	300m	5.0	2.0m	200 Δ		10p	PE	Si	150S	R203	A	∅	
19#	BC213C	200MΔ	60n			30n	300m	5.0	2.0m	350 Δ		10p	PE	Si	150S	R203	A	∅	
20#	BC213K	200MΔ	60n			30n	300m	5.0	2.0m	70 Δ		10p	P-PE	Si	125A	R204a	A	∅	
21#	BC213KA	200MΔ	60n			30n	300m	5.0	2.0m	300 Δ		10p	P-PE	Si	125A	R204a	A	∅	
22#	BC213KB	200MΔ	60n			30n	300m	5.0	2.0m	400 Δ		10p	P-PE	Si	125A	R204a	A	∅	
23#	BC213KC	200MΔ	60n			30n	300m	5.0	2.0m	600 Δ		10p	P-PE	Si	125A	R204a	A	∅	
24#	BC213L	200MΔ	60n			30n	300m	5.0	2.0m	80 #Δ		10p	PE	Si	150S	T092	B	∅	
25#	BC213LA	200MΔ	60n			30n	300m	5.0	2.0m	100 Δ		10p	PE	Si	150S	T092	B	∅	
26#	BC213LB	200MΔ	60n			30n	300m	5.0	2.0m	200 Δ		10p	PE	Si	150S	T092	B	∅	
27#	BC213LC	200MΔ	60n			30n	300m	5.0	2.0m	350 Δ		10p	PE	Si	150S	T092	B	∅	
28#	BC214	200MΔ	60n			30n	300m	5.0	2.0m	140 #Δ		10p	PE	Si	150S	R203	A	∅	
29#	BC214A	200MΔ	60n			30n	300m	5.0	2.0m	140 Δ		10p	PE	Si	150S	R203	A	∅	
30#	BC214B	200MΔ	60n			30n	300m	5.0	2.0m	200 Δ		10p	PE	Si	150S	R203	A	∅	
31#	BC214C	200MΔ	60n			30n	300m	5.0	2.0m	350 Δ		10p	PE	Si	150S	R203	A	∅	
32#	BC214K	200MΔ	60n			30n	300m	5.0	2.0m	125 Δ		10p	P-PE	Si	125A	R204a	A	∅	
33#	BC214KB	200MΔ	60n			30n	300m	5.0	2.0m	400 Δ		10p	P-PE	Si	125A	R204a	A	∅	
34#	BC214KC	200MΔ	60n			30n	300m	5.0	2.0m	600 Δ		10p	P-PE	Si	125A	R204a	A	∅	
35#	BC214L	200MΔ	60n			30n	300m	5.0	2.0m	140 #Δ		10p	PE	Si	150S	T092	B	∅	
36#	BC214LA	200MΔ	60n			30n	300m	5.0	2.0m	140 Δ		10p	PE	Si	150S	T092	B	∅	
37#	BC214LB	200MΔ	60n			30n	300m	5.0	2.0m	200 Δ		10p	PE	Si	150S	T092	B	∅	
38#	BC214LC	200MΔ	60n			30n	300m	5.0	2.0m	350 Δ		10p	PE	Si	150S	T092	B	∅	
39	EN706	200MΔ	60ns			200m	200m	1.0	10m	20 #Δ	90	6.0p	N	Si	125J	T0106	A	∅	
40	2N963	250MΔ	60n			120n	150m	1.0	100m	20 Δ	20	5.0p	P	Ge	100S	T018	A	∅	
41	2N967	250MΔ	60n			120n	150m	1.0	100m	40 Δ	20	5.0p	P	Ge	100S	T018	A	∅	
42	2N3299	250MΔ	60n			150n	3.0	10	150m	120 #Δ	1.2	8.0p	N	Si	200J	T05	A	∅	
43	2N3300	250MΔ	60n			150n	3.0	10	150m	300 #Δ	1.2	8.0p	N	Si	200J	T05	A	∅	
44	2N3301	250MΔ	60n			150n	1.8	10	150m	120 #Δ	1.2	8.0p	N	Si	200J	T018	A	∅	
45	2N3302	250MΔ	60n			150n	360m	10	150m	300 #Δ	1.2	8.0p	N	Si	200J	T018	A	∅	
46	2N4437	250MΔ	60n			150n	500m	10	150m	300 #Δ	1.2	8.0p	N	Si	125J	R124	A	∅	
47#	2SA717	280MΔ	60n		130n	160n	5.0	10	50m	80	1.2	18p	P-E	Si	175S	T039	A	∅	
48	2N2319	300MΔ	60n		20n	50n	300m	30	1.0m	20 Δ		5.0p	N	Si	200S	T046	A	∅	
49#	BSX32	300MΔ	60n			60n	3.5	1.0	100m	90 #Δ		10p	N-DPE	Si	200J	T05	A	∅	
50	BSX32	300MΔ	60n			60n	3.5	1.0	10m	30 Δ	2.5	10p	NAN	Si	200J	T039	A	∅	
51#	BFR10	350MΔ	60n		150n	800m	10	150m	60 Δ		5.0p	N	PE	Si	200J	T039	A	∅	
52#	BFR11	350MΔ	60n		150n	400m	10	500	40 Δ		5.0p	N	PE	Si	200J	T018	A	∅	
53#	BFV31	350MΔ	60n			100n	150m	1.0	100m	15 Δ	20	8.0p	PPE	Si	200J	S5a	A	∅	
54#	BFV32	350MΔ	60n			100n	150m	1.0	100m	10 Δ	20	8.0p	PPE	Si	200J	S5a	A	∅	
55#	BFX29	360MΔ	60n			150n	600m	10	1.0m	90	2.6	12p	P-PE	Si	200J	T05	A	∅	
56#	BFX87	360MΔ	60n			150n	600m	10	1.0m	40 Δ	2.6	12p	P-PE	Si	200J	T05	A	∅	
57#	BFX88	360MΔ	60n			150n	600m	10	1.0m	40 Δ	2.6	12p	P-PE	Si	200J	T05	A	∅	
58	2N2894	400MΔ	60n			90n	360m	50	30m	150 #Δ		6.0p	P	Si	200J	T018	A	∅	
59	2N3209	400MΔ	60n			90n	360m	500m	30m	30 #Δ	6.0	5.0p	P-PE	Si	200J	T018	A	∅	
60	40217	400MΔ	60ns			300m	300m	1.0	10m	20 Δ		5.0p	N	Si	175	T052	A	∅	
61#	BFV81	400MΔ	60n			90n	300m	50	30m	40 #Δ		6.0p	PPE	Si	200J	W5a	B	∅	
62#	BFV81A	400MΔ	60n			75n	300m	50	30m	30 #Δ		6.0p	PPE	Si	200J	W5a	B	∅	
63#	BSV21	400MΔ	60n			75n	360m	50	30m	120 #Δ		6.0p	PPE	Si	200J	T018	A	∅	
64#	BSV37	400MΔ	60n			90n	550m	500m	30m	150 Δ	15	6.0p	P-PL	Si	175J	X156f	C	∅	
65#	BSX29	400MΔ	60n			90n	1.2	500m	30m	60 #Δ	5.0	6.0p	P-DPE	Si	200J	T018	A	∅	
66#	ZTX510	400MΔ	60n			90n	300m	500m	30m	150 #Δ	15	6.0p	P-PLT	Si	175S	X59a	F	∅	
67	2N3304	500MΔ	60n			60n	300m	.30	10m	63	10	3.5p	P	Si	200J	T018	A	∅	
68	2N4449	500MΔ	60n	9.0n	12n	8.0n	300m	.35	10m	40 #Δ		4p	N	Si	200S	T046	A	∅	
69	TP3304	500M	60n			60n	300m	.30	10m	60 Δ		3.5p	P	Si	200S	T092	A	∅	
70#	2SC916	63n				210n	2.0	1.0	400m	70	480m		N-PE	Si	175J	T08	A	∅	
71	2N4351	65n	45n	190n		300m	300m				300	5p	N	Si	200S	T072	DR	∅	
72	2N4352	65n	45n	160n		300m	300m				600	5p	N	Si	200S	T072	DR	∅	
73	3N155	65n	45n			100n	300m				600	5.0p	P	Si	175J	T072	DR	∅	
74	3N155A	65n	45n			100n	300m				400	5.0p	P	Si	175J	T072	DR	∅	
75	3N156	65n	45n			100n	300m				600	5.0p	P	Si	175J	T072	DR	∅	
76	3N156A	65n	45n			100n	300m				400	5.0p	P	Si	175J	T072	DR	∅	
77	MEM562	65n	45n			160n	650m	10	2.0m	1.0	300	3.0	N-MOS	Si	125J	T072	DR	∅	
78	2N3867	60MΔ	65n	35n	500n	100n	6.0	3.0	2.5	25 Δ	1.0	120p	P	Si	200S	T05	A	∅	
79	2N3868	60MΔ	65n	35n	500n	100n	6.0	3.0	2.5	20 Δ	1.0	120p	P	Si	200S	T05	A	∅	
80	2N6303	60MΔ	65n	35n	500n	100n	6.0	1.0	500m	35 Δ	500m	120p	P	Si	200S	T05	A	∅	
81	2N1958	100MΔ	65n	25n	45n	2.0	2.0	10	150m	40	3.0	18p	N	Si	175J	T05	A	∅	
82	2N1959	100MΔ	65n	25n	45n	2.0	2.0	10	150m	120 Δ	3.0	18p	N</						