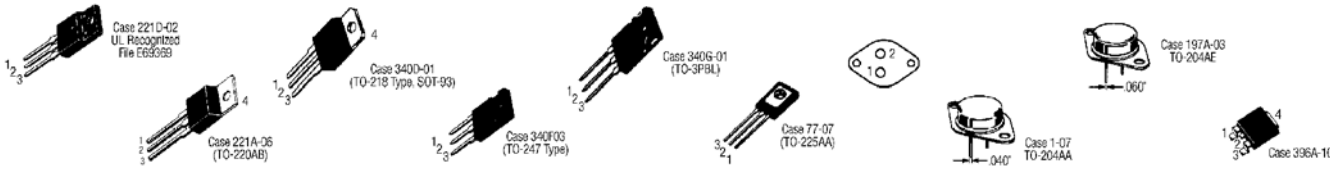


Bipolar Power Transistors



Plastic (Isolated TO-220 Type)
Pin: 1 — Base, 2 — Collector, 3 — Emitter (Style 2, Case 221D-02)

Mfr.'s Type	NPN	PNP	IcCont (A) Max.	Vce(sat) (V) Min.	Vces (V) Min.	hFE Min./Max.	Resistive Switching			fr (MHz) Min.	Po (Case) Watts @ 25°C
							@ Ic (A)	ts (µs) Max.	tr (µs) Max.		
MJF122 ²	MJF127 ²	5	100	—	2000 Min.	3.0	1.5 Typ.	1.50 Typ.	3.0	4'	28
MJF44H11	MJF45H11	10	80	—	40/100	4.0	0.5 Typ.	0.14 Typ.	5.0	40	35
MJF6388 ²	MJF6668 ²	10	100	—	3 K/20 K	3.0	1.5 Typ.	1.50 Typ.	—	20'	40

Plastic TO-3PBL
Pin: 1 — Base, 2 — Collector, 3 — Emitter, 4 — Collector (Style 2, Case 340G-01)

Mfr.'s Type	NPN	PNP	IcCont (A) Max.	Vce(sat) (V) Min.	hFE Min./Max.	Resistive Switching			fr (MHz) Min.	Po (Case) Watts @ 25°C	
						@ Ic (A)	ts (µs) Max.	tr (µs) Max.			
MJL3281A	MJL1302A	15.0	200	—	60/175	7.00	—	—	—	30.0 Typ.	200.0
MJL2119A	MJL21193	16.0	250	—	25/75	8.00	—	—	—	4.0 Min.	200.0

¹h_{FE} @ 100 Hz. ²Darlington. ³Switching tests performed with special application simulator circuit. See data sheet for details.

Plastic TO-225 Type (Formerly TO-126 Type)
Pin: 1 — Emitter, 2 — Collector, 3 — Base (Style 1, Case 77-07 (TO-225AA))
Pin: 1 — Base, 2 — Collector, 3 — Emitter (Style 3, Case 77-07 (TO-225AA))

Mfr.'s Type	NPN	PNP	IcCont (A) Max.	Vce(sat) (V) Min.	hFE Min./Max.	Resistive Switching			fr (MHz) Min.	Po (Case) Watts @ 25°C
						@ Ic (A)	ts (µs) Max.	tr (µs) Max.		
TIP29B	—	1	80	15/75	1.0	0.6 Typ.	0.30 Typ.	1.0	3.0	30
TIP29C	TIP30C	1	100	15/75	1.0	0.6 Typ.	0.30 Typ.	1.0	3.0	30
TIP47	—	1	250	30/150	0.3	2.0 Typ.	0.18 Typ.	0.3	10.0	40
TIP48	—	1	300	30/150	0.3	2.0 Typ.	0.18 Typ.	0.3	10.0	40
TIP50	MJE5731	1	350	30/150	0.3	2.0 Typ.	0.18 Typ.	0.3	10.0	40
TIP110 ²	—	1	400	30/150	0.3	2.0 Typ.	0.18 Typ.	0.3	10.0	40
TIP115 ²	—	2	60	500 Min.	2.0	1.7 Typ.	1.30 Typ.	2.0	25.0'	50
TIP117 ^{2,4}	—	2	80	500 Min.	2.0	1.7 Typ.	1.30 Typ.	2.0	25.0'	50
TIP117 ^{2,4}	—	2	100	500 Min.	2.0	1.7 Typ.	1.30 Typ.	2.0	25.0'	50
BUX85	—	2	450/1000	30	0.1	3.5	1.40	1.0	4.0	50
MJE1320	—	2	900/1800	3 Min.	1.0	4.0 Typ.	0.80 Typ.	1.0	—	80
TIP31A	—	3	60	25 Min.	1.0	0.6 Typ.	0.30 Typ.	1.0	3.0	40
TIP32A	—	3	80	25 Min.	1.0	0.6 Typ.	0.30 Typ.	1.0	3.0	40
TIP32B	—	3	100	25 Min.	1.0	0.6 Typ.	0.30 Typ.	1.0	3.0	40
TIP32C	—	3	100	25 Min.	1.0	0.6 Typ.	0.30 Typ.	1.0	3.0	40
TIP31C ⁵	—	4	400/700	6/30	3.0	3.0	0.70	3.0	4.0	60
MJE13005	—	5	60	1 K Min.	3.0	1.5 Typ.	1.50 Typ.	3.0	4.0'	65
TIP120 ²	—	5	80	1 K Min.	3.0	1.5 Typ.	1.50 Typ.	3.0	4.0'	65
TIP121 ²	—	5	80	1 K Min.	3.0	1.5 Typ.	1.50 Typ.	3.0	4.0'	65
TIP122 ^{2,4}	—	5	100	1 K Min.	3.0	1.5 Typ.	1.50 Typ.	4.0	4.0'	75
MJE18204	—	5	450/1000	14/36	1.0	3.0	0.50	2.5	12.0	100
TIP41C	—	6	60	15/75	3.0	0.4 Typ.	0.15 Typ.	3.0	3.0	65
TIP42C	—	6	100	15/75	3.0	0.4 Typ.	0.15 Typ.	3.0	3.0	65
2N6292	2N6109	7	50	30/150	2.5	0.4 Typ.	0.15 Typ.	3.0	4.0	40
2N6043 ²	2N6107	7	70	30/150	2.5	0.4 Typ.	0.15 Typ.	3.0	4.0	40
TIP100 ²	2N6040 ²	8	80	1 K/10 K	4.0	1.5 Typ.	1.50 Typ.	3.0	4.0'	75
TIP101 ²	TIP105 ²	8	60	1 K/20 K	3.0	1.5 Typ.	1.50 Typ.	3.0	4.0'	80
TIP101 ²	TIP106 ²	8	80	1 K/20 K	3.0	1.5 Typ.	1.50 Typ.	3.0	4.0'	75
2N6045 ²	2N6042 ²	8	100	1 K/10 K	3.0	1.5 Typ.	1.50 Typ.	3.0	4.0'	75
TIP102 ²	TIP107 ²	8	100	1 K/20 K	3.0	1.5 Typ.	1.50 Typ.	3.0	4.0'	80
MJE15028	MJE15029	8	120	20 Min.	4.0	—	—	—	—	50
MJE15030	MJE15031	8	150	20 Min.	4.0	—	—	—	—	50
MJE5740 ²	—	8	300/600	200 Min.	4.0	8.0 Typ.	2.00 Typ.	6.0	4.0	80
—	—	8	300/600	15 Min.	2.0	2.0	0.50	4.0	—	80
—	—	8	350	15 Min.	2.0	2.0	0.50	4.0	—	80
MJE5742 ²	—	8	400/700	200 Min.	4.0	8.0 Typ.	2.00 Typ.	6.0	12.0 Typ.	80
MJE13007 ²	—	8	400/700	5/30	5.0	3.0	0.70	5.0	12.0 Typ.	80
—	—	8	400/700	15 Min.	2.0	2.0	0.50	4.0	12.0 Typ.	80
D44H8	D45H8	10	60	40 Min.	4.0	—	—	—	—	50
MJE3055T	MJE2955T	10	60	20/70	4.0	—	—	—	—	75
2N6387 ²	2N6667 ²	10	60	1K/20 K	5.0	—	—	—	20.0'	65
D44H11 ¹	D45H11 ¹	10	80	40 Min.	4.0	0.5 Typ.	0.14 Typ.	5.0	50.0 Typ.	50
2N6487	—	15	60	20/150	5.0	0.6 Typ.	0.30 Typ.	5.0	5.0	75
2N6488	2N6491	15	80	20/150	5.0	0.6 Typ.	0.30 Typ.	5.0	5.0	75
D44VH10	D45VH10	15	80	20 Min.	4.0	0.5	0.09	8.0	50.0 Typ.	83

Mfr.'s Type	NPN	PNP	IcCont (A) Max.	Vce(sat) (V) Min.	hFE Min./Max.	Resistive Switching			fr (MHz) Min.	Po (Case) Watts @ 25°C	
						@ Ic (A)	ts (µs) Max.	tr (µs) Max.			
MJE3439	—	0.3	350	40/160	0.02	—	—	—	—	15.0	15.0
MJE344	—	0.5	200	30/300	0.05	—	—	—	—	15.0	20.8
MJE340 ³	MJE										