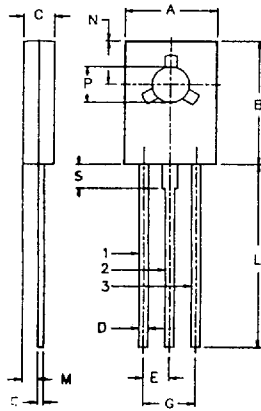
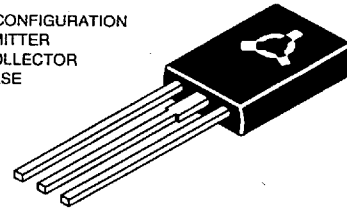


TO-126 Plastic Package Transistors

PIN CONFIGURATION
 1. EMITTER
 2. COLLECTOR
 3. BASE



DIM	MIN.	MAX.
A	7.4	7.8
B	10.5	10.8
C	2.4	2.7
D	0.7	0.9
E	2.25	TYP.
F	0.49	0.75
G	4.5	TYP.
L	15.7	TYP.
M	1.27	TYP.
N	3.75	TYP.
P	3.0	3.2
S	2.5	TYP.

ALL DIMENSIONS IN MM

Type No.	Polarity	Maximum Ratings				Electrical Characteristics (Ta = 25°C, Unless Otherwise Specified)											
		V _{CEO} (V) Min	V _{CE0} (V) Min	V _{ES0} (V) Min	P _D (W) @Tc=25°C	I _C (A)	I _{CBO} (μA) Max	V _{CB} (V)	h _{FE}	I _C & V _{CE} (A, V)	V _{CE(SAT)} (V) Max	I _C (A)	C _{ob} (pF) Typ	f _t (MHz) Min	I _C (A)		
2SA715	PNP	35	35	5	10.0	2.50	20.00	35	60	320.00	0.50	2.0	1.0	2.0	NS	160.0 [†]	0.2
2SA1220	PNP	120	120	5	20.0	1.20	1.00	120	60	320.00	0.30	5.0	0.7	1.0	26.0	175.0 [†]	0.2
2SA1220A	PNP	160	160	5	20.0	1.20	1.00	120	60	320.00	0.30	5.0	0.7	1.0	26.0	175.0 [†]	0.2
2SB744	PNP	70	45	5	10.0	3.00	1.00	45	60	320.00	0.50	5.0	2.0	1.5	60.0	45.0 [†]	0.1
2SB744A	PNP	70	60	5	10.0	3.00	1.00	45	60	320.00	0.50	5.0	2.0	1.5	60.0	45.0 [†]	0.1
2SB772	PNP	30	40	5	10.0	3.00	1.00	30	60	400.00	1.00	2.0	0.5	2.0	55.0	80.0 [†]	0.1
2SB1065	PNP	60	50	5	10.0	3.00	1.00	40	56	390.00	0.50	3.0	1.0	2.0	50.0	70.0 [†]	0.5
2SB1086	PNP	120	120	5	10.0	1.50	1.00	100	56	390.00	0.10	5.0	2.0	1.0	30.0	50.0 [†]	0.1
2SC1162	NPN	35	35	5	10.0	2.50	20.00	35	60	320.00	0.50	2.0	1.0	2.0	NS	180.0 [†]	0.2
2SC2371	NPN	300	300	7	10.0	0.10	0.10	200	40	250.00	0.01	10.0	1.5	0.03	3.0	50.0	0.01
2SC2611	NPN	300	300	5	1.25	0.10	1.00 ^{##}	250	30	200.00	0.02	20.0	1.5	0.02	4.0 [#]	50.0	0.02
2SC2688	NPN	300	300	5	10.0	0.20	0.10	200	40	250.00	0.01	10.0	1.5	0.05	3.0 [#]	50.0	0.01
2SC2690	NPN	120	120	5	20.0	1.20	1.00	120	60	320.00	0.30	5.0	0.7	1.0	19.0	155.0 [†]	0.2
2SC2690A	NPN	160	160	5	20.0	1.20	1.00	120	60	320.00	0.30	5.0	0.7	1.0	19.0 [†]	155.0 [†]	0.2
2SC3619	NPN	300	300	NS	1.5 [#]	0.10	1.00	240	30	200.00	0.02	10.0	1.0	0.01	3.0 [#]	50.0	0.02
2SD794	NPN	70	45	5	10.0	3.00	1.00	45	60	320.00	0.50	5.0	2.0	1.5	40.0	60.0 [†]	0.1
2SD794A	NPN	70	60	5	10.0	3.00	1.00	45	60	320.00	0.50	5.0	2.0	1.5	40.0	60.0 [†]	0.1
2SD882	NPN	40	30	5	10.0	3.00	1.00	30	60	400.00	1.00	2.0	0.5	2.0	45.0	90.0 [†]	0.1
2SD1506	NPN	60	50	5	10.0	3.00	1.00	40	56	390.00	0.5	3.0	1.0	2.0	40.0	90.0 [†]	0.5
2SD1563	NPN	120	120	5	10.0	1.50	1.00	100	56	390.00	0.1	5.0	2.0	1.0	20.0	80.0 [†]	0.1
BD135	NPN	45	45	5	12.5	1.50	0.10	30	40	250.00	0.15	2.0	0.5	0.5	NS	NS	NS
BD136	PNP	45	45	5	12.5	1.50	0.10	30	40	250.00	0.15	2.0	0.5	0.5	NS	NS	NS
BD137	NPN	60	60	5	12.5	1.50	0.10	30	40	250.00	0.15	2.0	0.5	0.5	NS	NS	NS
BD138	PNP	60	60	5	12.5	1.50	0.10	30	40	250.00	0.15	2.0	0.5	0.5	NS	NS	NS
BD139	NPN	100	80	5	12.5	1.50	0.10	30	40	250.00	0.15	2.0	0.5	0.5	NS	NS	NS
BD140	PNP	100	80	5	12.5	1.50	0.10	30	40	250.00	0.15	2.0	0.5	0.5	NS	NS	NS
BD157	NPN	275	250	5	20.0	0.50	100.00	275	30	240.00	0.05	10.0	NS	NS	NS	NS	NS
BD158	NPN	325	300	5	20.0	0.50	100.00	325	30	240.00	0.05	10.0	NS	NS	NS	NS	NS
BD165	NPN	45	45	5	20.0	1.50	100.00	45	40	NS	0.15	2.0	0.5	0.5	NS	6.0	0.5
BD166	PNP	45	45	5	20.0	1.50	100.00	45	40	NS	0.15	2.0	0.5	0.5	NS	6.0	0.5
BD167	NPN	60	60	5	20.0	1.50	100.00	60	40	NS	0.15	2.0	0.5	0.5	NS	6.0	0.5
BD168	PNP	60	60	5	20.0	1.50	100.00	60	40	NS	0.15	2.0	0.5	0.5	NS	6.0	0.5
BD169	NPN	80	80	5	20.0	1.5	100.00	80	40	NS	0.15	2.0	0.5	0.5	NS	6.0	0.5
BD170	PNP	80	80	5	20.0	1.50	100.00	80	40	NS	0.15	2.0	0.5	0.5	NS	6.0	0.5

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TO-126 Plastic Package Transistors

Maximum Ratings					Electrical Characteristics (Ta = 25°C, Unless Otherwise Specified)												
Type No.	Polarity	V _{CBO}	V _{CEO}	V _{EBO}	P _D (W) @Tc=25°C	I _C (A)	I _{CBO}	V _{CB} (V)	h _{FE}	I _C & (A)	V _{CE} (V)	V _{CE(SAT)} (V) Max	I _C (A)	C _{ob} (pF) Typ	f _t (MHz) Min	I _C (A)	
		(V) Min	(V) Min	(V) Min			(μA) Max										Min
BD175	NPN	45	45	5	30.0	3.00	100.00	45	40	NS	0.15	2.0	0.8	1.0	NS	3.0	0.25
BD176	PNP	45	45	5	30.0	3.00	100.00	45	40	NS	0.15	2.0	0.8	1.0	NS	3.0	0.25
BD177	NPN	60	60	5	30.0	3.00	100.00	60	40	NS	0.15	2.0	0.8	1.0	NS	3.0	0.25
BD178	PNP	60	60	5	30.0	3.00	100.00	60	40	NS	0.15	2.0	0.8	1.0	NS	3.0	0.25
BD179	NPN	80	80	5	30.0	3.00	100.00	80	40	NS	0.15	2.0	0.8	1.0	NS	3.0	0.25
BD180	PNP	80	80	5	30.0	3.00	100.00	80	40	NS	0.15	2.0	0.8	1.0	NS	3.0	0.25
BD233	NPN	45	45	5	25.0	2.00	100.00	45	40	NS	0.15	2.0	0.6	1.0	NS	3.0	0.25
BD234	PNP	45	45	5	25.0	2.00	100.00	45	40	NS	0.15	2.0	0.6	1.0	NS	3.0	0.25
BD235	NPN	60	60	5	25.0	2.00	100.00	60	40	NS	0.15	2.0	0.6	1.0	NS	3.0	0.25
BD236	PNP	60	60	5	25.0	2.00	100.00	60	40	NS	0.15	2.0	0.6	1.0	NS	3.0	0.25
BD237	NPN	100	80	5	25.0	2.00	100.00	100	40	NS	0.15	2.0	0.6	1.0	NS	3.0	0.25
BD238	PNP	100	80	5	25.0	2.00	100.00	100	40	NS	0.15	2.0	0.6	1.0	NS	3.0	0.25
BD433	NPN	22	22	5	36.0	4.00	100.00	22	40	NS	0.01	5.0	0.5	2.0	NS	3.0	0.25
BD434	PNP	22	22	5	36.0	4.00	100.00	22	40	NS	0.01	5.0	0.5	2.0	NS	3.0	0.25
BD435	NPN	32	32	5	36.0	4.00	100.00	32	40	NS	0.01	5.0	0.5	2.0	NS	3.0	0.25
BD436	PNP	32	32	5	36.0	4.00	100.00	32	40	NS	0.01	5.0	0.5	2.0	NS	3.0	0.25
BD437	NPN	45	45	5	36.0	4.00	100.00	45	30	NS	0.01	5.0	0.6	2.0	NS	3.0	0.25
BD438	PNP	45	45	5	36.0	4.00	100.00	45	30	NS	0.01	5.0	0.6	2.0	NS	3.0	0.25
BD439	NPN	60	60	5	36.0	4.00	100.00	60	20	NS	0.01	5.0	0.8	2.0	NS	3.0	0.25
BD440	PNP	60	60	5	36.0	4.00	100.00	60	20	NS	0.01	5.0	0.8	2.0	NS	3.0	0.25
BD441	NPN	80	80	5	36.0	4.00	100.00	80	15	NS	0.01	5.0	0.8	2.0	NS	3.0	0.25
BD442	PNP	80	80	5	36.0	4.00	100.00	80	15	NS	0.01	5.0	0.8	2.0	NS	3.0	0.25
BF457	NPN	160	160	5	10.0*	0.10	0.05	100	25	NS	0.03	10.0	1.0	0.03	5.5*	90.0	0.015
BF458	NPN	250	250	5	10.0*	0.10	0.05	200	25	NS	0.03	10.0	1.0	0.03	5.5*	90.0	0.015
BF459	NPN	300	300	5	10.0*	0.10	0.05	250	25	NS	0.03	10.0	1.0	0.03	5.5*	90.0	0.015
BF469	NPN	250	250	5	2.0*	0.03	0.10	200	50	NS	0.025	20.0	NS	NS	1.8*	60.0	0.01
BF470	PNP	250	250	5	2.0*	0.03	0.10	200	50	NS	0.025	20.0	NS	NS	1.8*	60.0	0.01
BF471	NPN	300	300	5	2.0*	0.03	0.05†	250	50	NS	0.025	20.0	NS	NS	1.8*	60.0	0.01
BF472	PNP	300	300	5	2.0*	0.03	0.05†	250	50	NS	0.025	20.0	NS	NS	1.8*	60.0	0.01
MJE170	PNP	60	40	7	12.5	3.00	0.10	60	50	250.00	0.10	1.0	0.3	0.5	60.0*	50.0	0.1
MJE171	PNP	80	60	7	12.5	3.00	0.10	80	50	250.00	0.10	1.0	0.3	0.5	60.0*	50.0	0.1
MJE172	PNP	100	80	7	12.5	3.00	0.10	100	50	250.00	0.10	1.0	0.3	0.5	60.0*	50.0	0.1
MJE180	NPN	60	40	7	12.5	3.00	0.10	60	50	250.00	0.10	1.0	0.3	0.5	40.0*	50.0	0.1
MJE181	NPN	80	60	7	12.5	3.00	0.10	80	50	250.00	0.10	1.0	0.3	0.5	40.0*	50.0	0.1
MJE182	NPN	100	80	7	12.5	3.00	0.10	100	50	250.00	0.10	1.0	0.3	0.5	40.0*	50.0	0.1
MJE270	NPN	100	100	5	15.0	2.00	300.00	100	500	NS	0.02	3.0	2.0	0.02	NS	6.0	0.05
MJE271	PNP	100	100	5	15.0	2.00	300.00	100	500	NS	0.02	3.0	2.0	0.02	NS	6.0	0.05
MJE340	NPN	NS	300	3	20.0	0.50	100.00	300	30	240.00	0.05	10.0	NS	NS	NS	NS	NS
MJE350	PNP	NS	300	3	20.0	0.50	100.00	300	30	240.00	0.05	10.0	NS	NS	NS	NS	NS
MJE370	PNP	30	30	4	25.0	3.00	100.00	30	25	NS	1.00	1.0	NS	NS	NS	NS	NS
MJE520	NPN	30	30	4	25.0	3.00	100.00	30	25	NS	1.00	1.0	NS	NS	NS	NS	NS

* Tc=45°C NS=Not Specified #=C_{ob} Max \$=C_{re} Max †=ft Typ ^=Tc=110°C †=I_{CER} @ T_A=25°C ##=I_{CEO} ⊗ under development

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