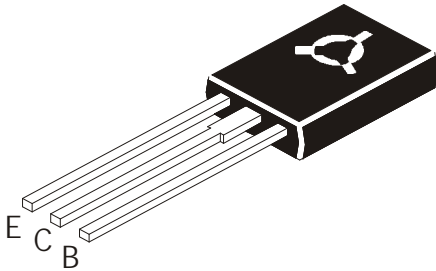


EPITAXIAL SILICON POWER TRANSISTORS



BD175	BD176
BD177	BD178
BD179	BD180
NPN	PNP

**TO126
Plastic Package**

Intended for use in Medium Power Linear Switching Applications

ABSOLUTE MAXIMUM RATINGS

DESCRIPTION	SYMBOL	BD175 BD176	BD177 BD178	BD179 BD180	UNIT
Collector -Emitter Voltage	V_{CEO}	45	60	80	V
Collector -Base Voltage	V_{CBO}	45	60	80	V
Emitter Base Voltage	V_{EBO}	5.0			V
Collector Current	I_C	3.0			A
Collector Peak Current	I_{CM}	7.0			A
Power Dissipation @ $T_a=25^\circ\text{C}$ Derate above 25°C	P_D	1.25			W
		10			mW/ $^\circ\text{C}$
Power Dissipation @ $T_c=25^\circ\text{C}$	P_D	30			W
Operating and Storage Junction Temperature Range	T_j, T_{stg}	- 65 to +150			$^\circ\text{C}$

THERMAL CHARACTERISTICS

Junction to Ambient in free air	$R_{th(j-a)}$	100	$^\circ\text{C/W}$
Junction to Case	$R_{th(j-c)}$	4.16	$^\circ\text{C/W}$

ELECTRICAL CHARACTERISTICS ($T_c=25^\circ\text{C}$ unless specified otherwise)

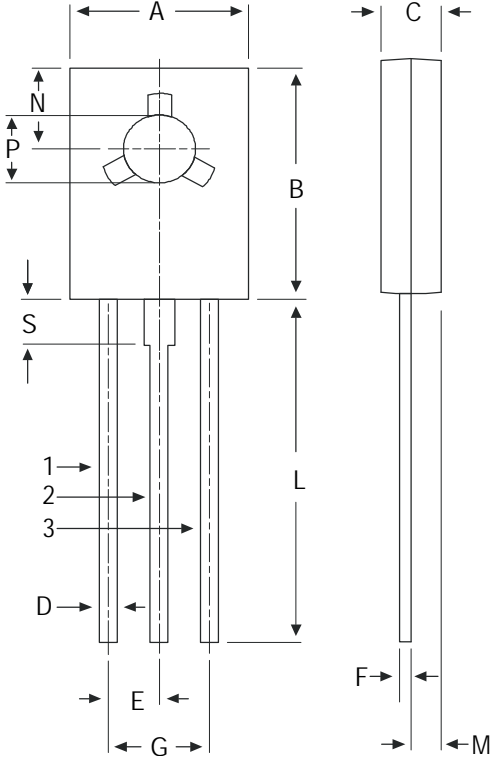
DESCRIPTION	SYMBOL	TEST CONDITION		MIN	MAX	UNIT	
Collector Cut off Current	I_{CBO}	$V_{CB}=45\text{V}, I_E=0$	BD175/76		100	μA	
		$V_{CB}=60\text{V}, I_E=0$	BD177/78		100	μA	
		$V_{CB}=80\text{V}, I_E=0$	BD179/80		100	μA	
Emitter Cut off Current	I_{EBO}	$V_{EB}=5\text{V}, I_C=0$			1.0	mA	
Collector Emitter Sustaining Voltage	$*V_{CEO(sus)}$	$I_C=100\text{mA}, I_B=0$	BD175/76	45		V	
			BD177/78	60		V	
			BD179/80	80		V	
Collector Emitter Saturation Voltage	$*V_{CE(sat)}$	$I_C=1\text{A}, I_B=0.1\text{A}$			0.8	V	
Base Emitter on Voltage	$*V_{BE(on)}$	$I_C=1\text{A}, V_{CE}=2\text{V}$			1.3	V	
DC Current Gain	$*h_{FE}$	$I_C=150\text{mA}, V_{CE}=2\text{V}$ $I_C=1\text{A}, V_{CE}=2\text{V}$		40			
				15			
		$*h_{FE}$ Group	$I_C=150\text{mA}, V_{CE}=2\text{V}$	- 6	40	100	
				- 10	63	160	
		Only BD175/76/79	- 16	100	250		
Transition Frequency	f_T	$I_C=250\text{mA}, V_{CE}=10\text{V}$		3.0		MHz	

*Pulse test:- Pulse width=300ms, Duty cycle=1.5%

BD175	BD176
BD177	BD178
BD179	BD180
NPN	PNP

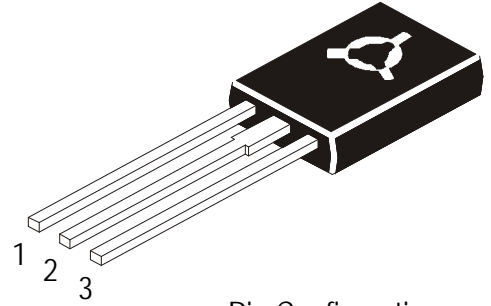
TO126
Plastic Package

TO-126 (SOT-32) Plastic Package



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.	

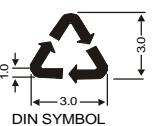
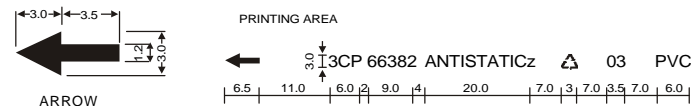
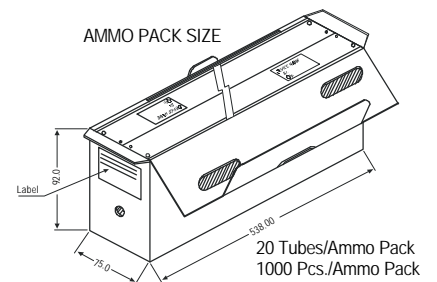
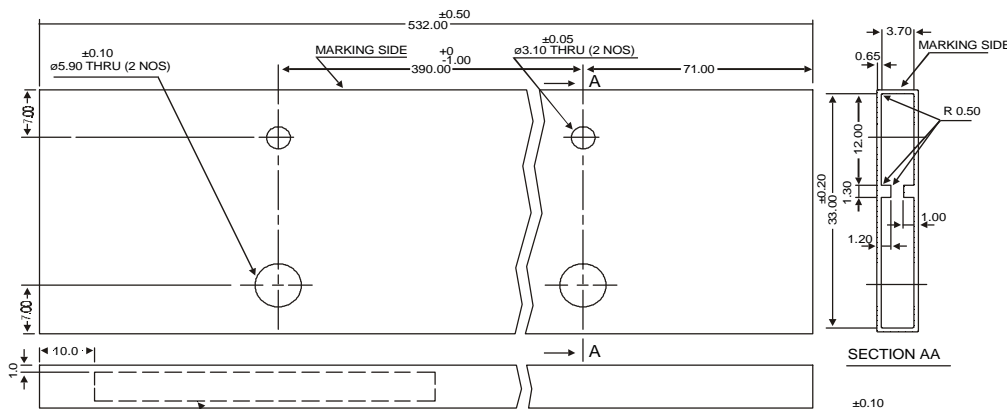
All dimensions in mm.



Pin Configuration

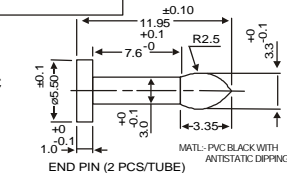
1. Emitter
2. Collector
3. Base

TO-126 TUBE PACKING



GENERAL TOLERANCE						
0 mm	0.01 mm	30.01 mm	120.01 mm	ABOVE 120.01 mm	ABOVE 315 mm	ANGULAR
±0.1	±0.2	±0.3	±0.5	±0.8	±0.8	±0° 30"

All dimensions in mm



- Notes:**
1. All print in black.
 2. All text in Helvetica medium font.

Packing Detail

PACKAGE	STANDARD PACK		INNER CARTON BOX		OUTER CARTON BOX		
	Details	Net Weight/Qty	Size	Qty	Size	Qty	Gr Wt
TO-126 Bulk	500 pcs/polybag	340 gm/500 pcs	3" x 7.5" x 7.5"	2K	17" x 15" x 13.5"	32K	31 kgs
TO-126 Tube	50 pcs/tube	73 gm/50 pcs	3" x 3.7" x 21.5"	1K	19" x 19" x 19"	10K	15 kgs

Notes

BD175	BD176
BD177	BD178
BD179	BD180
NPN	PNP

TO126
Plastic Package

Disclaimer

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