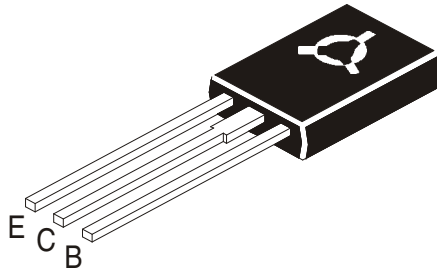


## EPITAXIAL SILICON POWER TRANSISTORS



<b>BD175</b>	<b>BD176</b>
<b>BD177</b>	<b>BD178</b>
<b>BD179</b>	<b>BD180</b>
<b>NPN</b>	<b>PNP</b>

**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 $25^\circ\text{C}$	$P_D$	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	$^\circ\text{C}/\text{W}$
Junction to Case	$R_{th(j-c)}$	4.16	$^\circ\text{C}/\text{W}$

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

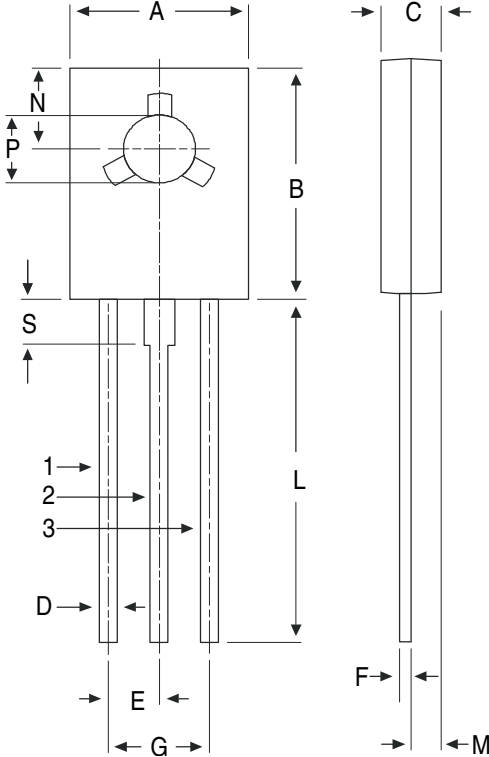
DESCRIPTION	SYMBOL	TEST CONDITION		MIN	MAX	UNIT		
Collector Cut off Current	$I_{CBO}$	$V_{CB}=45\text{V}, I_E=0$	<b>BD175/76</b>		100	$\mu\text{A}$		
		$V_{CB}=60\text{V}, I_E=0$	<b>BD177/78</b>		100	$\mu\text{A}$		
		$V_{CB}=80\text{V}, I_E=0$	<b>BD179/80</b>		100	$\mu\text{A}$		
Emitter Cut off Current	$I_{EBO}$	$V_{EB}=5\text{V}, I_C=0$			1.0	mA		
Collector Emitter Sustaining Voltage	$*V_{CEO(sus)}$	$I_C=100\text{mA}, I_B=0$	<b>BD175/76</b>	45		V		
			<b>BD177/78</b>	60		V		
			<b>BD179/80</b>	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	
		<b>Only BD175/76/79</b>	- 16	100	250			
Transition Frequency	$f_T$	$I_C=250\text{mA}, V_{CE}=10\text{V}$		3.0		MHz		

\*Pulse test:- Pulse width=300 $\mu\text{s}$ , Duty cycle=1.5%

BD175	BD176
BD177	BD178
BD179	BD180
NPN	PNP

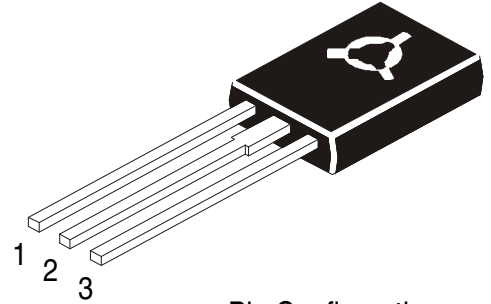
**TO126  
Plastic Package**

**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.	

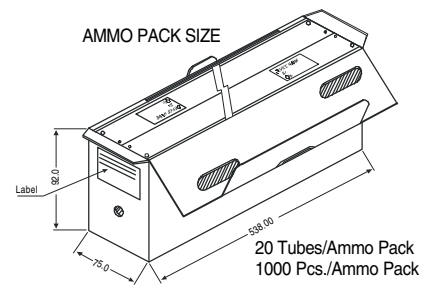
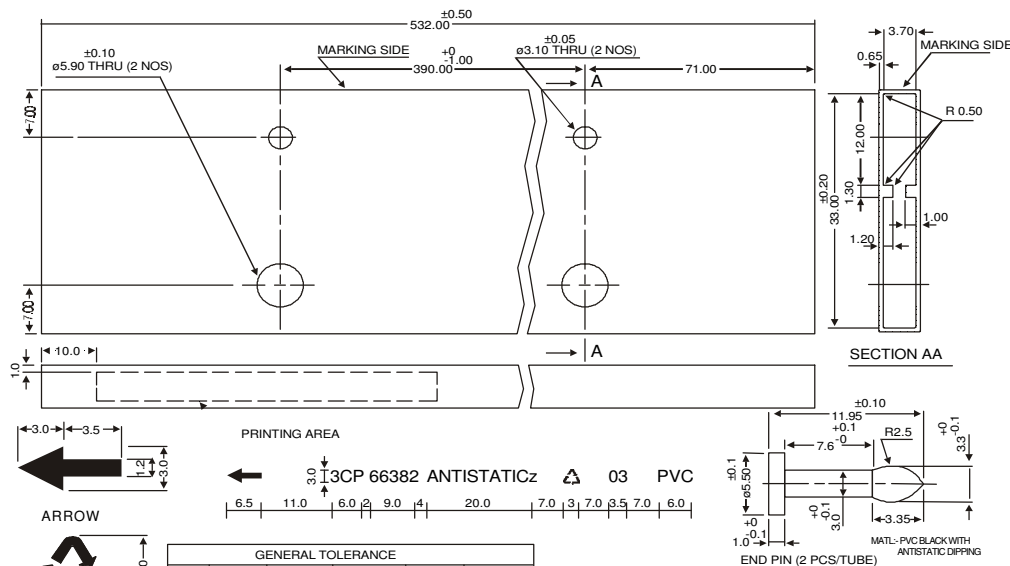
All dimensions in mm.



Pin Configuration

1. Emitter
2. Collector
3. Base

**TO-126 TUBE PACKING**



- Notes:**
1. All print in black.
  2. All text in Helvetia 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

<b>BD175</b>	<b>BD176</b>
<b>BD177</b>	<b>BD178</b>
<b>BD179</b>	<b>BD180</b>
<b>NPN</b>	<b>PNP</b>

**TO126**  
**Plastic Package**

### Disclaimer

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CDIL is a registered Trademark of  
Continental Device India Limited

C-120 Naraina Industrial Area, New Delhi 110 028, India.

Telephone + 91-11-2579 6150 Fax + 91-11-2579 9569, 2579 5290

e-mail sales@cdil.com www.cdil.com www.cdilsemi.com