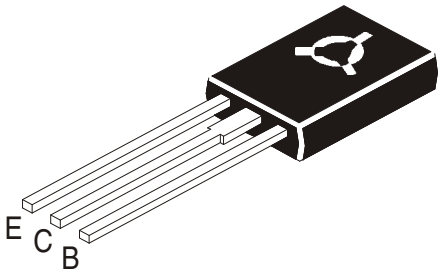
Continental Device India Limited

An ISO/TS 16949, ISO 9001 and ISO 14001 Certified Company

EPITAXIAL SILICON POWER TRANSISTORS



BD233 BD234
BD235 BD236
BD237 BD238
NPN PNP

TO126
Plastic Package

Intended for use in Medium Power Linear Switching Applications

ABSOLUTE MAXIMUM RATINGS

DESCRIPTION	SYMBOL	BD233 BD234	BD235 BD236	BD237 BD238	UNIT
Collector Base Voltage	V_{CBO}	45	60	100	V
Collector Emitter Voltage	V_{CEO}	45	60	80	V
Collector Emitter Voltage (R_{BE}=1KΩ)	V_{CER}	45	60	100	V
Emitter Base Voltage	V_{EBO}	5.0			V
Collector Current	I_C	2.0			A
Collector Peak Current	I_{CM}	6.0			A
Total Dissipation @ $T_{C=}$25ºC	P_D	25			W
Total Dissipation @ $T_{a=}$25ºC Derate above 25ºC	P_D	1.25 10			W mW/ ºC
Operating and Storage Junction Temperature Range	T_j, T_{stg}	- 65 to +150			ºC

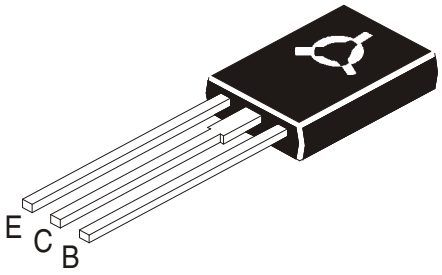
THERMAL CHARACTERISTICS

Junction to Case	$R_{th\ (j-c)}$	5.0	ºC/W
Junction to Ambient in free air	$R_{th\ (j-a)}$	100	ºC/W

ELECTRICAL CHARACTERISTICS (T_C=25ºC unless specified otherwise)

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Collector Cut off Current	I_{CBO}	V_{CB}=45V, I_E=0 **BD233/234**			100	µA
		V_{CB}=60V, I_E=0 **BD235/236**			100	µA
		V_{CB}=100V, I_E=0 **BD237/238**			100	µA
		T_C = 150ºC				
		V_{CB}=45V, I_E=0 **BD233/234**			2.0	mA
		V_{CB}=60V, I_E=0 **BD235/236**			2.0	mA
		V_{CB}=100V, I_E=0 **BD237/238**			2.0	mA
Emitter Cut off Current	I_{EBO}	V_{EB}=5V, I_C=0			1.0	mA
Collector Emitter Sustaining Voltage	*$V_{CEO\ (sus)}$	I_C=0.1A, I_B=0 **BD233/234**	45			V
		BD235/236	60			V
		BD237/238	80			V
Collector Emitter Saturation Voltage	*$V_{CE\ (sat)}$	I_C=1.0A, I_B=0.1A			0.6	V
Base Emitter Voltage	*$V_{BE\ (on)}$	I_C=1.0A, V_{CE}=2V			1.3	V

EPITAXIAL SILICON POWER TRANSISTORS



BD233 | BD234
BD235 | BD236
BD237 | BD238
NPN | PNP

TO126
Plastic Package

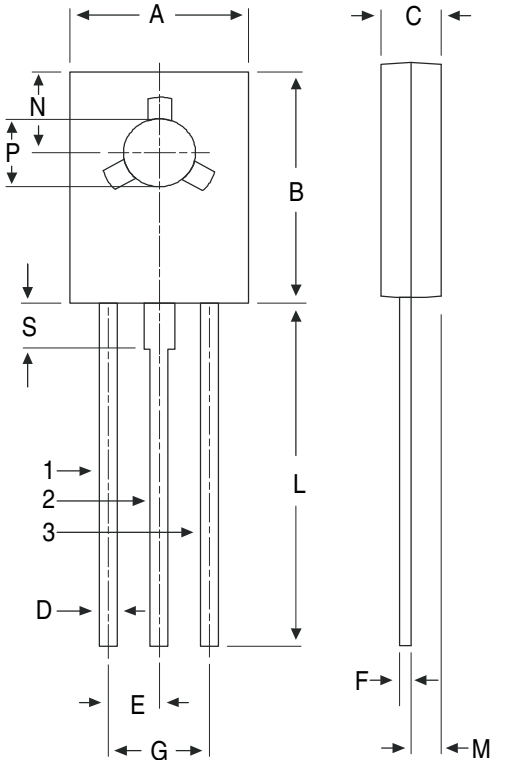
ELECTRICAL CHARACTERISTICS (T_C=25ºC unless specified otherwise)

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
DC Current Gain	*h_{FE}	I_C=150mA, V_{CE}=2V I_C=1.0A, V_{CE}=2V	40 25			
Current Gain Bandwidth Product	f_T	I_C=250mA, V_{CE}=10V	3			MHz
***h_{FE1} / h_{FE2}**	Matched Pairs	I_C=150mA, V_{CE}=2V		1.6		

***Pulsed Pulse Duration=300μs, Duty Cycle=1.5%**

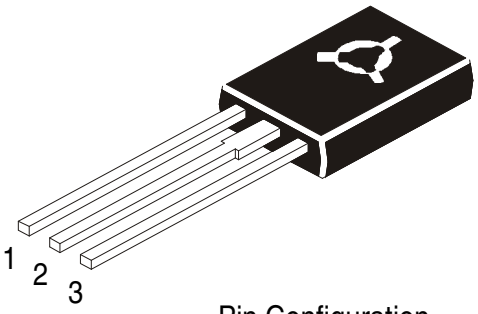
TO126
Plastic Package

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.	

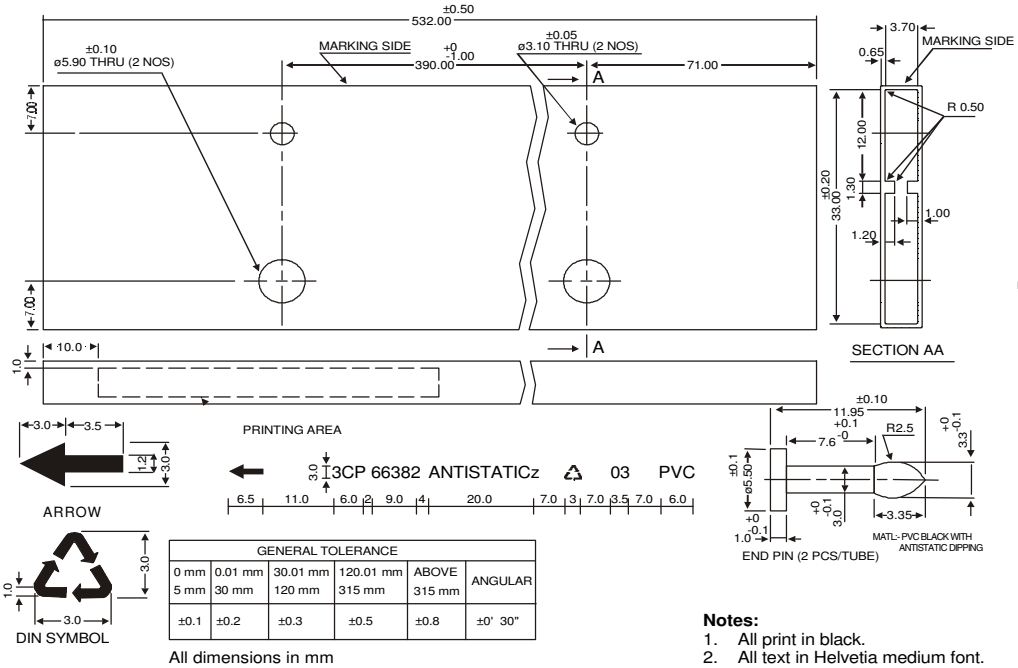
All dimensions in mm.



Pin Configuration

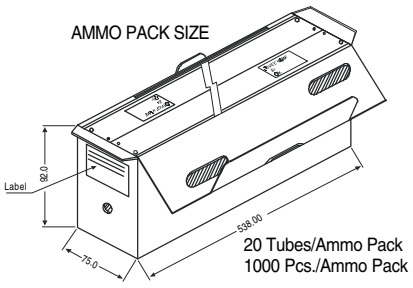
1. Emitter
2. Collector
3. Base

TO-126 TUBE PACKING



GENERAL TOLERANCE					
0 mm 5 mm	0.01 mm 30 mm	30.01 mm 120 mm	120.01 mm 315 mm	ABOVE 315 mm	ANGULAR
±0.1	±0.2	±0.3	±0.5	±0.8	±0' 30"

All dimensions in mm



20 Tubes/Ammo Pack
1000 Pcs./Ammo Pack

Notes:
1. All print in black.
2. All text in Helvetia medium font.

Packing Details

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

Disclaimer

The product information and the selection guides facilitate selection of the CDIL's Discrete Semiconductor Device(s) best suited for application in your product(s) as per your requirement. It is recommended that you completely review our Data Sheet(s) so as to confirm that the Device(s) meet functionality parameters for your application. The information furnished in the Data Sheet and on the CDIL Web Site/CD are believed to be accurate and reliable. CDIL however, does not assume responsibility for inaccuracies or incomplete information. Furthermore, CDIL does not assume liability whatsoever, arising out of the application or use of any CDIL product; neither does it convey any license under its patent rights nor rights of others. These products are not designed for use in life saving/support appliances or systems. CDIL customers selling these products (either as individual Discrete Semiconductor Devices or incorporated in their end products), in any life saving/support appliances or systems or applications do so at their own risk and CDIL will not be responsible for any damages resulting from such sale(s).
CDIL strives for continuous improvement and reserves the right to change the specifications of its products without prior notice.

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