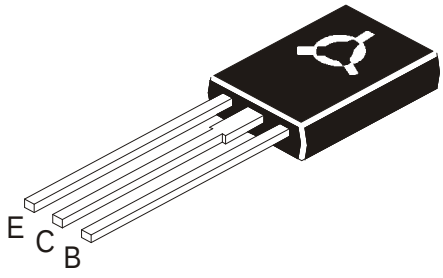
Continental Device India Limited

An ISO/TS16949 and ISO 9001 Certified Company

EPITAXIAL SILICON POWER TRANSISTORS



BD433 BD434
BD435 BD436
BD437 BD438
BD439 BD440
BD441 BD442
NPN PNP

TO126
Plastic Package

Intended for use in Medium Power Linear and Switching Applications

ABSOLUTE MAXIMUM RATINGS

DESCRIPTION	SYMBOL	BD433 BD434	BD435 BD436	BD437 BD438	BD439 BD440	BD441 BD442	UNIT
Collector Base Voltage	V_{CBO}	22	32	45	60	80	V
Collector Emitter Voltage	V_{CES}	22	32	45	60	80	V
Collector Emitter Voltage	V_{CEO}	22	32	45	60	80	V
Emitter Base Voltage	V_{EBO}	5.0					V
Collector Current	I_C	4.0					A
Collector Peak Current (t=10ms	I_{CM}	7.0					A
Base Current	I_B	1.0					A
Total Dissipation @ T_C=25ºC	P_D	36.0					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 RESISTANCE

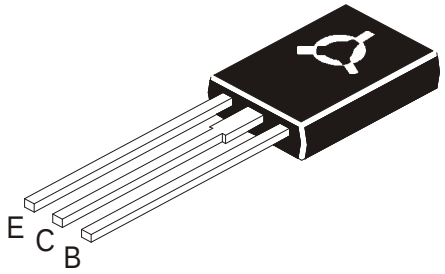
Junction to Case	$R_{th\ (j-c)}$	3.5	ºC/W
Junction to Ambient in free air	$R_{th\ (j-a)}$	100	ºC/W

ELECTRICAL CHARACTERISTICS (T_a=25ºC unless specified otherwise)

DESCRIPTION	SYMBOL	TEST CONDITION	BD433 BD434	BD435 BD436	BD437 BD438	BD439 BD440	BD441 BD442	UNIT
Collector Cut Of Current	I_{CBO}	V_{CB}=Rated V_{CBO}, I_E=0	<100	<100	<100	<100	<100	µA
Collector Cut Off Current	I_{CES}	V_{BE}=0, V_{CE}=Rated V_{CES}	<100	<100	<100	<100	<100	µA
Emitter Cut Off Current	I_{EBO}	V_{EB}=5V, I_C=0	<1.0	<1.0	<1.0	<1.0	<1.0	mA
Collector Emitter Sustaining Voltage	*$V_{CEO\ (sus)}$	I_C=100mA, I_B=0	>22	>32	>45	>60	>80	V
Collector Emitter Saturation Voltage	*$V_{CE\ (sat)}$	I_C=2.0A, I_B=0.2A	<0.5	<0.5	<0.6	<0.8	<0.8	V
Base Emitter On Voltage	*$V_{BE\ (on)}$	I_C=10mA, V_{CE}=5V **ALL**	typ 0.58					V
		I_C=2.0A, V_{CE}=1V	<1.1	<1.1	<1.2	<1.5	<1.5	V

sales@prom-elec.com / ООО ПРОМЭЛЕКТРОНИКА

EPITAXIAL SILICON POWER TRANSISTORS



BD433 | BD434
BD435 | BD436
BD437 | BD438
BD439 | BD440
BD441 | BD442
NPN | PNP

TO126
Plastic Package

ELECTRICAL CHARACTERISTICS (T_C=25ºC unless specified otherwise)

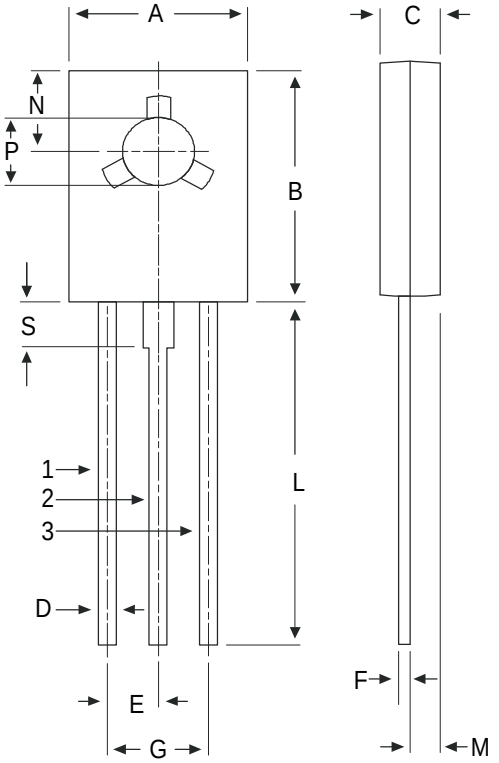
DESCRIPTION	SYMBOL	TEST CONDITION	BD433 BD434	BD435 BD436	BD437 BD438	BD439 BD440	BD441 BD442	UNIT
DC Current Gain	*h_{FE}	I_C=10mA, V_{CE}=5V	>40	>40	>30	>20	>15	
		I_C=500mA, V_{CE}=1V	>85	>85	>85	>40	>40	
		I_C=2.0A, V_{CE}=1V	>50	>50	>40	>25	>15	
***h_{FE1} / h_{FE2}**	Matched Pairs	I_C=500mA, V_{CE}=1V **ALL**	<1.4					
Current Gain Bandwidth Product	f_T	I_C=250mA, V_{CE}=1V **ALL**	>3.0					MHz

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

BD433	**BD434**
BD435	**BD436**
BD437	**BD438**
BD439	**BD440**
BD441	**BD442**
NPN	**PNP**

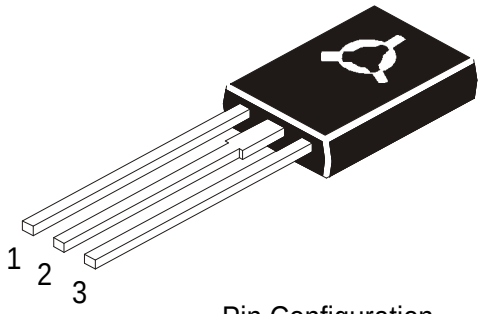
TO126
Plastic Package

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.	

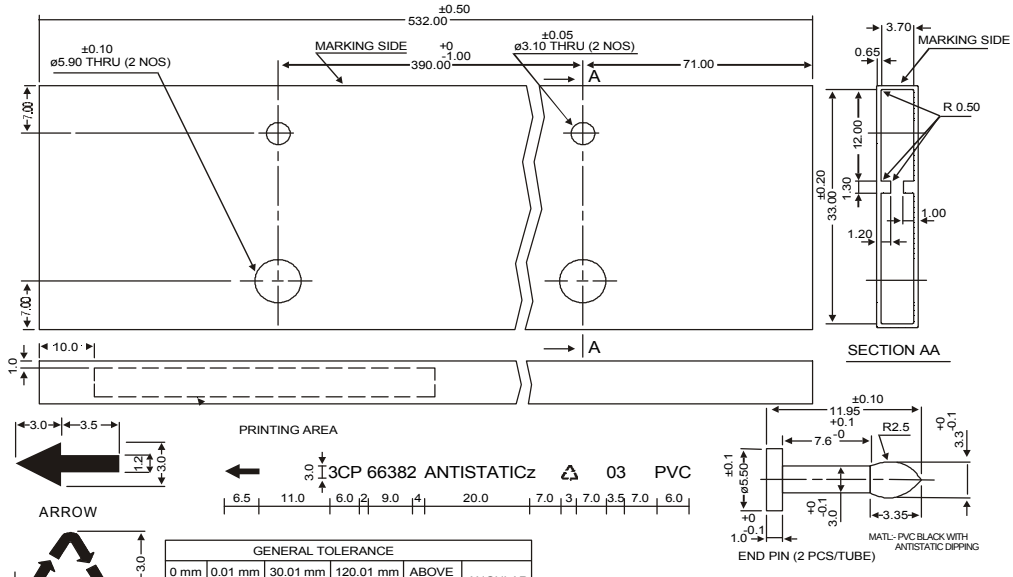
All dimensions in mm.



Pin Configuration

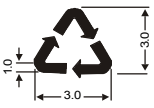
1. Emitter
2. Collector
3. Base

TO-126 TUBE PACKING

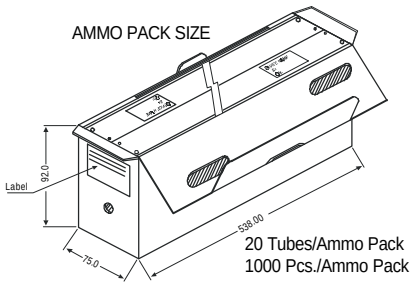


GENERAL TOLERANCE					
0 mm 5 mm	0.01 mm 30 mm	30.01 mm 120 mm	120.01 mm 315 mm	ABOVE 315 mm	ANGULAR
±0.1	±0.2	±0.3	±0.5	±0.8	±0' 30"

All dimensions in mm



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



20 Tubes/Ammo Pack
1000 Pcs./Ammo Pack

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

BD433	**BD434**
BD435	**BD436**
BD437	**BD438**
BD439	**BD440**
BD441	**BD442**
NPN	**PNP**

TO126
Plastic Package

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, 5141 1112 Fax + 91-11-2579 5290, 5141 1119
email@cdil.com www.cdilsemi.com

BD433_42Rev_1 221102E