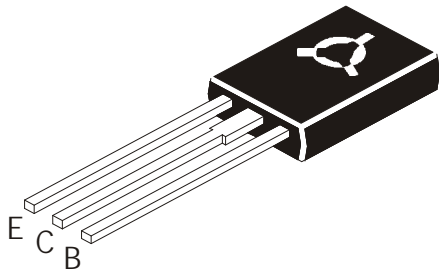


**EPITAXIAL SILICON POWER TRANSISTORS**



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 @ $T_C=25^\circ C$	$P_D$	36.0						W
Total Dissipation @ $T_a=25^\circ C$ Derate above $25^\circ C$	$P_D$	1.25 10						W mW/°C
Operating And Storage Junction Temperature Range	$T_j, T_{stg}$	- 65 to 150						°C

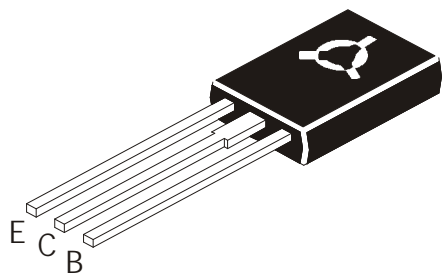
**THERMAL RESISTANCE**

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

**ELECTRICAL CHARACTERISTICS ( $T_a=25^\circ C$  unless specified otherwise)**

DESCRIPTION	SYMBOL	TEST CONDITION	BD433 BD434	BD435 BD436	BD437 BD438	BD439 BD440	BD441 BD442	UNIT
Collector Cut Off Current	$I_{CBO}$	$V_{CB}=\text{Rated } V_{CBO}, I_E=0$	<100	<100	<100	<100	<100	$\mu A$
Collector Cut Off Current	$I_{CES}$	$V_{BE}=0, V_{CE}=\text{Rated } V_{CES}$	<100	<100	<100	<100	<100	$\mu A$
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

# EPITAXIAL SILICON POWER TRANSISTORS



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

**TO126**  
**Plastic Package**

## ELECTRICAL CHARACTERISTICS (T<sub>C</sub>=25°C unless specified otherwise)

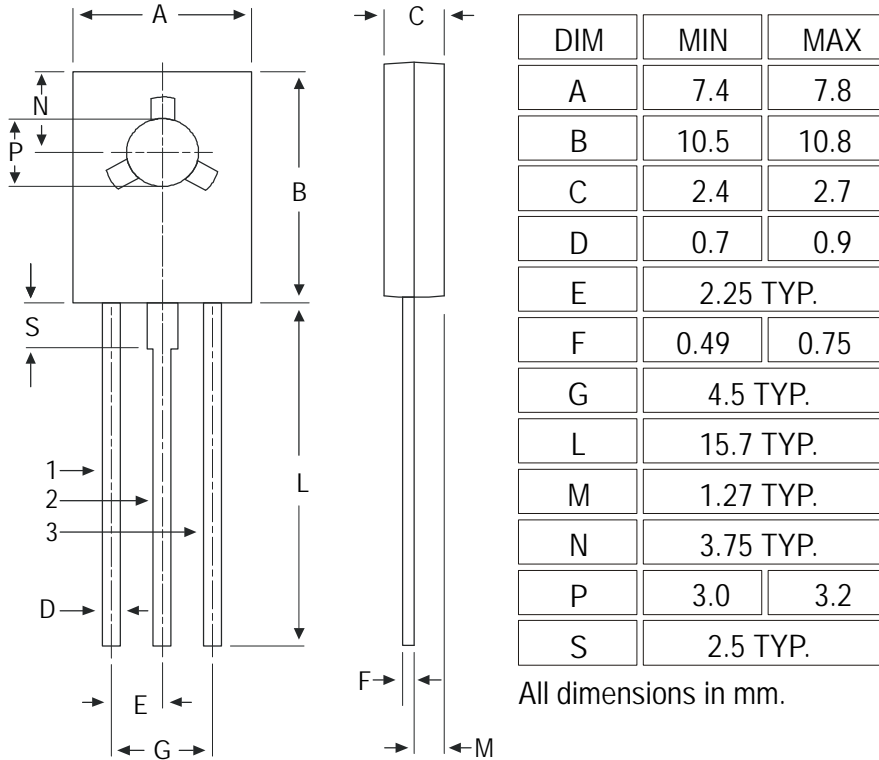
DESCRIPTION	SYMBOL	TEST CONDITION	BD433	BD435	BD437	BD439	BD441	UNIT
			BD434	BD436	BD438	BD440	BD442	
DC Current Gain	*h <sub>FE</sub>	I <sub>C</sub> =10mA, V <sub>CE</sub> =5V	>40	>40	>30	>20	>15	
		I <sub>C</sub> =500mA, V <sub>CE</sub> =1V	>85	>85	>85	>40	>40	
		I <sub>C</sub> =2.0A, V <sub>CE</sub>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

\*Pulsed Pulse Duration=300ms, Duty Cycle=1.5%

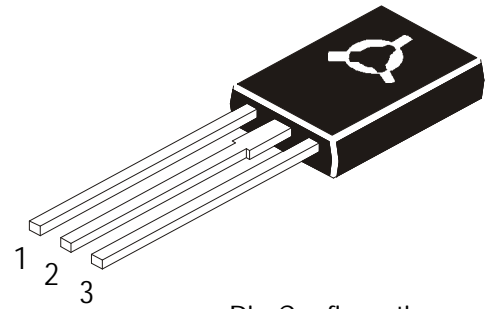
BD433	BD434
BD435	BD436
BD437	BD438
BD439	BD440
BD441	BD442
NPN	PNP

**TO126  
Plastic Package**

**TO-126 (SOT-32) Plastic Package**



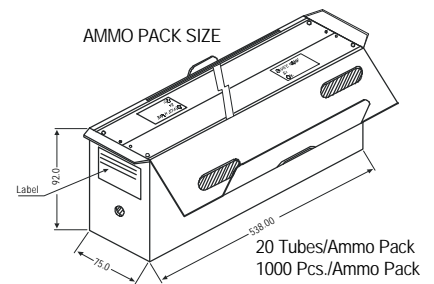
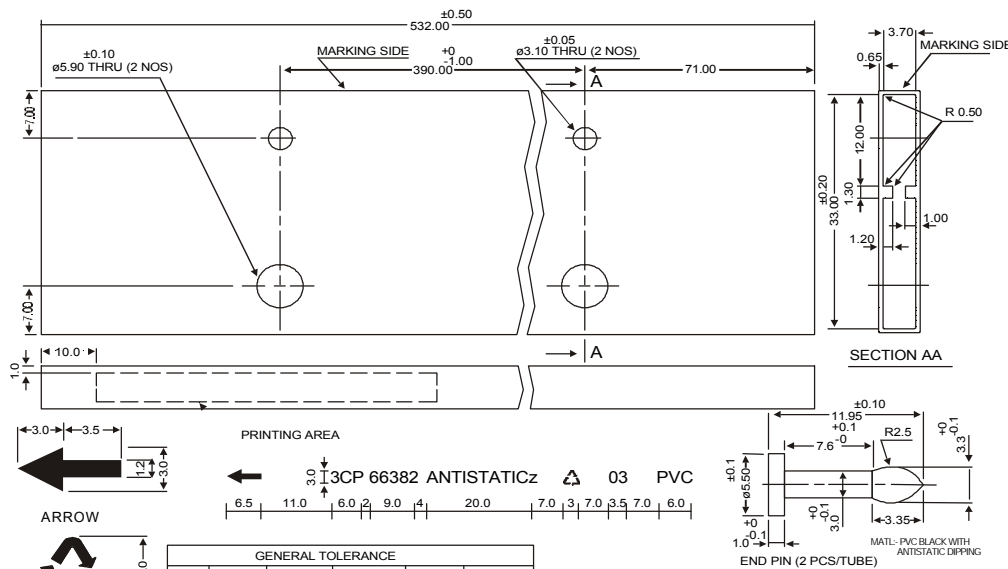
All dimensions in mm.



**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 315 mm	ANGULAR
5 mm	0.02 mm	30 mm	120 mm	315 mm	
	±0.1	±0.2	±0.3	±0.5	±0' 30"

All dimensions in mm

- 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>BD433</b>	<b>BD434</b>
<b>BD435</b>	<b>BD436</b>
<b>BD437</b>	<b>BD438</b>
<b>BD439</b>	<b>BD440</b>
<b>BD441</b>	<b>BD442</b>
<b>NPN</b>	<b>PNP</b>

**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.



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