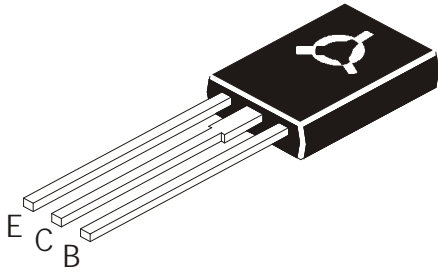


**EPITAXIAL SILICON POWER TRANSISTORS**



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

**TO126**  
**Plastic Package**

www.DataSheet4U.com

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

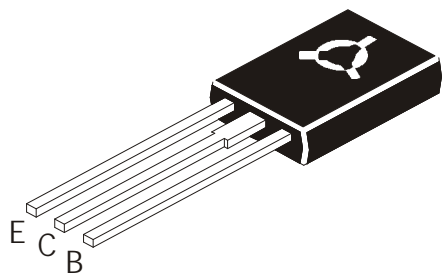
**THERMAL RESISTANCE**

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 ( $T_a=25^\circ\text{C}$  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	$\mu\text{A}$
Collector Cut off Current	$I_{CES}$	$V_{BE}=0, V_{CE}=\text{Rated } V_{CES}$	<100	<100	<100	<100	<100	$\mu\text{A}$
Emitter Cut off Current	$I_{EBO}$	$V_{EB}=5\text{V}, I_C=0$	<1.0	<1.0	<1.0	<1.0	<1.0	mA
Collector Emitter Sustaining Voltage	* $V_{CEO(sus)}$	$I_C=100\text{mA}, I_B=0$	>22	>32	>45	>60	>80	V
Collector Emitter Saturation Voltage	* $V_{CE(sat)}$	$I_C=2.0\text{A}, I_B=0.2\text{A}$	<0.5	<0.5	<0.6	<0.8	<0.8	V
Base Emitter On Voltage	* $V_{BE(on)}$	$I_C=10\text{mA}, V_{CE}=5\text{V}$ <b>ALL</b>	typ 0.58					V
		$I_C=2.0\text{A}, V_{CE}=1\text{V}$	<1.1	<1.1	<1.2	<1.5	<1.5	V

# EPITAXIAL SILICON POWER TRANSISTORS



BD433	BD434
BD435	BD436
BD437	BD438
BD439	BD440
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NPN	PNP

TO126  
Plastic Package

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

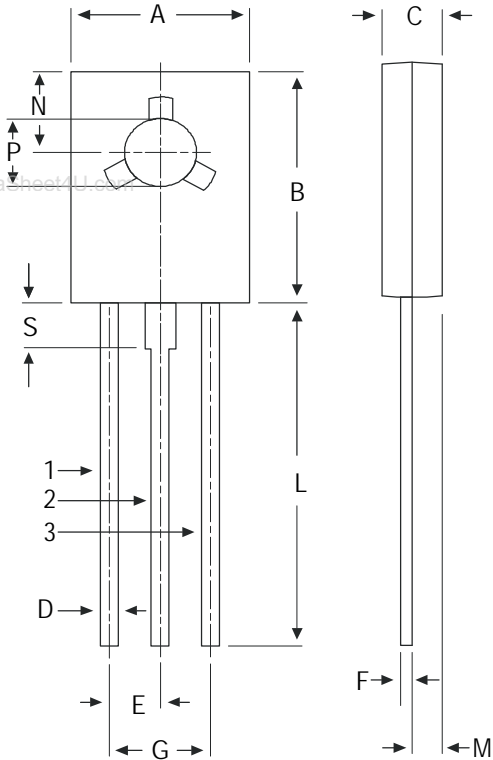
DESCRIPTION	SYMBOL	TEST CONDITION	BD433	BD435	BD437	BD439	BD441	UNIT
			BD434	BD436	BD438	BD440	BD442	
DC Current Gain	*h <sub>FE</sub>	I <sub>C</sub> =10mA, V <sub>CE</sub> =5V	>40	>40	>30	>20	>15	
		I <sub>C</sub> =500mA, V <sub>CE</sub> =1V	>85	>85	>85	>40	>40	
		I <sub>C</sub> =2.0A, V <sub>CE</sub> =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
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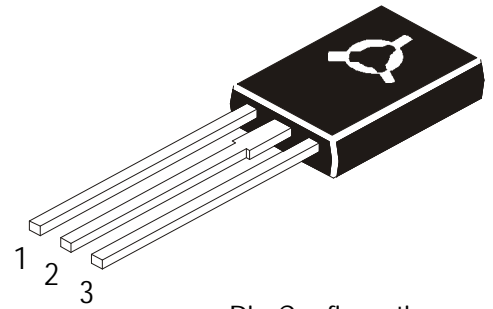
**TO126**  
**Plastic Package**

**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.	

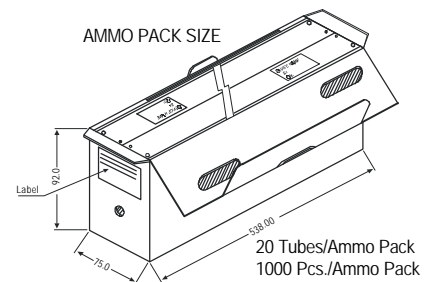
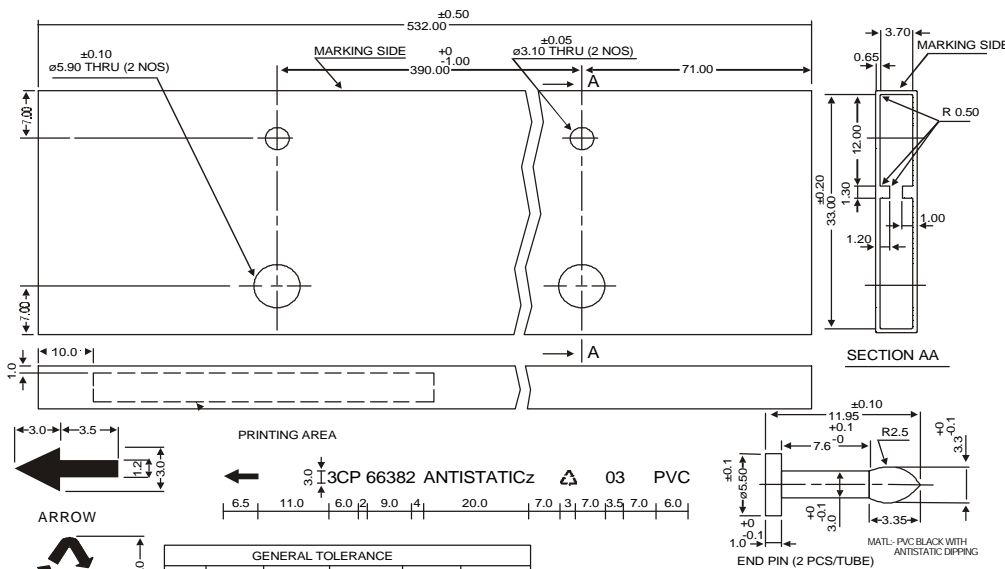
All dimensions in mm.



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 315 mm	ANGULAR
5 mm	30 mm	120 mm	315 mm		
±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.

**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