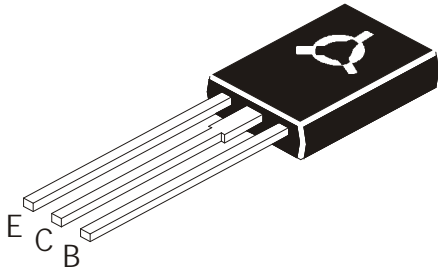


EPITAXIAL SILICON POWER TRANSISTORS



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

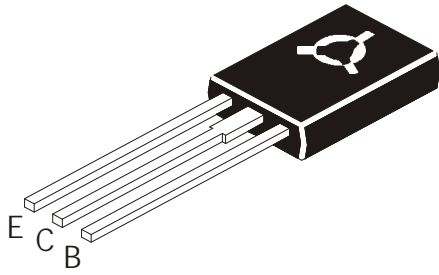
THERMAL RESISTANCE

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	μA
Collector Cut off Current	I_{CES}	$V_{BE}=0, V_{CE}=\text{Rated } V_{CES}$	<100	<100	<100	<100	<100	μA
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	* $V_{BE(on)}$	$I_C=10\text{mA}, V_{CE}=5\text{V}$ ALL	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
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NPN	PNP

TO126
Plastic Package

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

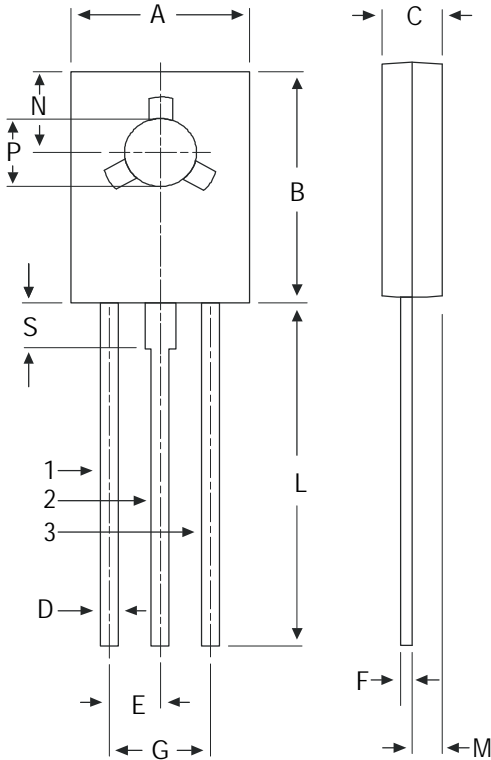
DESCRIPTION	SYMBOL	TEST CONDITION	BD433	BD435	BD437	BD439	BD441	UNIT
			BD434	BD436	BD438	BD440	BD442	
DC Current Gain	$*h_{FE}$	$I_C=10\text{mA}, V_{CE}=5\text{V}$	>40	>40	>30	>20	>15	
		$I_C=500\text{mA}, V_{CE}=1\text{V}$	>85	>85	>85	>40	>40	
		$I_C=2.0\text{A}, V_{CE}=1\text{V}$	>50	>50	>40	>25	>15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

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

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

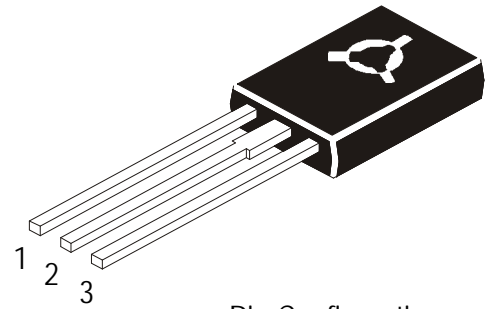
TO126
Plastic Package

TO-126 (SOT-32) Plastic Package



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.	

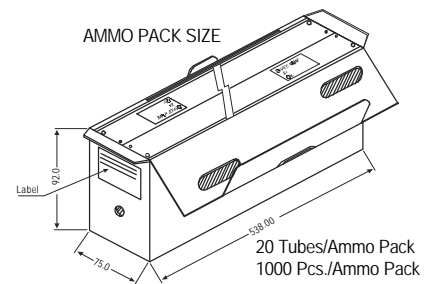
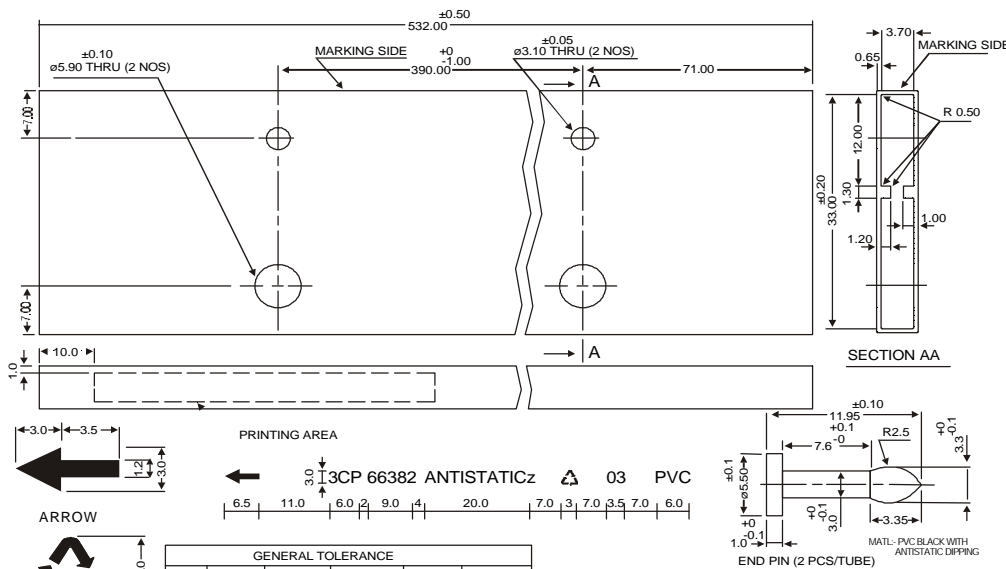
All dimensions in mm.



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