

BD433, 434, 435, 436, 437, 438

Medium Power Transistors



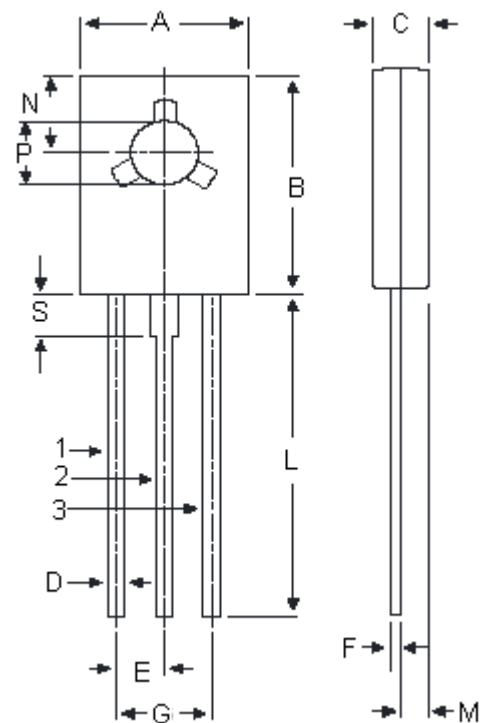
General Purpose TO-126



Features:

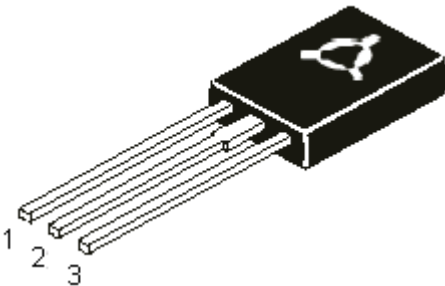
- NPN Plastic Medium Power Silicon Transistors.
- Intended for use in Medium Power Linear and Switching Applications.

TO-126 Plastic Package



Dimensions	Minimum	Maximum
A	7.4	7.8
B	10.5	10.8
C	2.4	2.7
D	0.7	0.9
E	2.25 (Typical)	
F	0.49	0.75
G	4.5 (Typical)	
L	15.7 (Typical)	
M	1.27 (Typical)	
N	3.75 (Typical)	
P	3.0	3.2
S	2.5 (Typical)	

Dimensions : Millimetres



Pin Configuration

1. Emitter
2. Collector
3. Base



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Absolute Maximum Ratings

Description	Symbol	BD433 BD434	BD435 BD436	BD437 BD438	Unit
Collector-Base Voltage	V _{CBO}	22	32	45	V
Collector-Emitter Voltage	V _{CES}				
Collector-Emitter Voltage	V _{CEO}				
Emitter-Base Voltage	V _{EBO}	5.0			
Collector Current	I _C	4.0			A
Collector Peak Current (t = 10ms)	I _{CM}	7.0			
Base Current	I _B	1.0			
Device Dissipation at T _C = 25°C	P _{tot}	36			W
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	R _{th(j-a)}	100			

Electrical Characteristics ($T_a = 25^\circ\text{C}$ unless otherwise specified)

Description	Symbol	Test Condition	BD433 BD434	BD435 BD436	BD437 BD438	Unit
Collector-Cutoff Current	I_{CBO} I_{CES}	$I_E = 0, V_{CB} = \text{Rated } V_{CBO}$ $V_{BE} = 0, V_{CE} = \text{Rated } V_{CES}$	<100			μA
Emitter-Cutoff Current	I_{EBO}	$V_{EB} = 5\text{V}, I_C = 0$	<1.0			mA
Collector-Emitter Sustaining Voltage	$V_{CEO(sus)}^*$	$I_C = 100\text{mA}, I_B = 0$	>22	>32	>45	V
Collector Emitter Saturation Voltage	$V_{CE(sat)}^*$	$I_C = 2\text{A}, I_B = 0.2\text{A}$	<0.5		<0.6	
Base Emitter On Voltage	$V_{BE(on)}^*$	$I_C = 10\text{mA}, V_{CE} = 5\text{V}$ $I_C = 2\text{A}, V_{CE} = 1\text{V}$	0.58 (Typical) <1.1 <1.1 <1.2			
DC Current Gain	h_{FE}^*	$I_C=10\text{mA}, V_{CE}=5\text{V}$ $I_C=500\text{mA}, V_{CE}=1\text{V}$ $I_C=2\text{A}, V_{CE}=1\text{V}$	>40 >85 >50		>30 >85 >40	-
	h_{FE1}^* / h_{FE2}^* Matched Pair	$I_C = 500\text{mA}, V_{CE} = 1\text{V}$	<1.4			
Transition Frequency	f_t	$V_{CE} = 1\text{V}, I_C = 250\text{mA}$	>3.0			MHz

*Pulse Test : Pulse Duration = 300 μs , Duty Cycle = 1.5%



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Specifications

$I_{C(av)}$ maximum (A)	V_{CEO} maximum (V)	P_{tot} at 25°C (W)	Plastic Package	Type	Part Number
4	22	36	TO-126	NPN	BD433
				PNP	BD434
	32			NPN	BD435
				PNP	BD436
	45			NPN	BD437
				PNP	BD438

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Notes:

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