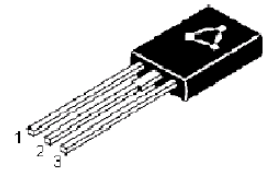


Medium Power Transistor

TO-126



Pin Configuration:

1. Emitter
2. Collector
3. Base

Feature:

- PNP Plastic Medium Power Silicon Transistors
- Intended for use in Medium Power Linear Switching Applications

Absolute Maximum Ratings

Description	Symbol	BD438	Unit
Collector-Base Voltage	V_{CBO}	45	V
Collector-Emitter Voltage	V_{CES}		
Collector-Emitter Voltage	V_{CEO}		
Emitter-Base Voltage	V_{EBO}	5	
Collector Current	I_C	4	A
Collector Peak Current (t = 10ms)	I_{CM}	7	
Base Current	I_B	1	
Power Dissipation at $T_C = 25^\circ\text{C}$	P_{tot}	36	W
Operating and Storage Junction Temperature Range	T_j, T_{stg}	-65 to +150	$^\circ\text{C}$

Thermal Resistance

Junction to Case	$R_{th(j-c)}$	3.5	$^\circ\text{C/W}$
Junction to Ambient	$R_{th(j-a)}$	100	

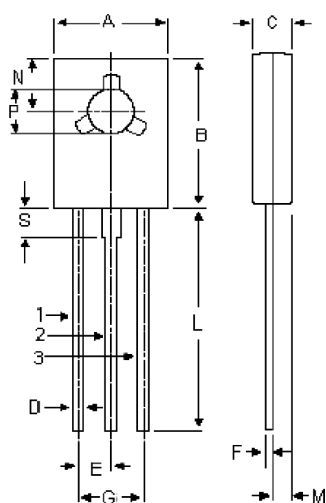
Medium Power Transistor TO-126



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

Description	Symbol	Test Condition	BD438	Unit
Collector-Cut off 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-Cut off Current	I_{EBO}	$V_{EB} = 5\text{V}, I_C = 0$	<1	mA
Collector-Emitter Sustaining Voltage	$V_{CEO(sus)}^*$	$I_C = 100\text{mA}, I_B = 0$	>45	V
Collector Emitter Saturation Voltage	$V_{CE(sat)}^*$	$I_C = 2\text{A}, I_B = 0.2\text{A}$	<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) <1.2	
DC Current Gain	h_{FE}^*	$I_C = 10\text{mA}, V_{CE} = 5\text{V}$ $I_C = 500\text{mA}, V_{CE} = 1\text{V}$ $I_C = 2\text{A}, V_{CE} = 1\text{V}$	>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	MHz

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



Pin Configuration:

1. Emitter
2. Collector
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Dimensions	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 (Typical)	
F	0.49	0.75
G	4.5 (Typical)	
L	15.7 (Typical)	
M	1.27 (Typical)	
N	3.75 (Typical)	
P	3	3.2
S	2.5 (Typical)	

Dimensions : Millimetres

Part Number Table

Description	Part Number
Transistor, PNP, TO-126	BD438

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