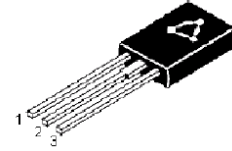


NPN Transistor TO-18

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Pin Configuration:

1. Emitter
2. Collector
3. Base

Feature:

- NPN Plastic Power Transistors
- Medium Power Linear and Switching Applications

Absolute Maximum Ratings

Description	Symbol	-	BD135	Unit
Collector-Base Voltage (Open Emitter)	V_{CBO}	Max.	45	V
Collector Emitter Voltage (Open Base)	V_{CEO}			
Collector Current	I_C		1.5	A
Total Power Dissipation upto $T_C = 25^\circ\text{C}$	P_{tot}		12.5	W
Junction Temperature	T_j		150	$^\circ\text{C}$
Collector-Emitter Saturation Voltage $I_C = 0.5\text{A}$, $I_B = 0.05\text{A}$	$V_{CE(Sat)}$		0.5	V
DC Current Gain $I_C = 0.15\text{A}$; $V_{CE} = 2\text{V}$	h_{FE}	Min. Max.	40 250	-

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

Description	Symbol	-	BD135	Unit
Collector-Base Voltage (Open Emitter)	V_{CBO}	Max.	45	V
Collector Emitter Voltage (Open Base)	V_{CEO}			
Emitter-Base Voltage (Open Collector)	V_{EBO}		5	
Collector Current	I_C		1.5	A
Base Current	I_B		0.5	
Total Power Dissipation up to $T_A = 25^\circ\text{C}$ Derate above 25°C	P_{tot}		1.25 10	W mW/ $^\circ\text{C}$

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NPN Transistor

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

Description	Symbol	-	BD135	Unit
Total Power Dissipation up to $T_C = 25^\circ\text{C}$ Derate above 25°C	P_{tot}	Max.	12.5 100	W mW/ $^\circ\text{C}$
Junction Temperature	T_j		150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-	-65 to +150	

Thermal Resistance

From Junction to Case	$R_{\text{th (j-c)}}$	-	10	$^\circ\text{C/W}$
From Junction to Ambient	$R_{\text{th (j-a)}}$	-	100	

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

Description	Symbol	-	BD135	Unit
Collector Cut off Current $I_E = 0; V_{CB} = 30\text{V}$ $I_E = 0; V_{CB} = 30\text{V}; T_C = 125^\circ\text{C}$	I_{CBO}	Max.	0.1 10	μA
Emitter Cut off Current $I_C = 0; V_{EB} = 5\text{V}$	I_{EBO}		10	
Breakdown Voltages $I_C = 0.03\text{A}; I_B = 0$ $I_C = 1\text{mA}; I_E = 0$ $I_E = 1\text{mA}; I_C = 0$	$V_{\text{CEO (Sus)}}^*$ V_{CBO} V_{EBO}	Min.	45 45 5	V
Saturation Voltage $I_C = 0.5\text{A}; I_B = 0.05\text{A}$	$V_{\text{CE (sat)}}^*$	Max.	0.5	
Base-Emitter On Voltage $I_C = 0.5\text{A}; V_{\text{CE}} = 2\text{V}$	$V_{\text{BE (on)}}^*$		1	
DC Current Gain $I_C = 0.15\text{A}; V_{\text{CE}} = 2\text{V}^*$ $I_C = 0.15\text{A}; V_{\text{CE}} = 2\text{V}^{**}$ $I_C = 0.15\text{A}; V_{\text{CE}} = 2\text{V}^*$	h_{FE}^*	Min.	25	-
		Min. Max.	40 250	
		Min.	25	

** hFE Classification:

-6	Min.	40
	Max.	100
-10	Min.	63
	Max.	160
-16	Min.	100
	Max.	250
-25	Min.	160
	Max.	400

* Pulse Test: Pulse Width = $\leq 300\mu\text{s}$, Duty Cycle $\leq 2\%$.

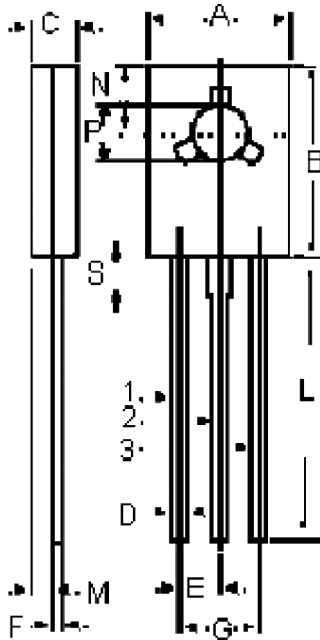
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Dimensions	Min.	Max.
A	7.4	7.8
B	10.5	10.8
C	2.4	2.7
D	0.7	0.9
E	2.25 (Typical)	
F	0.49	0.75
G	4.5 (Typical)	
L	15.7 (Typical)	
M	1.27 (Typical)	
N	3.75 (Typical)	
P	3	3.2
S	2.5 (Typical)	

Dimensions : Millimetres

Pin Configuration:

1. Emitter
2. Collector
3. Base

Part Number Table

Description	Part Number
Transistor, NPN, TO-126	BD135

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