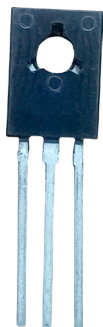


# Single Bipolar Transistor multicomp<sup>PRO</sup>



RoHS  
Compliant

## Absolute Maximum Ratings

Description	Symbol	BD175 BD176	BD177 BD178	BD180	Unit
Collector Emitter Voltage	$V_{CEO}$	45	60	80	V
Collector -Base Voltage	$V_{CBO}$				
Emitter Base Voltage	$V_{EBO}$	5			
Collector Current	$I_C$	3			A
Collector Peak Current	$I_{CM}$	7			
Power Dissipation @ $T_a=25^\circ\text{C}$ Derate above $25^\circ\text{C}$	$P_D$	1.25			W mW/ $^\circ\text{C}$
Power Dissipation @ $T_c=25^\circ\text{C}$		10			
Operating and Storage Junction Temperature Range	$T_j, T_{stg}$	-65 to 150			$^\circ\text{C}$

## Electrical Characteristics ( $T_c = 25^\circ\text{C}$ Unless otherwise specified)

Description	Symbol	Test Condition	Min.	Max.	Unit
Collector Cut-off Current	$I_{CBO}$	$V_{CB}=45\text{V}, I_E=0$ BD175/76 $V_{CB}=60\text{V}, I_E=0$ BD177/78 $V_{CB}=80\text{V}, I_E=0$ BD180		100	$\mu\text{A}$
Emitter Cut off Current	$I_{EBO}$	$V_{EB}=5\text{V}, I_C=0$		1	mA
Collector Emitter Sustaining Voltag	$*V_{CE(sus)}$	$I_C=100\text{mA}, I_B=0$ BD175/76 BD177/78 BD180	45 60 80		V
Collector Emitter Saturation Voltage	$*V_{CE(sat)}$	$I_C=1\text{A}, I_B=0.1\text{A}$		0.8	
Base Emitter on Voltage	$*V_{BE(on)}$	$I_C=1\text{A}, V_{CE}=2\text{V}$		1.3	
DC Current Gain	$*h_{FE}$ $*h_{FE}$ Group	$I_C=150\text{mA}, V_{CE}=2\text{V}$ $I_C=1\text{A}, V_{CE}=2\text{V}$ $I_C=150\text{mA}, V_{CE}=2\text{V}$ Only BD175/76	-6 -10 -16	40 15 40 63 100	100 160 250
Transition Frequency	$f_T$	$I_C=250\text{mA}, V_{CE}=10\text{V}$		3	MHz

\*Pulse test:- Pulse width=300ms, Duty cycle=1.5%

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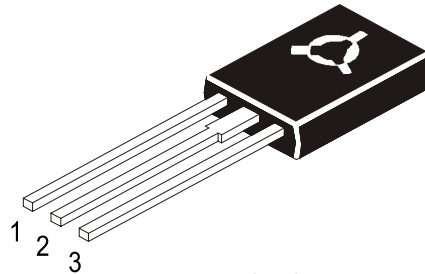
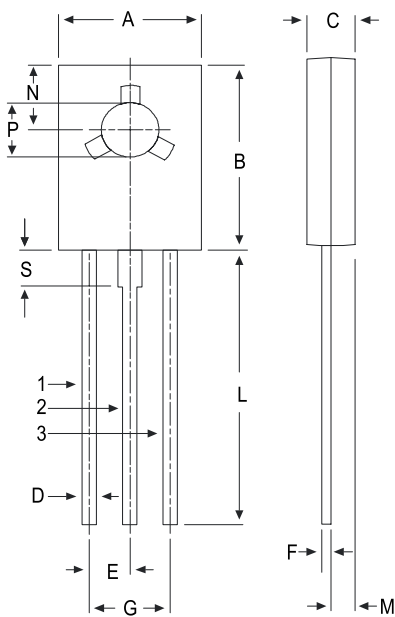
**multicomp**<sup>PRO</sup>

# Single Bipolar Transistor **multicomp**PRO

## Thermal Characteristics

Description	Symbol	Value	Unit
Junction to Ambient in free air	$R_{th(j-a)}$	100	°C/W
Junction to Case	$R_{th(j-c)}$	4.16	

## Diagram



### Pin Configuration

1. Emitter
2. Collector
3. Base

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	3.2
S	2.5 TYP.	

## Part Number Table

Description	Part Number
Single Bipolar Transistor, NPN, 45V, 3000mA, 30W, TO-126	BD175
Single Bipolar Transistor, PNP, 45V, 3000mA, 30W, TO-126	BD176
Single Bipolar Transistor, NPN, 60V, 3000mA, 30W, TO-126	BD177
Single Bipolar Transistor, PNP, 60V, 3000mA, 30W, TO-126	BD178
Single Bipolar Transistor, PNP, 80V, 3000mA, 30W, TO-126	BD180

Dimensions : Millimetres

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