

PNP Medium Power Transistor



Pin Configuration

1. Emitter
2. Base
3. Collector

Features:

- PNP Silicon Power Switching Transistors
- Medium Power Amplifier and Switching Applications

Absolute Maximum Ratings:

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

Characteristic	Symbol	BC160-16	BC161-16	Unit
Collector Emitter Voltage	V _{CEO}	40	60	V
Collector Base Voltage	V _{CBO}			
Emitter Base Voltage	V _{EBO}	5		
Collector Current Continuous	I _C	1		A
Power Dissipation at T _a = 25°C Derate above 25°C	P _D	0.8 4.57		W mW/°C
Power Dissipation at T _C = 25°C Derate above 25°C		4 22.73		
Operating Storage Temperature Range	T _j , T _{stg}	-65 to +200		°C

Thermal Resistance

Junction to Ambient in Free Air	$R_{th(j-a)}$	219	$^\circ\text{C/W}$
Junction to Case	$R_{th(j-c)}$	44	

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Electrical Characteristics:

(T_a = +25°C unless otherwise specified)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector Emitter Voltage	V _{CES}	I _C = 100μA, V _{BE} = 0 BC160-16 BC161-16	40 60	-	-	V
	*V _{CEO}	I _C = 30mA, I _B = 0 BC160-16 BC161-16	40 60			
Emitter Base Voltage	V _{EBO}	I _E = 100μA, I _C = 0	5		-	
Collector Cut off Current	I _{CES}	V _{CE} = 40V, V _{BE} = 0, BC160-16 V _{CE} = 60V, V _{BE} = 0, BC161-16	-		100 100	nA
		Ta = 150°C V _{CE} = 40V, V _{BE} = 0, BC160-16 V _{CE} = 60V, V _{BE} = 0, BC161-16			100 100	μA
DC Current Gain	*h _{FE}	I _C = 100mA, V _{CE} = 1V BC160-16/BC161-16 Group-6 Group-10 Group-16	40 40 63 100		400 100 160 250	-
		I _C = 1A, V _{CE} = 1V BC160-16/BC161-16 Group-6 Group-10 Group-16	-	26 15 20 30		
Collector Emitter Saturation Voltage	*V _{CE(sat)}	I _C = 1A, I _B = 0.1A		-	1	V
Base Emitter on Voltage	*V _{BE(on)}	I _C = 1A, V _{CE} = 1V			1.7	

Dynamic Characteristics

Transition Frequency	f _T	I _C = 50mA, V _{CE} = 10V, f = 20MHz	50	-	-	MHz
Output Capacitance	C _{ob}	V _{CB} = 10V, I _E = 0, f = 1MHz	-		30	pF
Input Capacitance	C _{ib}	V _{EB} = 10V, I _C = 0, f = 1MHz			180	

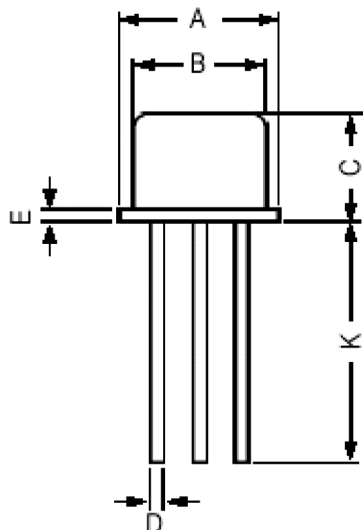
Switching Characteristics

Turn On Time	t _{on}	I _C = 150mA, I _{B1} = 5μA	-	-	500	ns
Turn Off Time	t _{off}	I _C = 100mA, I _{B1} = I _{B2} = 5μA			650	

*Pulsed : Pulse Duration ≤300μs, Duty Cycle ≤1%

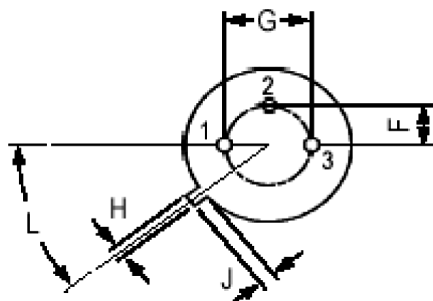
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TO-39 Metal Can Package



Dim.	Min.	Max.
A	8.5	9.39
B	7.74	8.5
C	6.09	6.6
D	0.4	0.53
E	-	0.88
F	2.41	2.66
G	4.82	5.33
H	0.71	0.86
J	0.73	1.02
K	12.7	-
L	42°	48°

Dimensions : Millimetres



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Part Number Table

Description	Part Number
Transistor, PNP, TO-39	BC160-16
	BC161-16

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