

BC107/BC108 Series

Low Power Bipolar Transistors



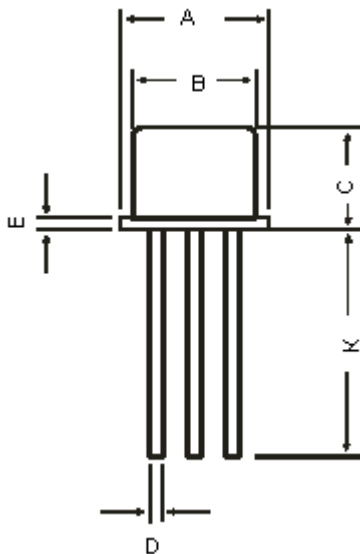
General Purpose Amplifier/Switches

Feature:

- NPN Silicon Planar Epitaxial Transistors.

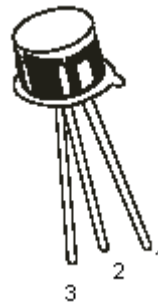
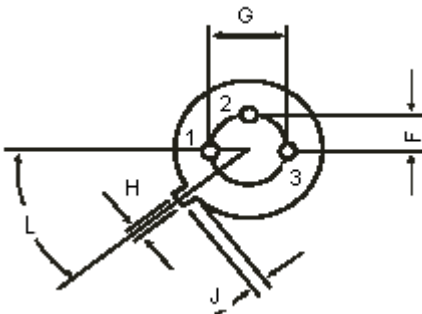


TO-18 Metal Can Package



Dimensions	Minimum	Maximum
A	5.24	5.84
B	4.52	4.97
C	4.31	5.33
D	0.40	0.53
E	-	0.76
F	-	1.27
G	-	2.97
H	0.91	1.17
J	0.71	1.21
K	12.70	-
L	45°	

Dimensions : Millimetres



Pin Configuration:

1. Emitter
2. Base
3. Collector



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Absolute Maximum Ratings

Description	Symbol	BC107	BC108	Unit
Collector-Emitter Voltage	V_{CEO}	45	25	V
Collector-Base Voltage	V_{CBO}	50	30	
Emitter-Base Voltage	V_{EBO}	6.0	5.0	
Collector Current Continuous	I_C	0.2		A
Power Dissipation at $T_a = 25^\circ\text{C}$ Derate above 25°C	P_D	0.6		W
Power Dissipation at $T_C = 25^\circ\text{C}$ Derate above 25°C		2.28		
Operating and Storage Junction Temperature Range	T_J, T_{stg}	-65 to +200		$^\circ\text{C}$
Thermal Resistance				
Junction to Case	$R_{th(j-c)}$	175		$^\circ\text{C/W}$

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

Description	Symbol	Test Condition	Minimum	Maximum	Unit
Collector-Emitter Voltage	V_{CEO}	$I_C = 2\text{mA}, I_B = 0$ BC107 BC108	45 25	-	V
Emitter-Base Voltage	V_{EBO}	$I_E = 10\mu\text{A}, I_C = 0$ BC107 BC108	6.0 5.0	-	
Collector-Cut off Current	I_{CBO}	$V_{CB} = 45\text{V}, I_E = 0$ BC107 $V_{CB} = 25\text{V}, I_E = 0$ BC108 $T_{amb} = 125^\circ\text{C}$ $V_{CB} = 45\text{V}, I_E = 0$ BC107 $V_{CB} = 25\text{V}, I_E = 0$ BC108	-	15 15	nA μA
DC Current	h_{FE}	$I_C = 10\mu\text{A}, V_{CE} = 5\text{V}$ B Group C Group $I_C = 2\text{mA}, V_{CE} = 5\text{V}$ BC 107 BC 108 A Group B Group C Group	40 100 110 110 110 200 420	- - 450 800 220 450 800	-
Base Emitter Saturation Voltage	$V_{BE(Sat)}$	$I_C = 10\text{mA}, I_B = 0.5\text{mA}$ $I_C = 100\text{mA}, I_B = 5\text{mA}$	-	0.83 1.05	V
Collector Emitter Saturation Voltage	$V_{CE(Sat)}$		-	0.25 0.60	
Base Emitter On Voltage	$V_{BE(on)}$	$I_C = 2\text{mA}, V_{CE} = 5\text{V}$ $I_C = 10\text{mA}, V_{CE} = 5\text{V}$	0.55 -	0.70 0.77	



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

Description	Symbol	Test Condition	Minimum	Maximum	Unit
Collector Knee Voltage	$V_{CE(K)}$	$I_C = 10\text{mA}$, $I_B =$ The value for which $I_C = 11\text{mA}$ at $V_{CE} = 1\text{V}$	-	0.60	V
Transition Frequency	f_t	$V_{CE} = 5\text{V}$, $I_C = 10\text{mA}$, $f = 100\text{MHz}$	150	-	MHz
Noise Figure	NF	$V_{CE} = 5\text{V}$, $I_C = 0.2\text{mA}$ $R_g = 2\text{k}\Omega$ $F = 1\text{kHz}, B = 200\text{Hz}$	-	10	dB
Output Capacitance	C_{obo}	$V_{CB} = 10\text{V}$, $f = 1\text{MHz}$	-	4.5	pF
Small Signal Current Gain	h_{fe}	ALL $f = 1\text{kHz}$ $I_C = 2\text{mA}$, $V_{CE} = 5\text{V}$ BC 107 BC 108 A Group B Group C Group	125 125 125 240 450	500 900 260 500 900	-
Input Impedance	h_{ie}	$I_C = 2\text{mA}$, $V_{CE} = 5\text{V}$ A Group B Group C Group	1.6 3.2 6.0	4.5 8.5 15	$\text{K}\Omega$ $\text{K}\Omega$
Output Admittance	h_{oe}	$I_C = 2\text{mA}$, $V_{CE} = 5\text{V}$ A Group B Group C Group	-	30 60 110	umhos

Specifications

V_{CEO} (V)	V_{CBO} maximum (V)	I_C (A)	h_{FE} minimum at $I_C = 2\text{mA}$	f_T minimum (*Typical) (V)	P_{tot} (mW)	Type	Package	Part Number
45	50	0.1	110	150	600	NPN	TO-18	BC107
			200					BC107A
110	300		BC107B					
20	30		200		600			BC108
			110					BC108B
			200					BC108C



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Notes:

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