

# BC107/BC108 Series

## Low Power Bipolar Transistors



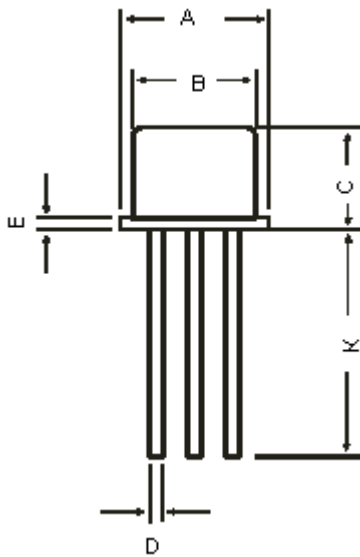
General Purpose Amplifier/Switches

Feature:

- NPN Silicon Planar Epitaxial Transistors.

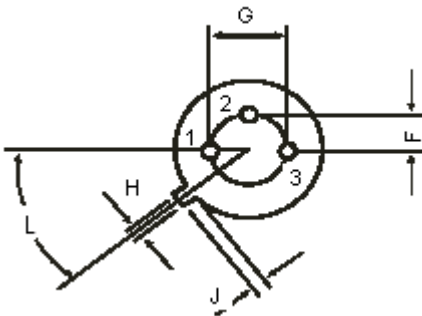


TO-18 Metal Can Package



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 $25^\circ\text{C}$	$P_D$	0.6		W
Power Dissipation at $T_C = 25^\circ\text{C}$ Derate above $25^\circ\text{C}$		2.28		
Operating and Storage Junction Temperature Range	$T_J, T_{stg}$	-65 to +200		$^\circ\text{C}$
<b>Thermal Resistance</b>				
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  $\mu\text{A}$
DC Current	$h_{FE}$	$I_C = 10\mu\text{A}, V_{CE} = 5\text{V}$ <b>B Group</b> <b>C Group</b> $I_C = 2\text{mA}, V_{CE} = 5\text{V}$ <b>BC 107</b> <b>BC 108</b>  <b>A Group</b> <b>B Group</b> <b>C Group</b>	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 $f = 1\text{kHz}$ $I_C = 2\text{mA}$ , $V_{CE} = 5\text{V}$ <b>BC 107</b> <b>BC 108</b>  <b>A Group</b> <b>B Group</b> <b>C Group</b>	125 125  125 240 450	500 900  260 500 900	-
Input Impedance	$h_{ie}$	$I_C = 2\text{mA}$ , $V_{CE} = 5\text{V}$ <b>A Group</b> <b>B Group</b> <b>C Group</b>	1.6 3.2 6.0	4.5 8.5 15	$\text{K}\Omega$ $\text{K}\Omega$
Output Admittance	$h_{oe}$	$I_C = 2\text{mA}$ , $V_{CE} = 5\text{V}$ <b>A Group</b> <b>B Group</b> <b>C Group</b>	-	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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