

Low Power Bipolar Transistors

BC107 / BC108 Series

multicomp PRO

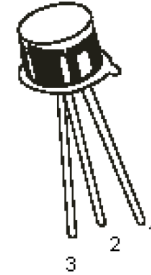
**RoHS
Compliant**

General Purpose Amplifier / Switches



Feature

- NPN Silicon Planar Epitaxial Transistors



Pin Configuration

1. Emitter
2. Base
3. Collector

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	5	
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		$^\circ\text{C} / \text{W}$

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
Collector-Base Voltage	V_{EBO}	$I_E = 10 \mu\text{A}, I_C = 0$ BC107 BC108	6 5	-	
Collector-Cut off Current	I_{CBO}	$V_{CB} = 45\text{V}, I_E = 0$ BC107 $V_{CB} = 25\text{V}, I_E = 0$ BC108 $T_{amb} = 125^\circ\text{C}$	-	15 15	nA
		$V_{CB} = 45 \text{ V}, I_E = 0$ BC107 $V_{CB} = 25 \text{ V}, I_E = 0$ BC108	-	4 4	μA

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Description	Symbol	Test Condition	Minimum	Maximum	Unit
DC Current	h _{FE}	I _C = 10μA, V _{CE} = 5 V			
		B Group	40	-	
		C Group	100	-	
		I _C = 2 mA, V _{CE} = 5 V			
		BC107	110	450	-
		BC108	110	800	
A Group	110	220			
B Group	200	450			
C Group	420	800			
Base Emitter Saturation Voltage	V _{BE (sat)}	I _C = 10mA, I _B = 0.5mA I _C = 100mA, I _B = 5mA	-	0.83 1.05	V
Collector Emitter Saturation Voltage	V _{CE (sat)}		-	0.25 0.6	
Base Emitter on Voltage	V _{BE (on)}	I _C = 2 mA, V _{CE} = 5V I _C = 10 mA, V _{CE} = 5V	0.55 -	0.7 0.77	
Collector Knee Voltage	V _{CE (K)}	I _C = 10mA, I _B = The Value for Which I _C = 11mA at V _{CE} = 1V	-	0.6	V
Transition Frequency	f _t	V _{CE} = 5V, I _C = 10mA f = 100MHz	150	-	MHz
Noise Figure	nF	V _{CE} = 5V, I _C = 0.2mA R _g = 2kΩ F = 1KHz, B = 200Hz	-	10	dB
Output Capacitance	C _{obo}	V _{CB} = 10V, f = 1MHz	-	4.5	pF
Small Signal Current Gain	h _{fe}	All f = 1kHz			
		I _C = 2mA, V _{CE} = 5V			
		BC107	125	500	
		BC108	125	900	
		A Group	125	260	
		B Group	240	500	
C Group	450	900			
Input Impedance	h _{ie}	I _C = 2mA, V _{CE} = 5V			
		A Group	1.6	4.5	kΩ
		B Group	3.2	8.5	
C Group	6	15			
Output Admittance	h _{oe}	I _C = 2mA, V _{CE} = 5V			
		A Group	-	30	μΩ
		B Group		60	
C Group		110			

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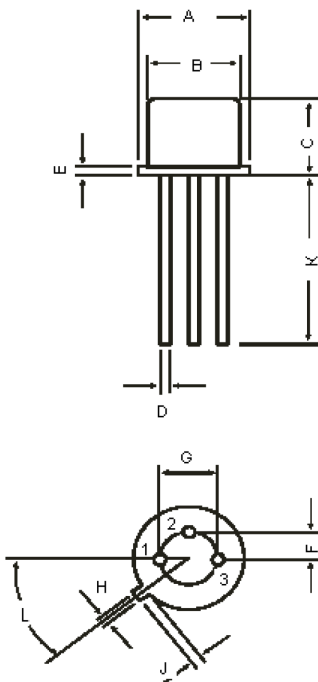
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Specification Table

V _{CEO} (V)	V _{CB0} Maximum (V)	I _c (V)	h _{FE} Minimum at I _c = 2mA	f _r Minimum (Typical) (V)	P _{tot} (mW)	Type	Package	Part Number
45	50	30	110	150	600	NPN	TO-18	BC107
			200					BC107A
20	30		110		300			BC107B
			200		600			BC108
								BC108B
								BC108C

TO-18 Metal Can Package



Dim.	Min.	Max.
A	5.24	5.84
B	4.52	4.97
C	4.31	5.33
D	0.4	0.53
E	-	0.76
F	-	1.27
G	-	2.97
H	0.91	1.17
J	0.71	1.21
K	12.7	-
L	45°	

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