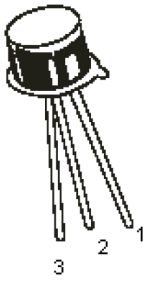
NPN Silicon Planar Transistors
BC107 / BC108 Series

multicomp PRO

Low Noise General Purpose Audio Amplifiers

RoHS Compliant



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	Ic	200		mA
Power Dissipation at T_A = 25°C Derate Above 25°C	P_D	300 1.72		mW mW / °C
Power Dissipation at Tc = 25°C Derate Above 25°C		750 4.29		
Operating and Storage Junction Temperature Range	T_J, T_{STG}	-65 to +200		°C
Thermal Characteristics				
Junction to Ambient in free air	$R_{th\ (j-a)}$	583		°C / W
Junction to Case	$R_{th\ (j-c)}$	233		

Electrical Characteristics (T_A = 25°C unless otherwise specified)

Description	Symbol	Test Condition	BC107	BC108	Unit
Collector-Emitter Voltage	V_{CEO}	I_C = 2 mA, I_B = 0	>45	>25	V
Collector-Base Voltage	V_{EBO}	I_E = 10µA, I_C = 0	>6	>5	
Collector-Cut off Current	I_{CBO}	V_{CB} = 45V, I_E = 0 V_{CB} = 25V, I_E = 0 V_{CB} = 45V, I_E = 0, T_A=125ºC V_{CB} = 25V, I_E = 0, T_A=125ºC	<15 <4	<15 <4	nA µA
DC Current	h_{FE}	I_C = 10µA, V_{CE} = 5V B Group C Group	40 100		-
		I_C = 2mA, V_{CE} = 5V BC107 BC108 A Group B Group C Group	110-450 110-220 200-450 420-800	110-800	

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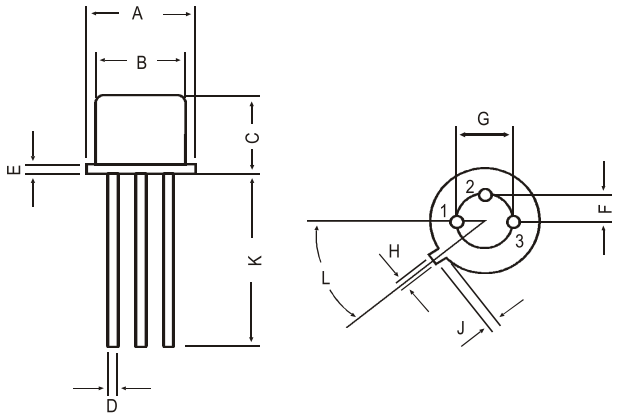
Electrical Characteristics (T_A=25°C unless specified otherwise)

Description	Symbol	Test Condition	Min.	Max.	Unit
Collector Emitter Saturation Voltage	$V_{CE\ (sat)}$	I_C=10mA, I_B=0.5mA I_C=100mA, I_B=5mA		0.25 0.6	V
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
Base Emitter on Voltage	$V_{BE\ (on)}$	I_C=2mA, V_{CE}=5V I_C=10mA, V_{CE}=5V	0.55	0.7 0.77	V
Collector Knee Voltage	$V_{CE\ (K)}$	I_C=10mA, I_B=the value for which I_C=11mA @ V_{CE}=1V		0.6	V
Transition Frequency	f_T	Ic=10mA, V_{CE}=5V, f=100MHz	150		MHz
Output Capacitance	C_{obo}	V_{CB}=10V, I_E=0, f=1MHz		4.5	pF
Noise Figure	NF	Ic=0.2mA, V_{CE}=5V, Rg=2kΩ		10	dB

Small Signal Characteristics

Description	Symbol	Test Condition	Min.	Max.	Unit
Small Signal Current Gain	h_{fe}	I_C=2mA, V_{CE}=5V, f=1kHz BC107 BC108 A Group B Group C Group	 125 125 125 240 450	 500 900 260 500 900	
Input Impedance	h_{ie}	I_C=2mA, V_{CE}=5V, f=1kHz A Group B Group C Group	 1.6 3.2 6	 4.5 8.5 15	kΩ
Output Admittance	h_{oe}	I_C=2mA, V_{CE}=5V, f=1kHz A Group B Group C Group		 30 60 110	µΩ

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

Dim.	Min.	Max.
G	-	2.97
H	0.91	1.17
J	0.71	1.21
K	12.7	-
L	45°	

Dimensions : Millimetres

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Part Number Table

Description	Part Number
NPN Silicon Planar Transistors, NPN, 45V, 150MHz, 600mW, 100mA, 110h_{FE}	BC107
NPN Silicon Planar Transistors, NPN, 45V, 150MHz, 600mW, 100mA, 110h_{FE}	BC107A
NPN Silicon Planar Transistors, NPN, 45V, 150MHz, 600mW, 100mA, 200h_{FE}	BC107B
NPN Silicon Planar Transistors, NPN, 25V, 150MHz, 600mW, 200mA, 110h_{FE}	BC108
NPN Silicon Planar Transistors, NPN, 25V, 150MHz, 600mW, 200mA, 200h_{FE}	BC108B
NPN Silicon Planar Transistors, NPN, 25V, 150MHz, 600mW, 200mA, 420h_{FE}	BC108C