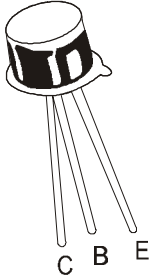


NPN SILICON PLANAR TRANSISTORS

**BC107/A/B/C
BC108/A/B/C
BC109/A/B/C**



**TO-18
Metal Can Package**

Low Noise General Purpose Audio Amplifiers

ABSOLUTE MAXIMUM RATINGS

DESCRIPTION	SYMBOL	BC107	BC108	BC109	UNIT
Collector Emitter Voltage	V_{CEO}	45	25	25	V
Collector Base Voltage	V_{CBO}	50	30	30	V
Emitter Base Voltage	V_{EBO}	6.0	5.0	5.0	V
Collector Current Continuous	I_C	200			mA
Power Dissipation @ $T_a=25^\circ\text{C}$ Derate above 25°C	P_D	300			mW
		1.72			mW/ $^\circ\text{C}$
Power Dissipation @ $T_c=25^\circ\text{C}$ Derate above 25°C	P_D	750			mW
		4.29			mW/ $^\circ\text{C}$
Operating And Storage Junction Temperature Range	T_j, T_{stg}	- 65 to +200			$^\circ\text{C}$

THERMAL CHARACTERISTICS

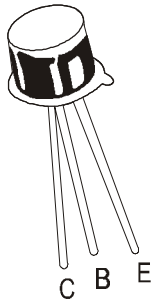
Junction to Ambient in free air	$R_{th(j-a)}$	583	$^\circ\text{C/W}$
Junction to Case	$R_{th(j-c)}$	233	$^\circ\text{C/W}$

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

DESCRIPTION	SYMBOL	TEST CONDITION	BC107	BC108	BC109	UNIT
Collector Emitter Voltage	V_{CEO}	$I_C=2\text{mA}, I_B=0$	>45	>25	>25	V
Emitter Base Voltage	V_{EBO}	$I_E=10\mu\text{A}, I_C=0$	>6	>5	>5	V
Collector Cut Off Current	I_{CBO}	$V_{CB}=45\text{V}, I_E=0$	<15			nA
		$V_{CB}=25\text{V}, I_E=0$		<15	<15	nA
		$V_{CB}=45\text{V}, I_E=0, T_a=125^\circ\text{C}$	<4			μA
		$V_{CB}=25\text{V}, I_E=0, T_a=125^\circ\text{C}$		<4	<4	μA
DC Current Gain	h_{FE}	$I_C=10\mu\text{A}, V_{CE}=5\text{V}$ B Group C Group	>40 >100			
		$I_C=2\text{mA}, V_{CE}=5\text{V}$ BC107 BC108 BC109 A Group B Group C Group	110-450 110-800 200-800 110-220 200-450 420-800			

NPN SILICON PLANAR TRANSISTORS

BC107/A/B/C
BC108/A/B/C
BC109/A/B/C



TO-18
Metal Can Package

ELECTRICAL CHARACTERISTICS (T_a=25°C unless specified otherwise)

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Collector Emitter Saturation Voltage	V _{CE (sat)}	I _C =10mA, I _B =0.5mA			0.25	V
		I _C =100mA, I _B =5mA			0.60	V
Base Emitter Saturation Voltage	V _{BE (sat)}	I _C =10mA, I _B =0.5mA			0.83	V
		I _C =100mA, I _B =5mA			1.05	V
Base Emitter On Voltage	V _{BE (on)}	I _C =2mA, V _{CE} =5V	0.55		0.70	V
		I _C =10mA, V _{CE} =5V			0.77	V
Collector Knee Voltage	V _{CE (K)}	I _C =10mA, I _B =the value for which I _C =11mA @ V _{CE} =1V			0.60	V
Transition frequency	f _T	I _C =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	I _C =0.2mA, V _{CE} =5V, R _g =2KΩ, f=30Hz to 15KHz BC109			4.0	dB
		f=1KHz, ΔF=200Hz, BC109			4.0	dB
		BC107/108			10	dB

SMALL SIGNAL CHARACTERISTICS

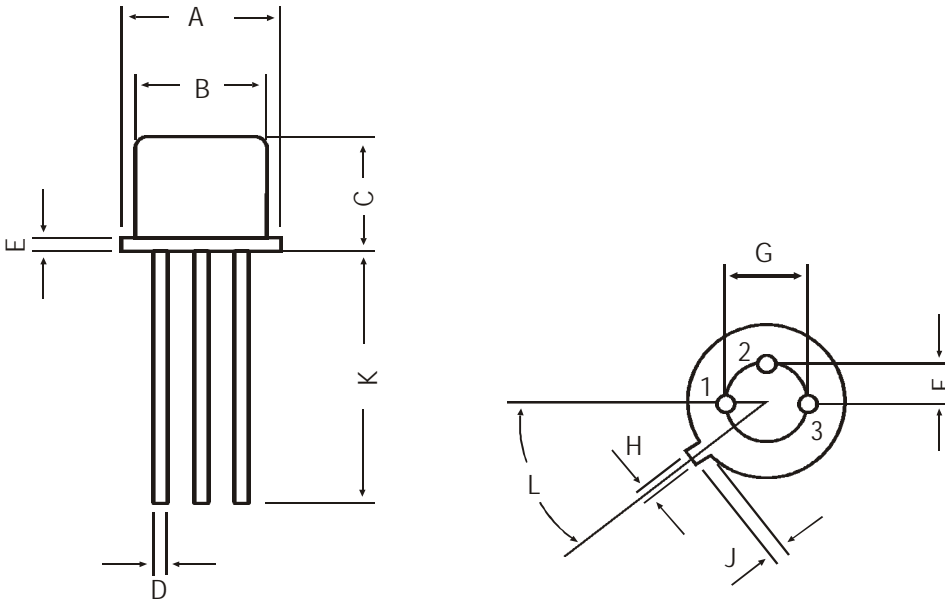
DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Small Signal Current Gain	h _{fe}	I _C =2mA, V _{CE} =5V, f=1KHz				
		BC107	125		500	
		BC108	125		900	
		BC109	240		900	
		A Group	125		260	
		B Group	240		500	
Input Impedance	h _{ie}	I _C =2mA, V _{CE} =5V, f=1KHz				
		A Group	1.6		4.5	KΩ
		B Group	3.2		8.5	KΩ
Output Admittance	h _{oe}	I _C =2mA, V _{CE} =5V, f=1KHz				
		A Group			30	μmhos
		B Group			60	μmhos
		C Group			110	μmhos

BC107_109Rev_3 231202E

BC107/A/B/C
 BC108/A/B/C
 BC109/A/B/C

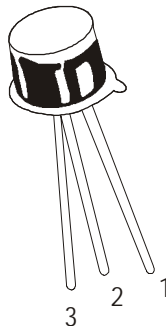
**TO-18
 Metal Can Package**

TO-18 Metal Can Package



All dimensions in mm.

DIM	MIN	MAX
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 DEG	



PIN CONFIGURATION

1. EMITTER
2. BASE
3. COLLECTOR

Packing Detail

PACKAGE	STANDARD PACK		INNER CARTON BOX		OUTER CARTON BOX		
	Details	Net Weight/Qty	Size	Qty	Size	Qty	Gr Wt
TO-18	1K/polybag	350 gm/1K pcs	3" x 7.5" x 7.5"	5K	17" x 15" x 13.5"	80K	34 kgs

Disclaimer

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