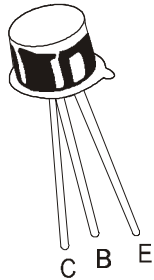


NPN SILICON PLANAR TRANSISTORS



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 at $T_a=25^\circ\text{C}$ Derate above 25°C	P_D	300			mW
		1.72			mW/ $^\circ\text{C}$
Power Dissipation at $T_c=25^\circ\text{C}$ 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	$^\circ\text{C/W}$

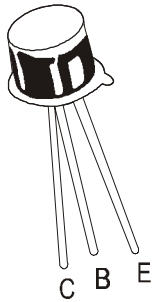
ELECTRICAL CHARACTERISTICS ($T_a=25^\circ\text{C}$ unless specified otherwise)

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		

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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 at 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

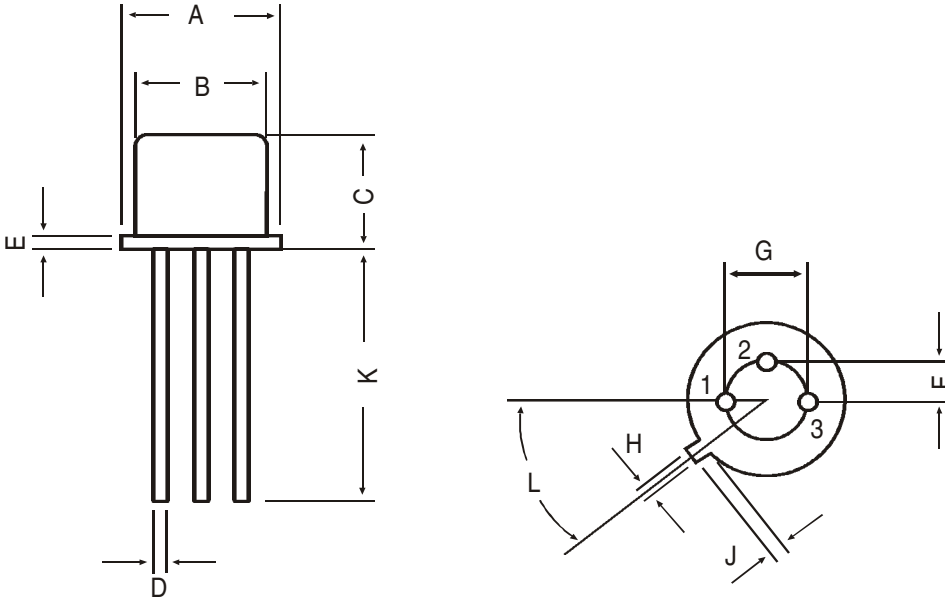
DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Small Signal Current Gain	h _{fe}	I _C =2mA, V _{CE} =5V, f=1KHz				
		BC107	125		500	
		BC108	125		900	
		BC109	240		900	
		A Group	125		260	
		B Group	240		500	
Input Impedance	h _{ie}	I _C =2mA, V _{CE} =5V, f=1KHz				
		A Group	1.6		4.5	KΩ
		B Group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

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

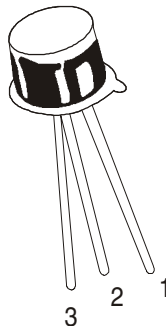
TO-18
 Metal Can Package

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

Component Disposal Instructions

1. CDIL Semiconductor Devices are RoHS compliant, customers are requested to please dispose as per prevailing Environmental Legislation of their Country.
2. In Europe, please dispose as per EU Directive 2002/96/EC on Waste Electrical and Electronic Equipment (WEEE).

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