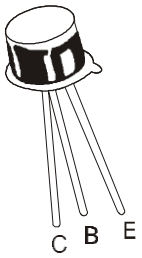
PNP SILICON PLANAR TRANSISTORS

BC177/A/B/C
BC178/A/B/C
BC179/A/B/C



TO-18
Metal Can Package

Low Noise General Purpose Audio Amplifiers

ABSOLUTE MAXIMUM RATINGS

DESCRIPTION	SYMBOL	BC177	BC178	BC179	UNIT
Collector Emitter Voltage	V_{CEO}	45	25	20	V
Collector Emitter Voltage	V_{CES}	50	30	25	V
Collector Base Voltage	V_{CBO}	50	30	25	V
Emitter Base Voltage	V_{EBO}	5.0	5.0	5.0	V
Collector Current Continuous	I_C	200			mA
Power Dissipation at T_a=25ºC Derate above 25ºC	P_D	300 1.72			mW mW/ ºC
Power Dissipation at T_c=25ºC Derate above 25ºC	P_D	750 4.29			mW mW/ ºC
Operating and Storage Junction Temperature Range	T_j, T_{stg}	- 65 to +200			ºC

THERMAL CHARACTERISTICS

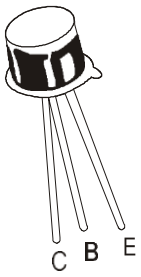
Junction to Ambient in free air	$R_{th\ (j-a)}$	583	ºC/W
Junction to Case	$R_{th\ (j-c)}$	233	ºC/W

ELECTRICAL CHARACTERISTICS (T_a=25ºC unless specified otherwise)

DESCRIPTION	SYMBOL	TEST CONDITION	BC177	BC178	BC179	UNIT
Collector Base Voltage	V_{CBO}	I_C=10μA, I_E=0	>50	>30	>25	V
Collector Emitter Voltage	V_{CEO}	I_C=2mA, I_B=0	>45	>25	>20	V
Emitter Base Voltage	V_{EBO}	I_E=10μA, I_C=0	>5	>5	>5	V
Collector Cut off Current	I_{CES}	V_{CE}=20V, I_E=0 V_{CE}=20V, I_E=0, T_a=125ºC	<100 <4			nA μA
DC Current Gain	h_{FE}	I_C=2mA, V_{CE}=5V				
		BC177	120-460			
		BC178	120-800			
		BC179	180-800			
		A Group	120-220			
		B Group	180-460			
		C Group	380-800			

NPN SILICON PLANAR TRANSISTORS

BC177/A/B/C
BC178/A/B/C
BC179/A/B/C



TO-18
Metal Can Package

ELECTRICAL CHARACTERISTICS (T_a=25ºC 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			0.20	V
		I_C=100mA, I_B=5mA			0.60	V
Base Emitter Saturation Voltage	$V_{BE\ (sat)}$	I_C=10mA, I_B=0.5mA			0.80	V
		I_C=100mA, I_B=5mA		0.9		V
Base Emitter on Voltage	$V_{BE\ (on)}$	I_C=2mA, V_{CE}=5V	0.6		0.75	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=50MHz	200			MHz
Output Capacitance	C_{obo}	V_{CB}=10V, I_E=0, f=1MHz			4.0	pF
Noise Figure	NF	I_C=0.2mA,V_{CE}=5V, Rg=2KΩ,				
		f=30Hz to 15KHz **BC179**			4.0	dB
		f=1KHz, F=200Hz, **BC179**			4.0	dB
		BC177/178			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				
		BC177	120		460	
		BC178	120		800	
		BC179	180		800	
		A Group	120		220	
		B Group	180		460	
		C Group	380		800	
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
		C Group	6.0		15	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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Metal Can Package

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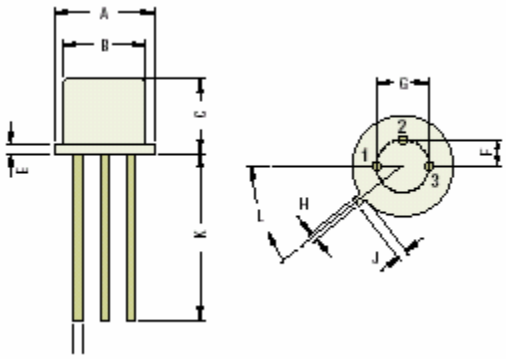

DIM	Min	Max
A	5.24	5.84
B	4.52	4.97
C	4.31	5.33
D	0.40	0.53
E	—	0.76
F	—	1.27

DIM	Min	Max
G	—	2.97
H	0.91	1.17
J	0.71	1.21
K	12.7	—
L	45°	

Pin Configuration Pin 1: Emitter Pin 2: Base Pin 3: Collector

… Packaging Specifications

Package / Case Type	Packaging Type	Std. Packing	Inner Carton			Outer Carton		
		Qty	Qty	Size L x W x H (cm)	Gross Weight (Kg)	Qty	Size L x W x H (cm)	Gross Weight (Kg)
Metal Can Packages								
TO-18	Bulk	1,000	5K	19 x 19 x 8	1.7	50K	43 x 38 x 34	18.2

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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).