

## PNP BC177 – BC178 – BC179

### LOW NOISE GENERAL PURPOSE AUDIO AMPLIFIERS

The BC177, BC178 and BC179 are silicon planar epitaxial PNP transistors mounted in TO-18 metal package.

They are suitable for use in drive audio stages, low-noise input audio stages and as low power, high gain general purpose transistors.

Compliance to RoHS.

#### ABSOLUTE MAXIMUM RATINGS

Symbol		BC177	BC178	BC179	Unit
$V_{CEO}$	Collector-Emitter Voltage ( $I_B = 0$ )	-50	-30	-25	V
$V_{CBO}$	Collector-Base Voltage ( $I_E = 0$ )	-45	-25	-20	V
$V_{EBO}$	Emitter-Base Voltage ( $I_C = 0$ )	-5			V
$I_C$	Collector Current	-100			mA
$I_{CM}$	Collector Peak Current	-200			mA
$P_D$	Total Power Dissipation @ $T_{amb} = 25^\circ$	300			mW
$T_J$	Junction Temperature	175			°C
$T_{Stg}$	Storage Temperature range	-65 to +150			°C

#### ELECTRICAL CHARACTERISTICS

$T_j = 25^\circ\text{C}$  unless otherwise specified

Symbol	Ratings	Test Condition(s)	Min	Typ	Max	Unit	
$I_{CBO}$	Collector Cutoff Current	$V_{CB} = -20\text{ V}$ $I_E = 0$	BC177	-	-1	-100	nA
			BC178				
			BC179				
		$V_{CB} = -20\text{ V}$ $I_E = 0\text{ V}$ $T_j = 150^\circ\text{C}$	BC177	-	-	-10	$\mu\text{A}$
			BC178				
			BC179				
$V_{CEO}$	Collector-Emitter Breakdown Voltage	$I_C = -2\text{ mA}$ $I_B = 0$	BC177	-	-	-	V
			BC178				
			BC179				
$V_{CBO}$	Collector-Base Breakdown Voltage	$I_C = -10\ \mu\text{A}$ $V_{BE} = 0$	BC177	-	-	-	V
			BC178				
			BC179				
$V_{EBO}$	Emitter-Base Breakdown Voltage	$I_E = -10\ \mu\text{A}$ $I_C = 0$	BC177	-5			V
			BC178				
			BC179				

## PNP BC177 – BC178 – BC179

### ELECTRICAL CHARACTERISTICS

T<sub>j</sub>=25°C unless otherwise specified

Symbol	Ratings	Test Condition(s)	Min	Typ	Max	Unit
$V_{CE(SAT)}$	Collector-Emitter saturation Voltage	$I_C = -10 \text{ mA}$ $I_B = -0.5 \text{ mA}$	BC177	-	-0.075	-0.25
			BC178			
			BC179			
		$I_C = -100 \text{ mA}$ $I_B = -5 \text{ mA}$	BC177	-	-0.2	-
			BC178			
			BC179			
$V_{BE(SAT)}$	Base-Emitter Saturation Voltage	$I_C = -10 \text{ mA}$ $I_B = -0.5 \text{ mA}$	BC177	-	-0.72	-0.8
			BC178			
			BC179			
		$I_C = -100 \text{ mA}$ $I_B = -5 \text{ mA}$	BC177	-	-0.86	-
			BC178			
			BC179			
$V_{BE}$	Base-Emitter Voltage	$I_C = -2 \text{ mA}$ $V_{CE} = -5 \text{ V}$	BC177	-0.6	-0.65	-0.75
			BC178			
			BC179			
$h_{FE}$	DC Current Gain (*)	$I_C = -2 \text{ mA}$ $V_{CE} = 5 \text{ V}$	BC177A	125	-	260
			BC178A			
			BC179A			
			BC177B	240	-	500
			BC178B			
			BC179B			
$f_T$	Transition frequency	$I_C = -10 \text{ mA}$ $V_{CE} = -5 \text{ V}$ $f = 100 \text{ MHz}$	BC177	-	200	-
			BC178			
			BC179			
$F$	Noise figure	$I_C = -200 \mu\text{A}$ $V_{CE} = -5 \text{ V}$ $f = 1 \text{ kHz}$ $R_g = 2 \text{ k}\Omega$ $B = 200 \text{ Hz}$	BC177	-	-	10
			BC178			10
			BC179			4
$C_C$	Collector capacitance	$I_E = 0$ $V_{CB} = -10 \text{ V}$ $f = 1 \text{ MHz}$	BC177	-	5	-
			BC178			
			BC179			

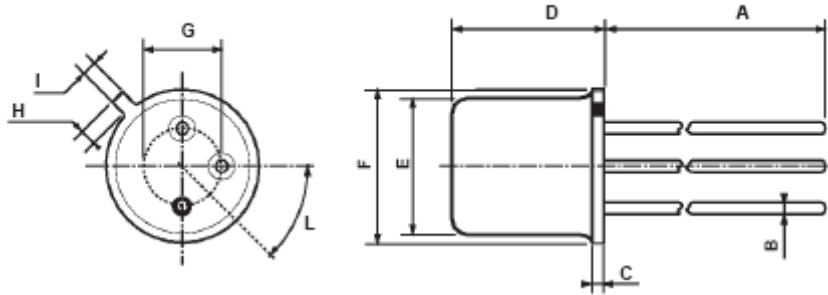
### THERMAL CHARACTERISTICS

Symbol	Ratings	Value	Unit
$R_{thJ-a}$	Thermal Resistance, Junction to mounting base	500	°C/W
$R_{thJ-c}$	Thermal Resistance, Junction to ambient in free air	200	°C/W

## PNP BC177 – BC178 – BC179

### MECHANICAL DATA CASE TO-18

DIMENSIONS (mm)		
	min	max
A	12.7	-
B	-	0.49
C	0.9	-
D	-	5.3
E	-	4.9
F	-	5.8
G	2.54	-
H	-	1.2
I	-	1.16
L	45°	-



Pin 1 :	emitter
Pin 2 :	base
Pin 3 :	Collector
Case :	Collector

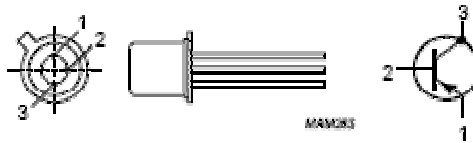


Fig.1 Simplified outline (TO-18) and symbol.

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