

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			$^\circ\text{C}$
T_{Stg}	Storage Temperature range	-65 to +150			$^\circ\text{C}$

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	$V_{CB} = -20\text{ V}$ $I_E = 0$	-	-1	-100	nA
		$V_{CB} = -20\text{ V}$ $I_E = 0\text{ V}$ $T_J = 150^\circ\text{C}$	-	-	-10	μA
V_{CEO}	Collector-Emitter Breakdown Voltage	$I_C = -2\text{ mA}$ $I_B = 0$	BC177	-45	-	V
			BC178	-25	-	
			BC179	-20	-	
V_{CBO}	Collector-Base Breakdown Voltage	$I_C = -10\text{ }\mu\text{A}$ $V_{BE} = 0$	BC177	-50	-	V
			BC178	-30	-	
			BC179	-25	-	
V_{EBO}	Emitter-Base Breakdown Voltage	$I_E = -10\text{ }\mu\text{A}$ $I_C = 0$	BC177	-5		V
			BC178			
			BC179			

PNP BC177 – BC178 – BC179

ELECTRICAL CHARACTERISTICS

T_j=25°C unless otherwise specified

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

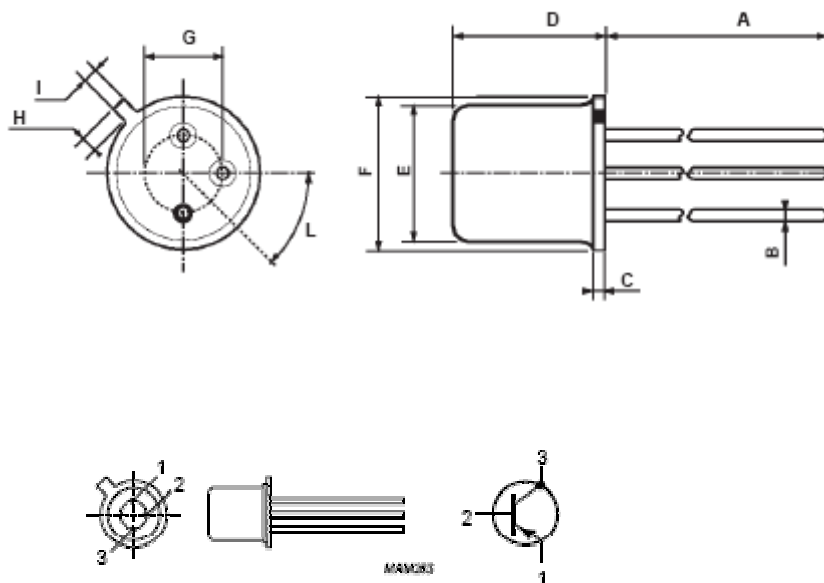


Fig.1 Simplified outline (TO-18) and symbol.

Revised September 2012

Information furnished is believed to be accurate and reliable. However, Comset Semiconductors assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may results from its use. Data are subject to change without notice. Comset Semiconductors makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does Comset Semiconductors assume any liability arising out of the application or use of any product and specifically disclaims any and all liability, including without limitation consequential or incidental damages. Comset Semiconductors' products are not authorized for use as critical components in life support devices or systems.