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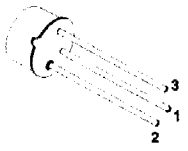
BC177
BC177B

LOW NOISE GENERAL PURPOSE AUDIO AMPLIFIERS

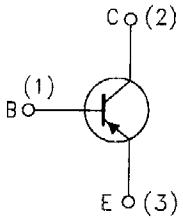
DESCRIPTION

The BC177 and BC177B are silicon Planar Epitaxial PNP transistors in TO-18 metal case. They are suitable for use in driver stages, low noise input stages and signal processing circuits of television reveivers. The NPN complementary types are BC107 and BC107B respectively.



TO-18

INTERNAL SCHEMATIC DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CES}	Collector-Emitter Voltage (V_{BE} = 0)	-50	V
V_{CEO}	Collector-Emitter Voltage (I_B = 0)	-45	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_{tot}	Total Dissipation at $T_{amb} \leq 25$ °C	0.3	W
T_{stg}	Storage Temperature	-65 to 175	°C
T_j	Max. Operating Junction Temperature	175	°C

THERMAL DATA

$R_{thj\text{-}case}$	Thermal Resistance Junction-Case	Max	200	°C/W
$R_{thj\text{-}amb}$	Thermal Resistance Junction-Ambient	Max	500	°C/W

ELECTRICAL CHARACTERISTICS (T_{case} = 25 °C unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CES}	Collector Cut-off Current (V_{BE} = 0)	V_{CE} =-20 V V_{CE} =-20 V T_C = 150 °C		-1	-100 -10	nA μA
$V_{(BR)CES}$	Collector-Emitter Breakdown Voltage (V_{BE} = 0)	I_C = -10 μA	-50			V
$V_{(BR)CEO}$*	Collector-Emitter Breakdown Voltage (I_B = 0)	I_C = -2 mA	-45			V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage (I_C = 0)	I_E = -10 μA	-5			V
$V_{CE(sat)}$*	Collector-Emitter Saturation Voltage	I_C = -10 mA I_B = -0.5 mA I_C = -100 mA I_B = -5 mA		-75 -200	-250	mV mV
$V_{BE(sat)}$*	Base-Emitter Saturation Voltage	I_C = -10 mA I_B = -0.5 mA I_C = -100 mA I_B = -5 mA		-720 -860		mV mV
$V_{BE(on)}$*	Base-Emitter On Voltage	I_C = -2 mA V_{CE} = -5 V	-550	-640	-750	mV
h_{fe}*	Small Signal Current Gain	I_C = -2 mA V_{CE} = -5 V f = 1KHz for **BC177** for **BC177B**	 125 240		 500 500	
f_T	Transition Frequency	I_C = -10 mA V_{CE} = -5 V f = 100 MHz		200		MHz
C_{CBO}	Collector-Base Capacitance	I_E = 0 V_{CB} = -10 V f = 100 KHz		5		pF
NF	Noise Figure	I_C = -0.2 mA V_{CE} = -5 V f = 1KHz R_g = 2KΩ B = 200Hz		2	10	dB
h_{ie}	Input Impedance	I_C = -2 mA V_{CE} = -5 V f = 1KHz		5		KΩ
h_{re}	Reverse Voltage Ratio	I_C = -2 mA V_{CE} = -5 V f = 1KHz		4		10^{-4}
h_{oe}	Output Admittance	I_C = -2 mA V_{CE} = -5 V f = 1KHz		30		μS

* Pulsed: Pulse duration = 300 μs, duty cycle ≤ 1 %