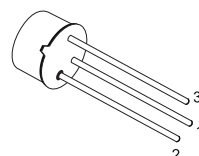


## LOW NOISE GENERAL PURPOSE AUDIO AMPLIFIERS

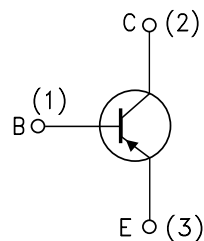
### DESCRIPTION

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 receivers. 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 $T_{amb} \leq 25^\circ\text{C}$	0.3	W
$T_{stg}$	Storage Temperature	-65 to 175	$^\circ\text{C}$
$T_j$	Max. Operating Junction Temperature	175	$^\circ\text{C}$

## BC177 - BC177B

### THERMAL DATA

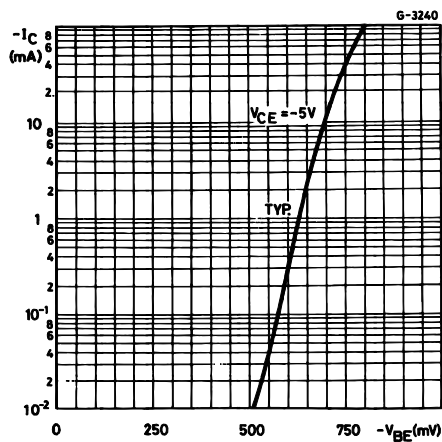
R <sub>thj-case</sub>	Thermal Resistance Junction-Case	Max	200	°C/W
R <sub>thj-amb</sub>	Thermal Resistance Junction-Ambient	Max	500	°C/W

### ELECTRICAL CHARACTERISTICS (T<sub>case</sub> = 25 °C unless otherwise specified)

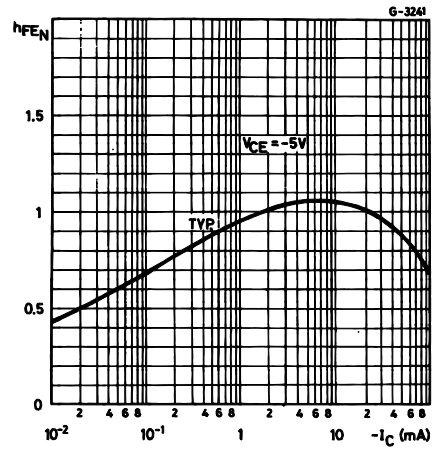
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I <sub>CES</sub>	Collector Cut-off Current (V <sub>BE</sub> = 0)	V <sub>CE</sub> = -20 V V <sub>CE</sub> = -20 V T <sub>C</sub> = 150 °C		-1	-100 -10	nA μA
V <sub>(BR)CES</sub>	Collector-Emitter Breakdown Voltage (V <sub>BE</sub> = 0)	I <sub>C</sub> = -10 μA	-50			V
V <sub>(BR)CEO*</sub>	Collector-Emitter Breakdown Voltage (I <sub>B</sub> = 0)	I <sub>C</sub> = -2 mA	-45			V
V <sub>(BR)EBO</sub>	Emitter-Base Breakdown Voltage (I <sub>C</sub> = 0)	I <sub>E</sub> = -10 μA	-5			V
V <sub>CE(sat)*</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = -10 mA I <sub>B</sub> = -0.5 mA I <sub>C</sub> = -100 mA I <sub>B</sub> = -5 mA		-75 -200	-250	mV mV
V <sub>BE(sat)*</sub>	Base-Emitter Saturation Voltage	I <sub>C</sub> = -10 mA I <sub>B</sub> = -0.5 mA I <sub>C</sub> = -100 mA I <sub>B</sub> = -5 mA		-720 -860		mV mV
V <sub>BE(on)*</sub>	Base-Emitter On Voltage	I <sub>C</sub> = -2 mA V <sub>CE</sub> = -5 V	-550	-640	-750	mV
h <sub>fe</sub> *	Small Signal Current Gain	I <sub>C</sub> = -2 mA V <sub>CE</sub> = -5 V f = 1KHz for <b>BC177</b> for <b>BC177B</b>	125 240		500 500	
f <sub>T</sub>	Transition Frequency	I <sub>C</sub> = -10 mA V <sub>CE</sub> = -5 V f = 100 MHz		200		MHz
C <sub>CBO</sub>	Collector-Base Capacitance	I <sub>E</sub> = 0 V <sub>CB</sub> = -10 V f = 100 KHz		5		pF
NF	Noise Figure	I <sub>C</sub> = -0.2 mA V <sub>CE</sub> = -5 V f = 1KHz R <sub>g</sub> = 2KΩ B = 200Hz		2	10	dB
h <sub>ie</sub>	Input Impedance	I <sub>C</sub> = -2 mA V <sub>CE</sub> = -5 V f = 1KHz		5		KΩ
h <sub>re</sub>	Reverse Voltage Ratio	I <sub>C</sub> = -2 mA V <sub>CE</sub> = -5 V f = 1KHz		4		10 <sup>-4</sup>
h <sub>oe</sub>	Output Admittance	I <sub>C</sub> = -2 mA V <sub>CE</sub> = -5 V f = 1KHz		30		μS

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

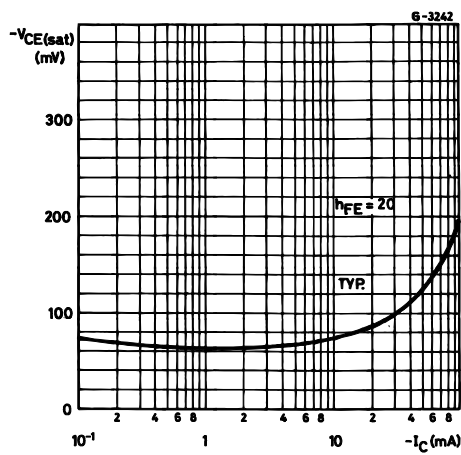
DC Transconductance.



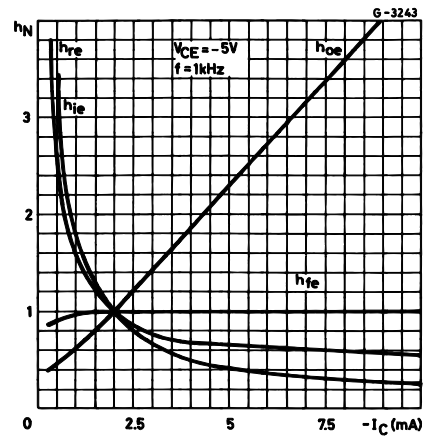
DC Normalized Current Gain.



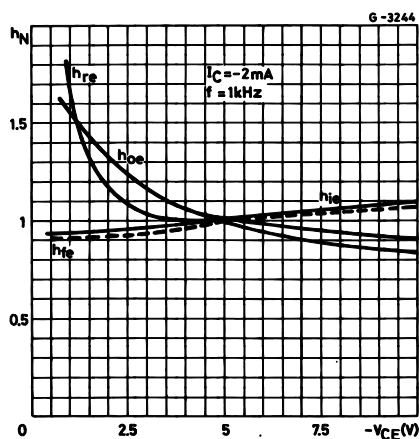
Collector-emitter Saturation Voltage.



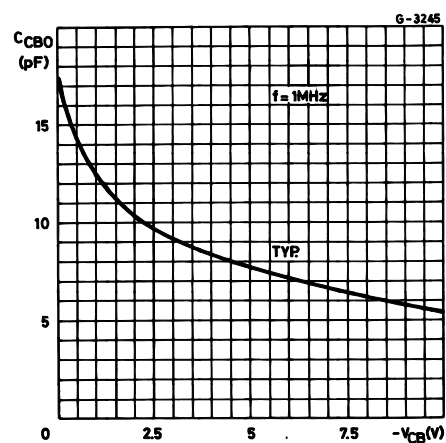
Normalized h Parameters.



Normalized h Parameters.

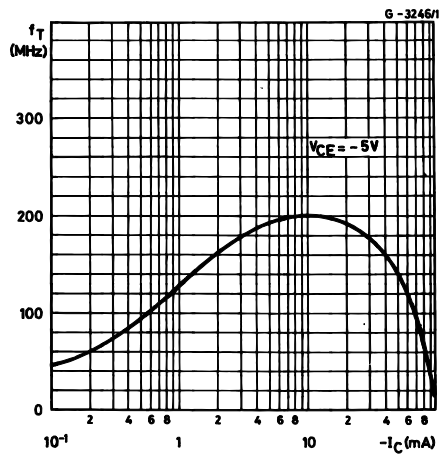


Collector-base Capacitance.

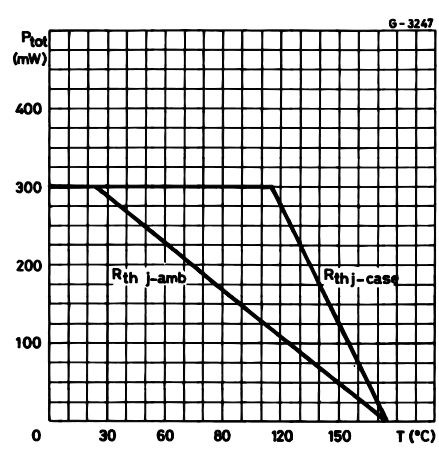


BC177 - BC177B

Transition Frequency.

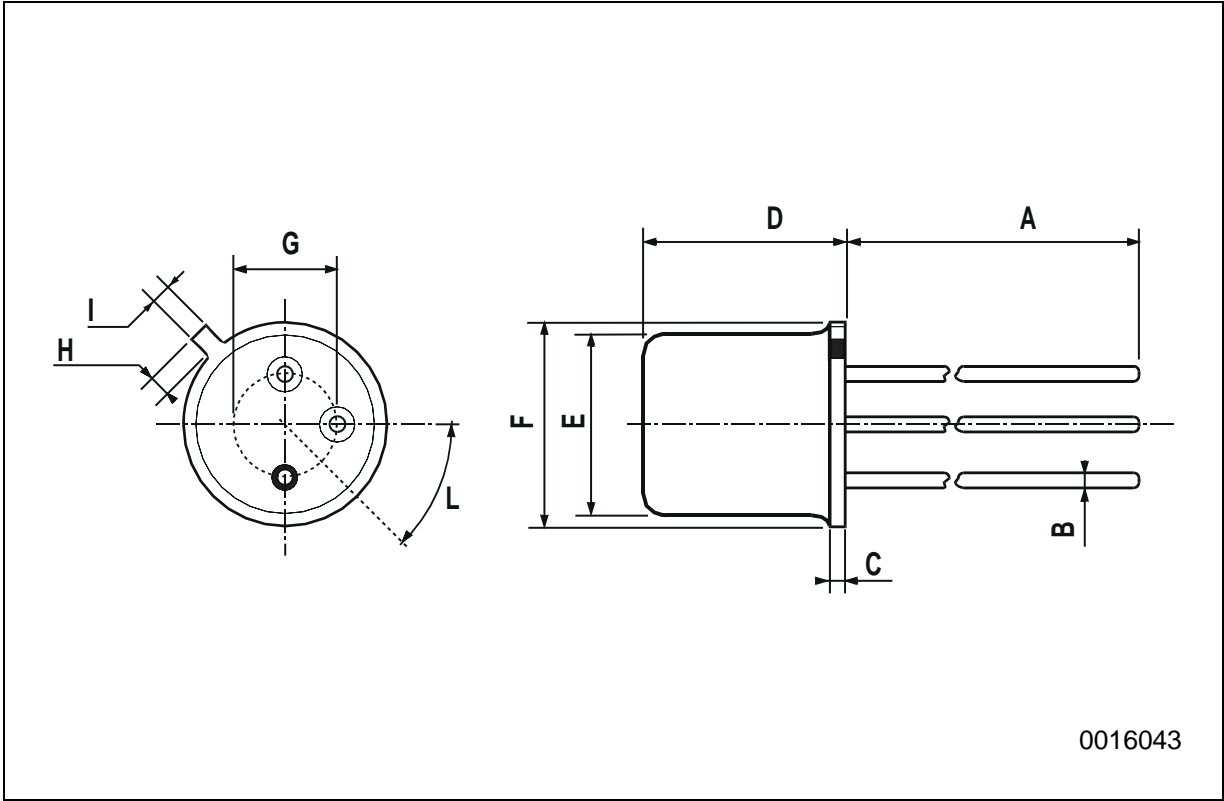


Power Rating Chart.



TO-18 MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A		12.7			0.500	
B			0.49			0.019
D			5.3			0.208
E			4.9			0.193
F			5.8			0.228
G	2.54			0.100		
H			1.2			0.047
I			1.16			0.045
L	45°			45°		



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