

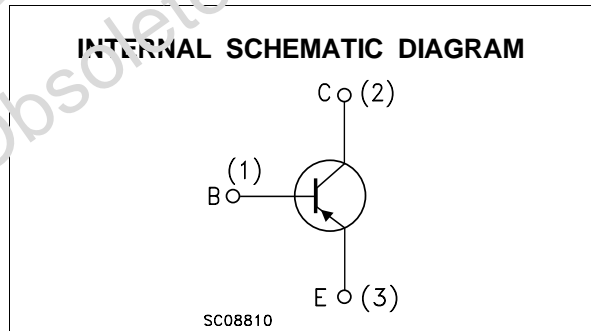
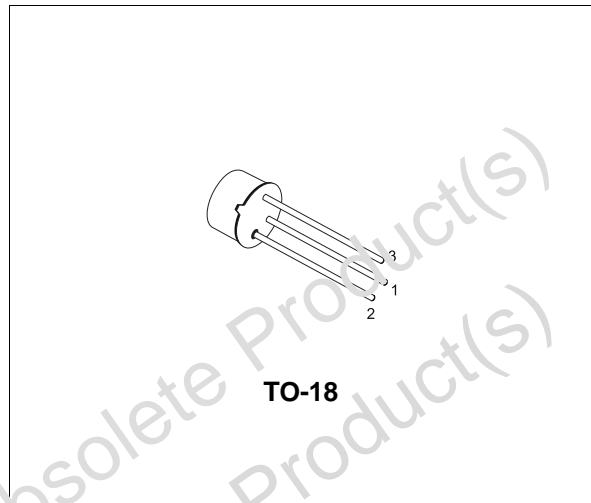


# BC177 BC177B

## 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 receivers. The NPN complementary types are BC107 and BC107B respectively.



### 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

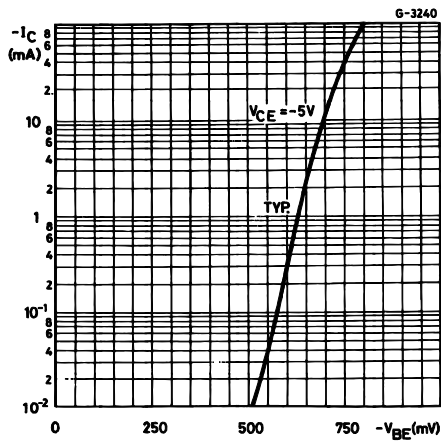
R <sub>thj-case</sub>	Thermal Resistance Junction-Case	Max	200	°C/W
R <sub>thj-amb</sub>	Thermal Resistance Junction-Ambient	Max	500	°C/W

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

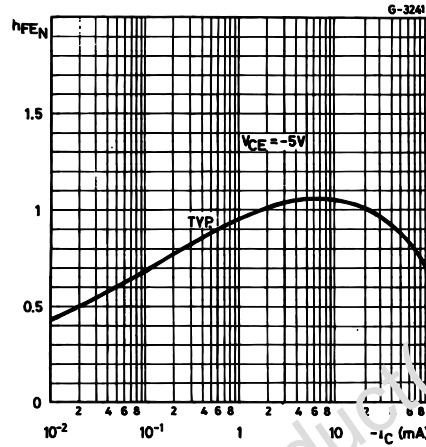
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I <sub>CES</sub>	Collector Cut-off Current (V <sub>BE</sub> = 0)	V <sub>CE</sub> = -20 V V <sub>CE</sub> = -20 V T <sub>C</sub> = 150 °C		-1	-100 -10	nA μA
V <sub>(BR)CES</sub>	Collector-Emitter Breakdown Voltage (V <sub>BE</sub> = 0)	I <sub>C</sub> = -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>os</sub>	Output Admittance	I <sub>C</sub> = -2 mA V <sub>CE</sub> = -5 V f = 1KHz		30		μS

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

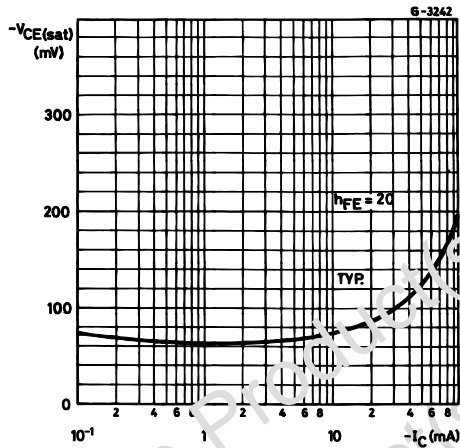
DC Transconductance.



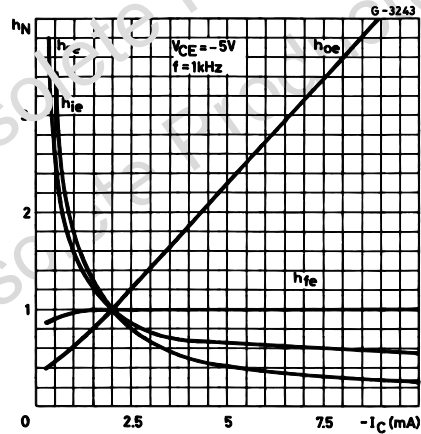
DC Normalized Current Gain.



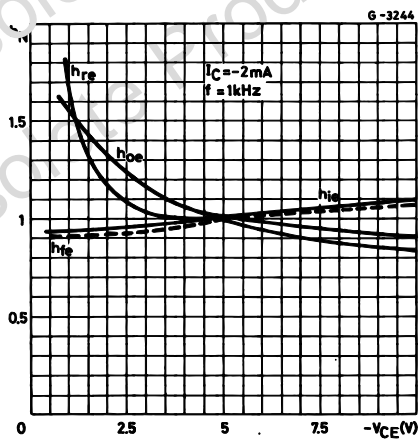
Collector-emitter Saturation Voltage.



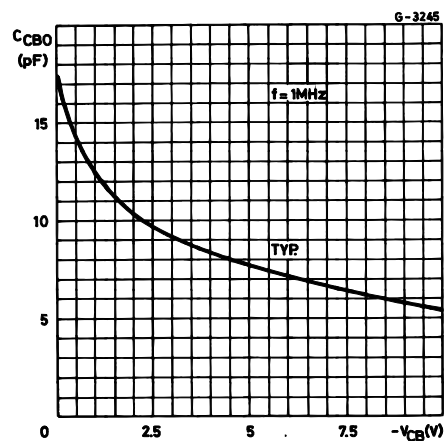
Normalized h Parameters.



Normalized h Parameters.

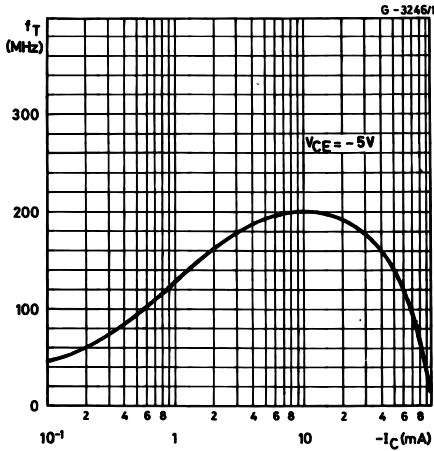


Collector-base Capacitance.

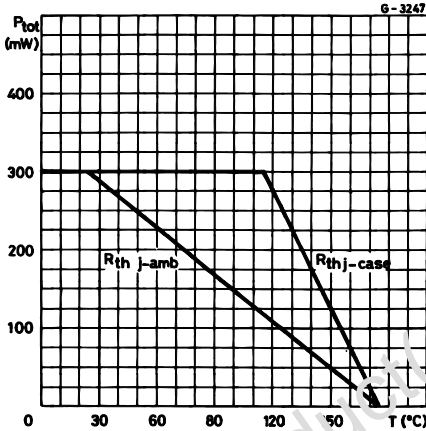


**BC177 - BC177B**

Transition Frequency.



Power Rating Chart.

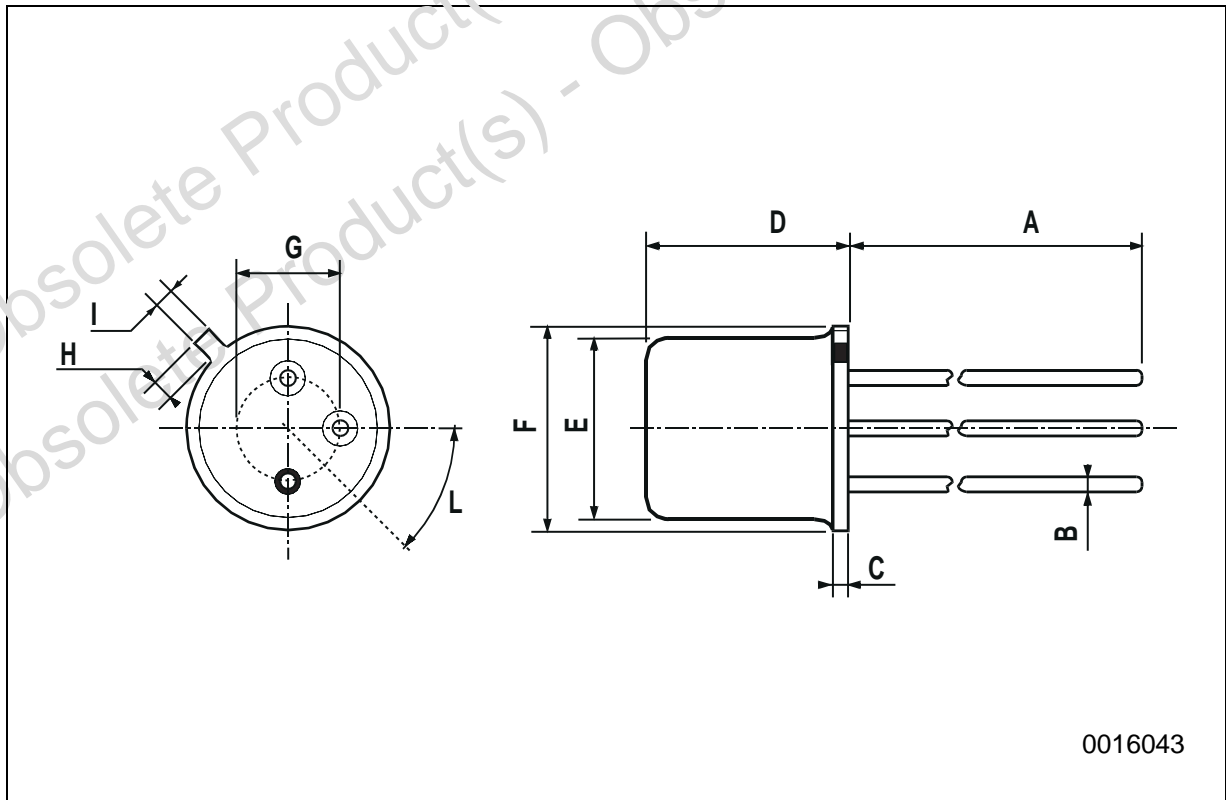


Obsolete Product(s) - Obsolete Product(s)  
 Obsolete Product(s) - Obsolete Product(s)



**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			0.203
E			4.9			0.193
F			5.8			0.228
G	2.54			0.100		
H			1.2			0.047
I			.16			0.045
L	45°			45°		



Obsolete Product(s) - Obsolete Product(s)  
Obsolete Product(s) - Obsolete Product(s)

Information furnished is believed to be accurate and reliable. However, STMicroelectronics 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 result from its use. No license is granted by implication or otherwise under any patent or patent rights of STMicroelectronics. Specification mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information previously supplied. STMicroelectronics products are not authorized for use as critical components in life support devices or systems without express written approval of STMicroelectronics.

The ST logo is a trademark of STMicroelectronics

© 2002 STMicroelectronics – Printed in Italy – All Rights Reserved

STMicroelectronics GROUP OF COMPANIES

Australia - Brazil - Canada - China - Finland - France - Germany - Hong Kong - India - Israel - Italy - Japan - Malaysia - Malta - Morocco - Singapore - Spain - Sweden - Switzerland - United Kingdom - United States.

<http://www.st.com>