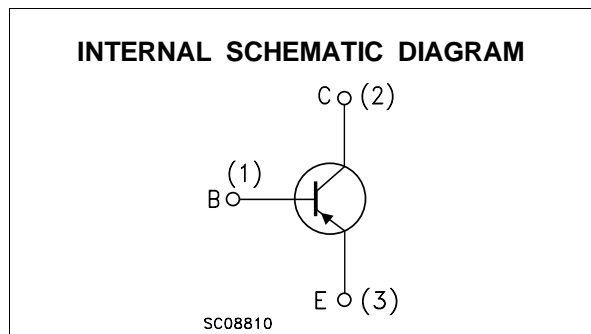
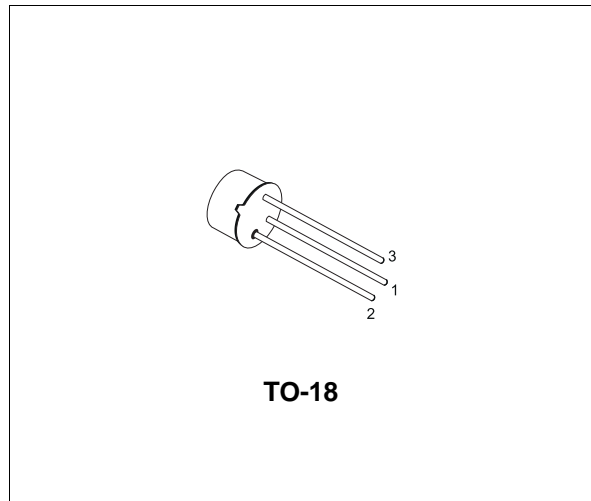


## LOW NOISE GENERAL PURPOSE AUDIO AMPLIFIERS

### DESCRIPTION

The BC107 and BC107B are silicon Planar Epitaxial NPN 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 PNP complementary types are BC177 and BC177B respectively.



### ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
$V_{CBO}$	Collector-Base Voltage ( $I_E = 0$ )	50	V
$V_{CEO}$	Collector-Emitter Voltage ( $I_B = 0$ )	45	V
$V_{EBO}$	Emitter-Base Voltage ( $I_C = 0$ )	6	V
$I_C$	Collector Current	100	mA
$P_{tot}$	Total Dissipation at $T_{amb} \leq 25\text{ }^\circ\text{C}$ at $T_C \leq 25\text{ }^\circ\text{C}$	0.3	W
		0.75	W
$T_{stg}$	Storage Temperature	-55 to 175	$^\circ\text{C}$
$T_j$	Max. Operating Junction Temperature	175	$^\circ\text{C}$

## BC107 / BC107B

### THERMAL DATA

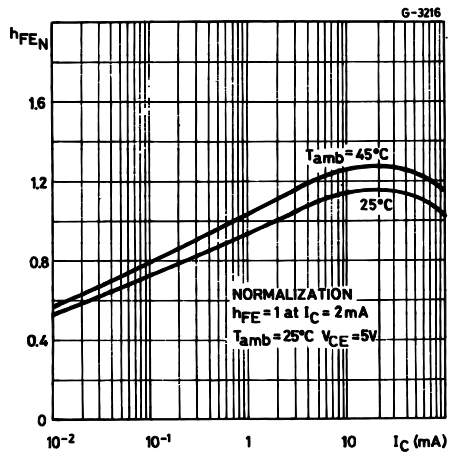
R <sub>thj-case</sub>	Thermal Resistance Junction-Case	Max	200	°C/W
R <sub>thj-amb</sub>	Thermal Resistance Junction-Ambient	Max	500	°C/W

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

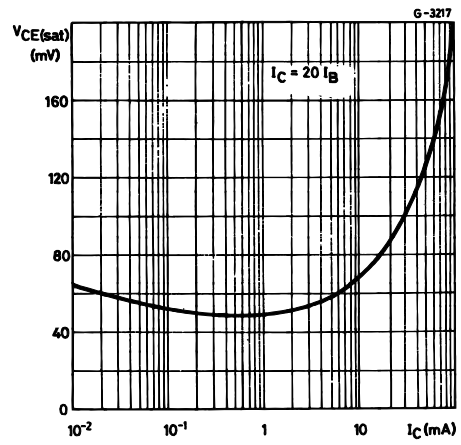
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I <sub>CBO</sub>	Collector Cut-off Current (I <sub>E</sub> = 0)	V <sub>CB</sub> = 40 V V <sub>CB</sub> = 40 V T <sub>C</sub> = 150 °C			15 15	nA μA
V <sub>(BR)CBO</sub>	Collector-Base Breakdown Voltage (I <sub>E</sub> = 0)	I <sub>C</sub> = 10 μA	50			V
V <sub>(BR)CEO*</sub>	Collector-Emitter Breakdown Voltage (I <sub>B</sub> = 0)	I <sub>C</sub> = 10 mA	45			V
V <sub>(BR)EBO</sub>	Emitter-Base Breakdown Voltage (I <sub>C</sub> = 0)	I <sub>E</sub> = 10 μA	6			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		70 200	250 600	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		750 950		mV mV
V <sub>BE(on)*</sub>	Base-Emitter On Voltage	I <sub>C</sub> = 2 mA V <sub>CE</sub> = 5 V I <sub>C</sub> = 10 mA V <sub>CE</sub> = 5 V	550	650 700	700 770	mV mV
h <sub>FE*</sub>	DC Current Gain	I <sub>C</sub> = 2 mA V <sub>CE</sub> = 5 V for <b>BC107</b> for <b>BC107B</b> I <sub>C</sub> = 10 μA V <sub>CE</sub> = 5 V for <b>BC107</b> for <b>BC107B</b>	110 200 40	120 150	450 450	
h <sub>fe*</sub>	Small Signal Current Gain	I <sub>C</sub> = 2 mA V <sub>CE</sub> = 5 V f = 1 KHz for <b>BC107</b> for <b>BC107B</b> I <sub>C</sub> = 10 mA V <sub>CE</sub> = 10 V f = 100 MHz		250 300 2		
C <sub>CBO</sub>	Collector-Base Capacitance	I <sub>E</sub> = 0 V <sub>CB</sub> = 10 V f = 1MHz		4	6	pF
C <sub>EBO</sub>	Emitter-Base Capacitance	I <sub>C</sub> = 0 V <sub>EB</sub> = 0.5 V f = 1MHz		12		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 for <b>BC107</b> for <b>BC107B</b>		4 4.8		KΩ KΩ
h <sub>re</sub>	Reverse Voltage Ratio	I <sub>C</sub> = 2 mA V <sub>CE</sub> = 5 V f = 1KHz for <b>BC107</b> for <b>BC107B</b>		2.2 2.7		10 <sup>-4</sup> 10 <sup>-4</sup>
h <sub>oe</sub>	Output Admittance	I <sub>C</sub> = 2 mA V <sub>CE</sub> = 5 V f = 1KHz for <b>BC107</b> for <b>BC107B</b>		30 26		μS μS

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

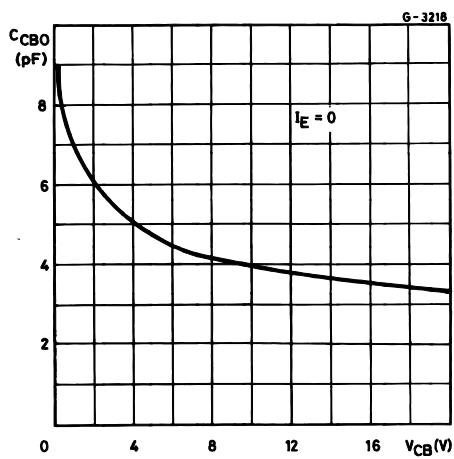
DC Normalized Current Gain.



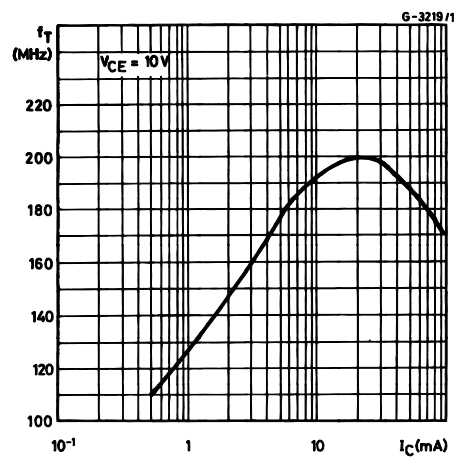
Collector-Emitter Saturation Voltage



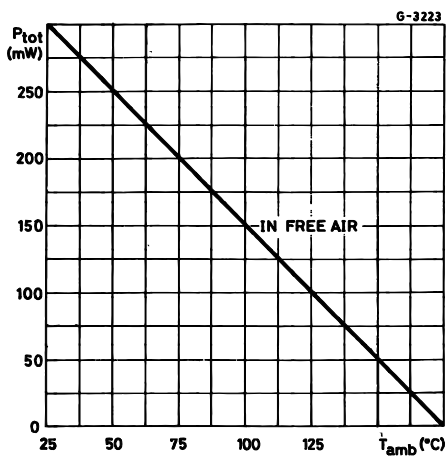
Collector-Base Capacitance



Transition Frequency

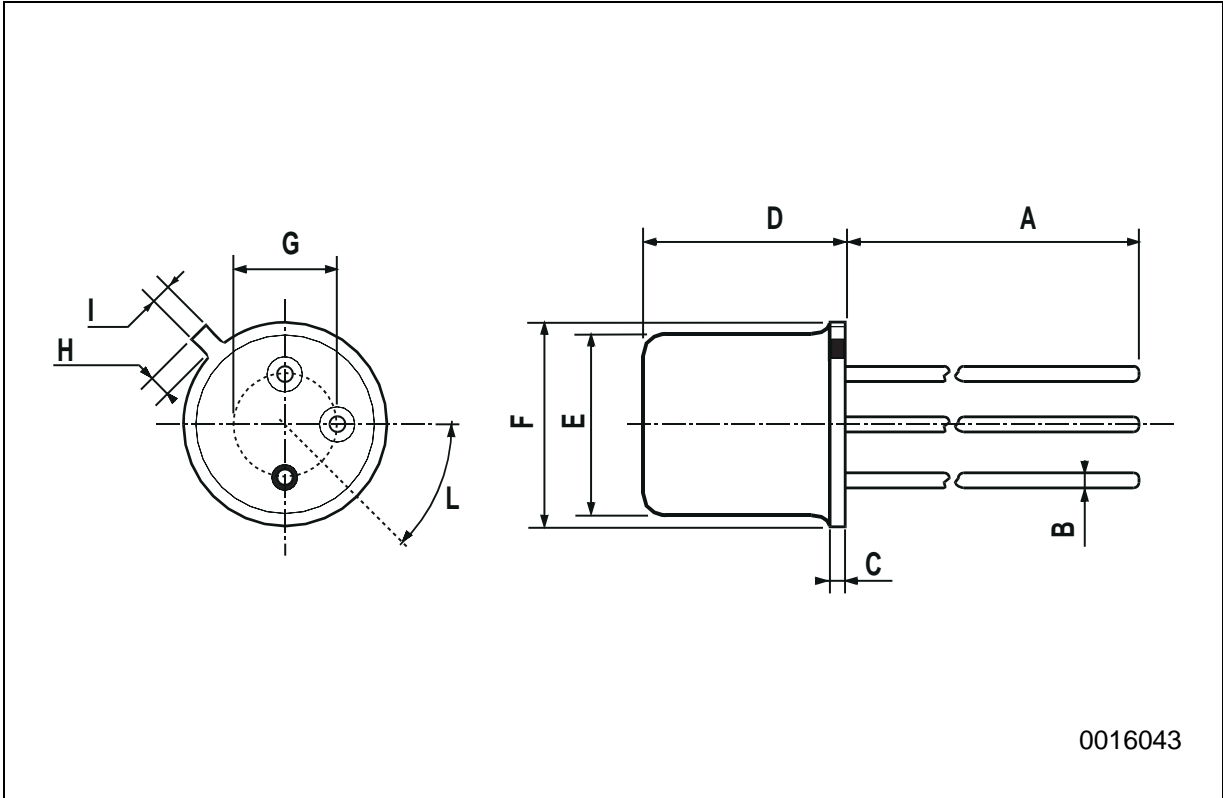


Power Rating Chart



**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°		



0016043

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>

This datasheet has been download from:

[www.datasheetcatalog.com](http://www.datasheetcatalog.com)

Datasheets for electronics components.