

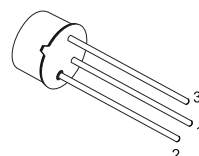


BC107 BC107B

LOW NOISE GENERAL PURPOSE AUDIO AMPLIFIERS

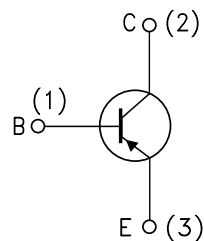
DESCRIPTION

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.



TO-18

INTERNAL SCHEMATIC DIAGRAM



SC08810

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 0.75	W 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

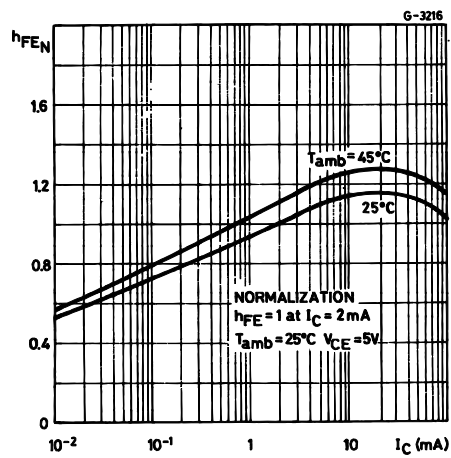
R _{thj-case}	Thermal Resistance Junction-Case	Max	200	°C/W
R _{thj-amb}	Thermal Resistance Junction-Ambient	Max	500	°C/W

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

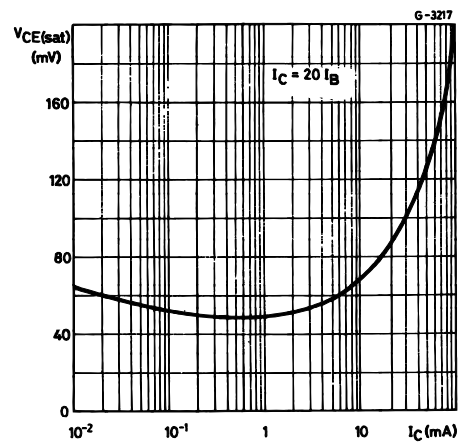
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I _{CBO}	Collector Cut-off Current (I _E = 0)	V _{CB} = 40 V V _{CB} = 40 V T _C = 150 °C			15 15	nA μA
V _{(BR)CBO}	Collector-Base Breakdown Voltage (I _E = 0)	I _C = 10 μA	50			V
V _{(BR)CEO*}	Collector-Emitter Breakdown Voltage (I _B = 0)	I _C =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

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

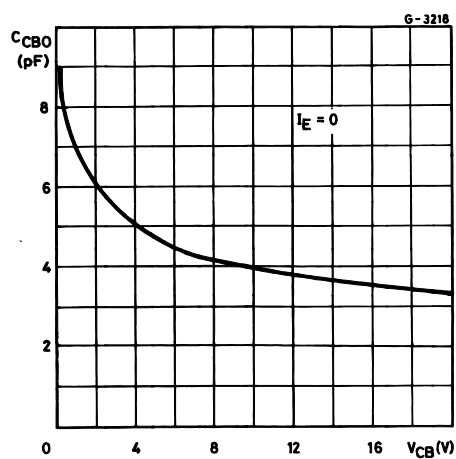
DC Normalized Current Gain.



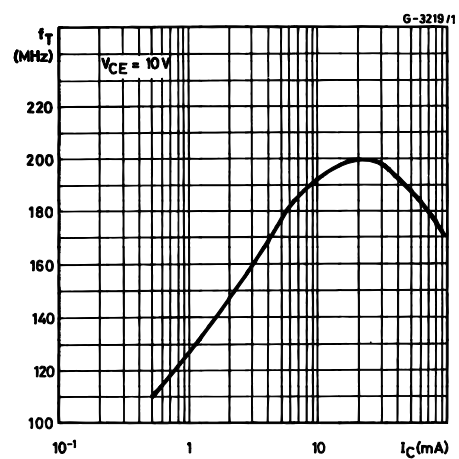
Collector-Emitter Saturation Voltage



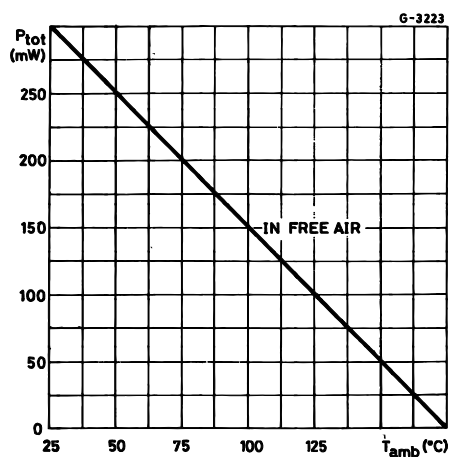
Collector-Base Capacitance



Transition Frequency

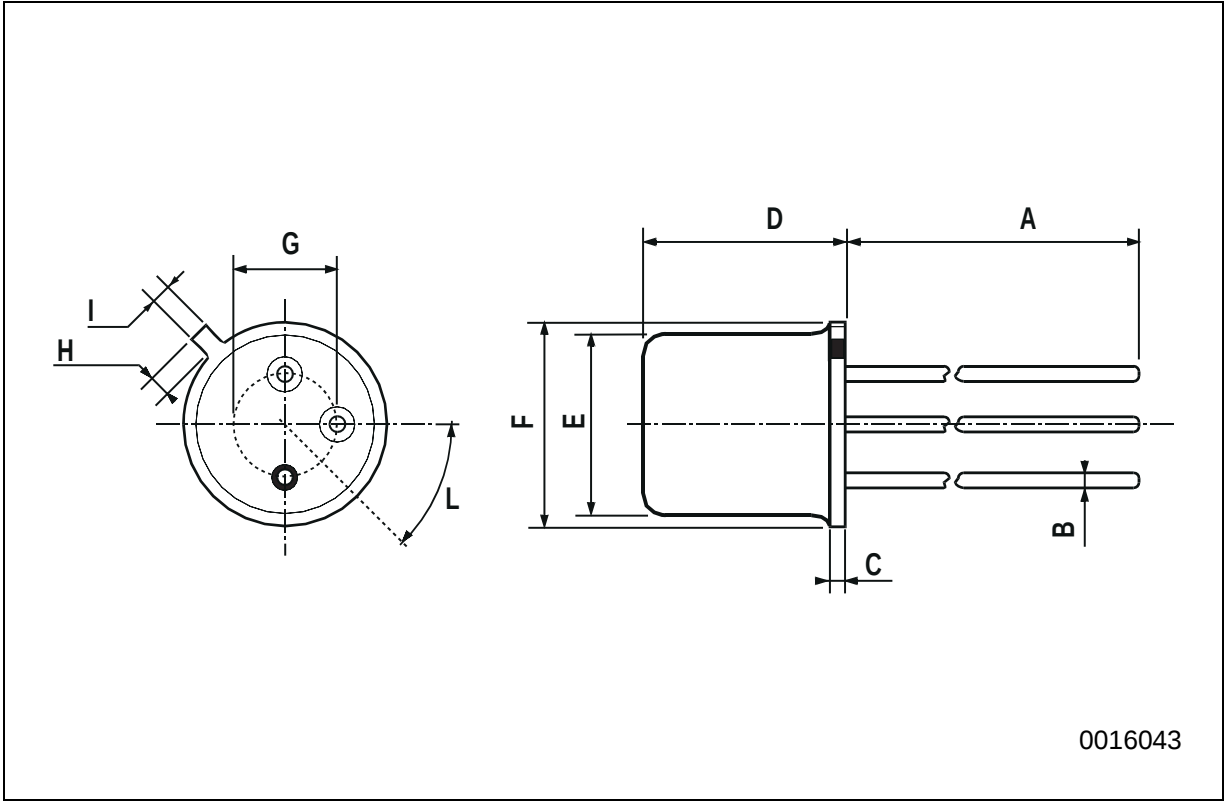


Power Rating Chart



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°		



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