

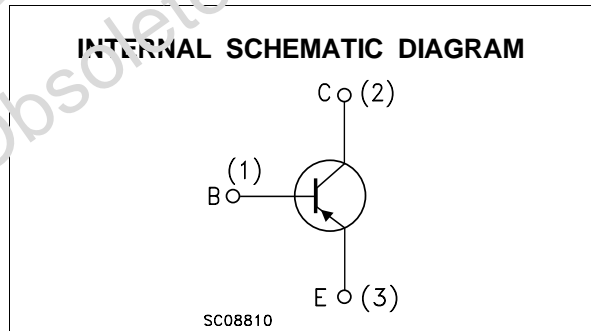
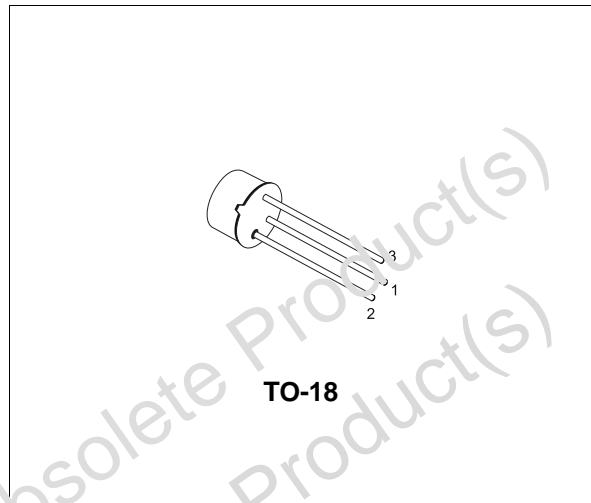


BC177 BC177B

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

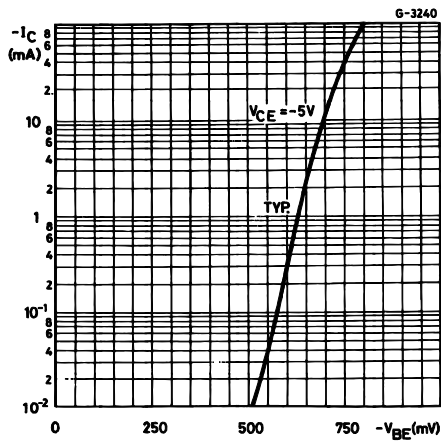
$R_{thj-case}$	Thermal Resistance Junction-Case	Max	200	$^{\circ}C/W$
$R_{thj-amb}$	Thermal Resistance Junction-Ambient	Max	500	$^{\circ}C/W$

ELECTRICAL CHARACTERISTICS ($T_{case} = 25^{\circ}C$ unless otherwise specified)

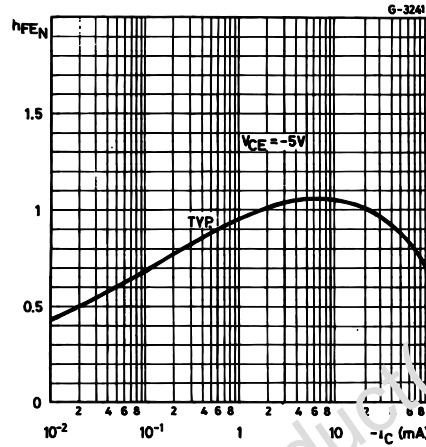
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CES}	Collector Cut-off Current ($V_{BE} = 0$)	$V_{CE} = -20 V$ $V_{CE} = -20 V \quad T_C = 150^{\circ}C$		-1	-100 -10	nA μA
$V_{(BR)CES}$	Collector-Emitter Breakdown Voltage ($V_{BE} = 0$)	$I_C = -10 \mu A$	-50			V
$V_{(BR)CEO}^*$	Collector-Emitter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

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

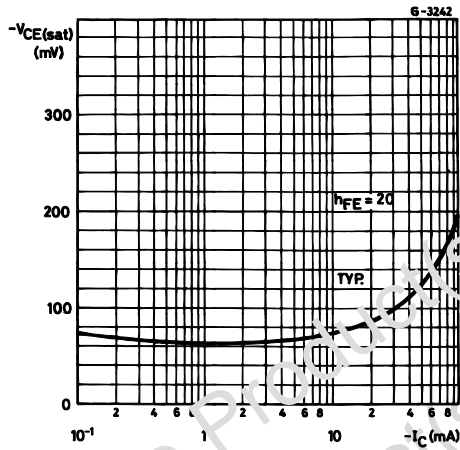
DC Transconductance.



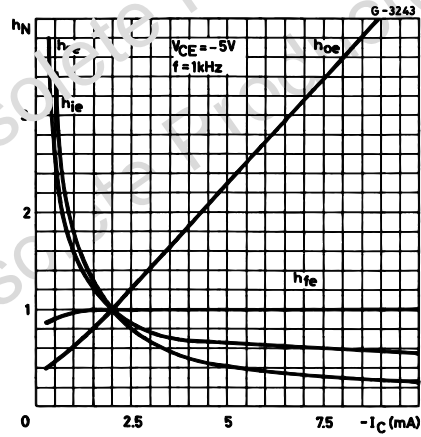
DC Normalized Current Gain.



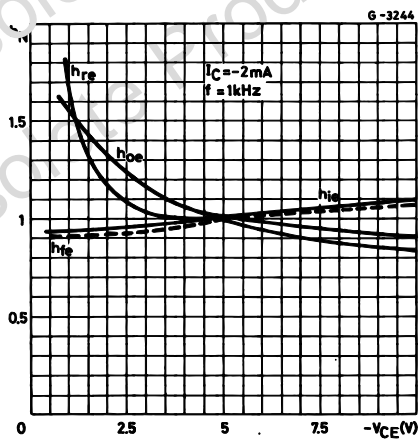
Collector-emitter Saturation Voltage.



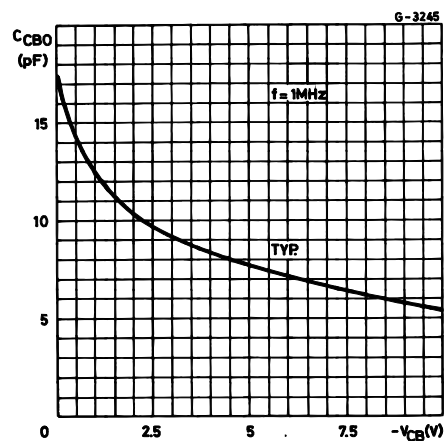
Normalized h Parameters.



Normalized h Parameters.

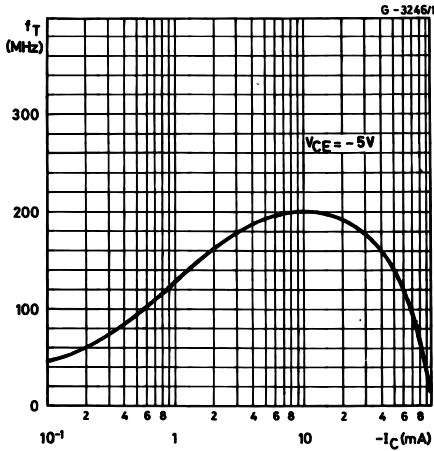


Collector-base Capacitance.

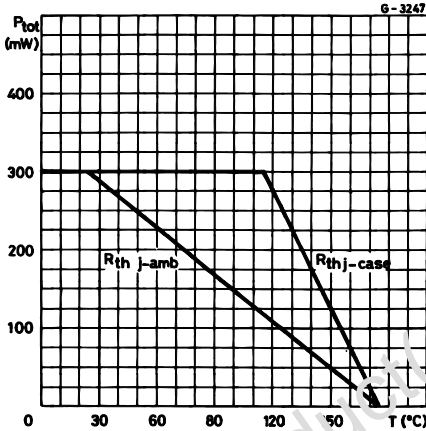


BC177 - BC177B

Transition Frequency.



Power Rating Chart.

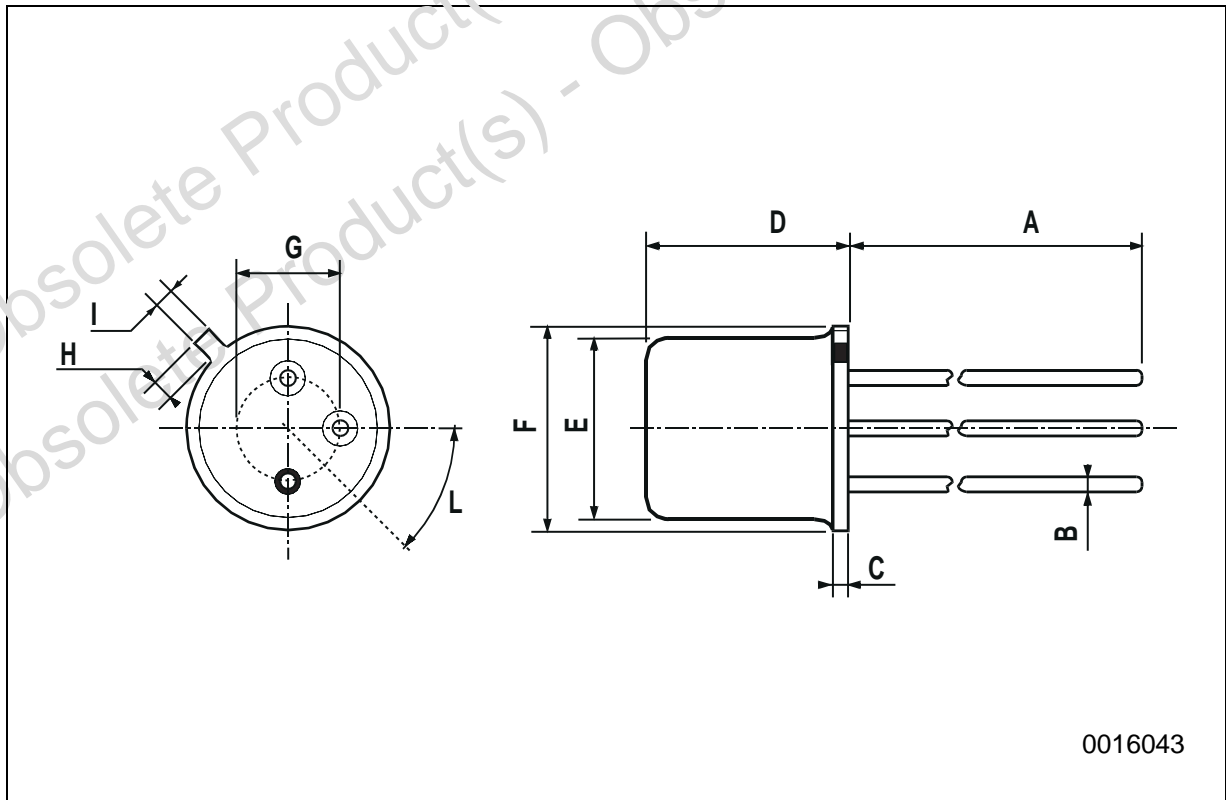


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TO-18 MECHANICAL DATA

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°		



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