

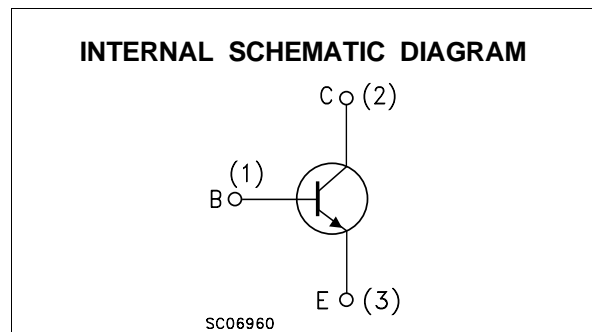
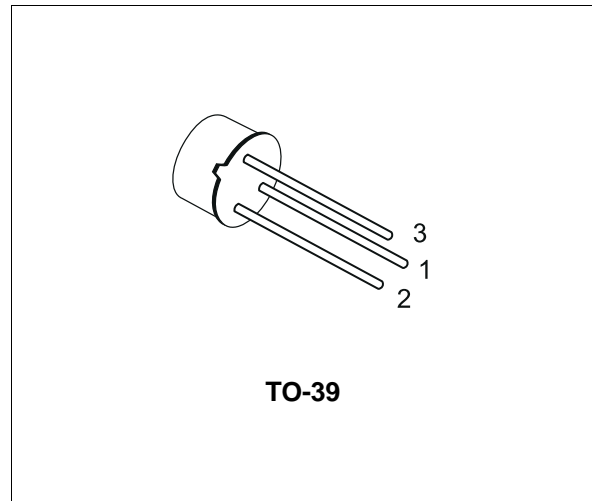


GENERAL PURPOSE TRANSISTOR

DESCRIPTION

The BC141-16 is a silicon Planar Epitaxial NPN transistor in Jedec TO-39 metal case. It is particularly designed for audio amplifiers and switching application up to 1A.

The complementary PNP type is the BC161-16.



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage ($I_E = 0$)	100	V
V_{CEO}	Collector-Emitter Voltage ($I_B = 0$)	60	V
V_{EBO}	Emitter-Base Voltage ($I_C = 0$)	7	V
I_C	Collector Current	1	A
I_B	Base Current	0.1	A
P_{tot}	Total Dissipation at $T_{amb} \leq 25\text{ }^\circ\text{C}$ at $T_C \leq 25\text{ }^\circ\text{C}$	0.65	W
		3.7	W
T_{stg}	Storage Temperature	-55 to 175	$^\circ\text{C}$
T_j	Max. Operating Junction Temperature	175	$^\circ\text{C}$

THERMAL DATA

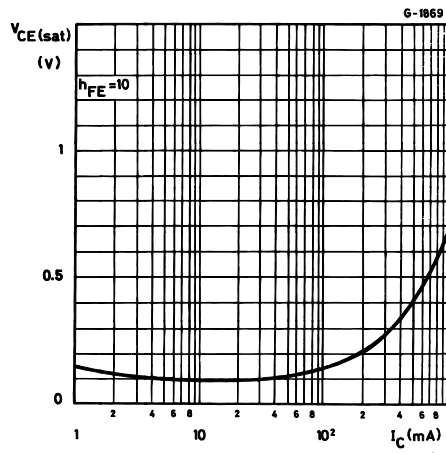
R _{thj-case}	Thermal Resistance Junction-Case	35	°C/W
R _{thj-amb}	Max Thermal Resistance Junction-Ambient	200	°C/W
	Max		

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

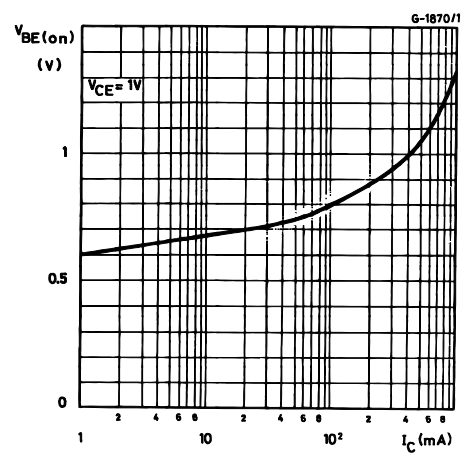
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I _{CES}	Collector Cut-off Current (V _{BE} = 0)	V _{CE} = 60 V V _{CE} = 60 V T _C = 150 °C			100 100	nA μA
V _{(BR)CBO} *	Collector-Base Breakdown Voltage (I _E = 0)	I _C = 100 μA	100			V
V _{(BR)CEO} *	Collector-Emitter Breakdown Voltage (I _B = 0)	I _C = 30 mA	60			V
V _{(BR)EBO} *	Emitter-Base Breakdown Voltage (I _C = 0)	I _E = 100 μA	7			V
V _{CE(sat)} *	Collector-Emitter Saturation Voltage	I _C = 100 mA I _B = 10 mA I _C = 500 mA I _B = 50 mA I _C = 1 A I _B = 100 mA		0.1 0.35 0.6	1	V V V
V _{BE(on)} *	Base-Emitter On Voltage	I _C = 1 A V _{CE} = 1 V		1.25	1.8	V
h _{FE} *	DC Current Gain	I _C = 100 μA V _{CE} = 1 V I _C = 100 mA V _{CE} = 1 V I _C = 1 A V _{CE} = 1 V	100	90 160 30	250	
f _T	Transition Frequency	I _C = 50 mA V _{CE} = 10 V	50			MHz
C _{CBO}	Collector-Base Capacitance	I _E = 0 V _{CB} = 5 V f = 1MHz		12	25	pF
t _{on}	Turn-on Time	I _C = 100 mA I _{B1} = 5 mA			250	ns
t _{off}	Turn-off Time	I _C = 100 mA I _{B1} = I _{B2} = 5 mA			850	ns

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

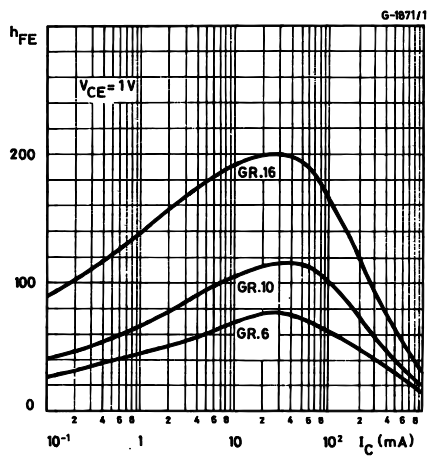
Collector-emitter Saturation Voltage.



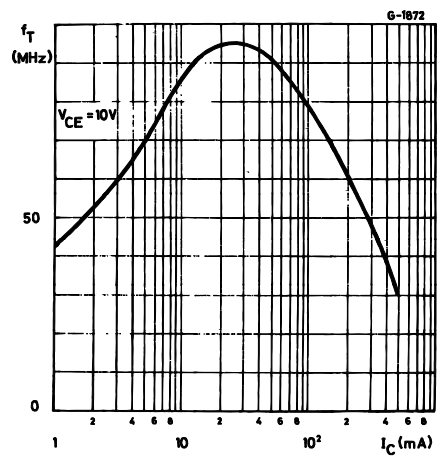
Base-emitter Voltage.



DC Current Gain.

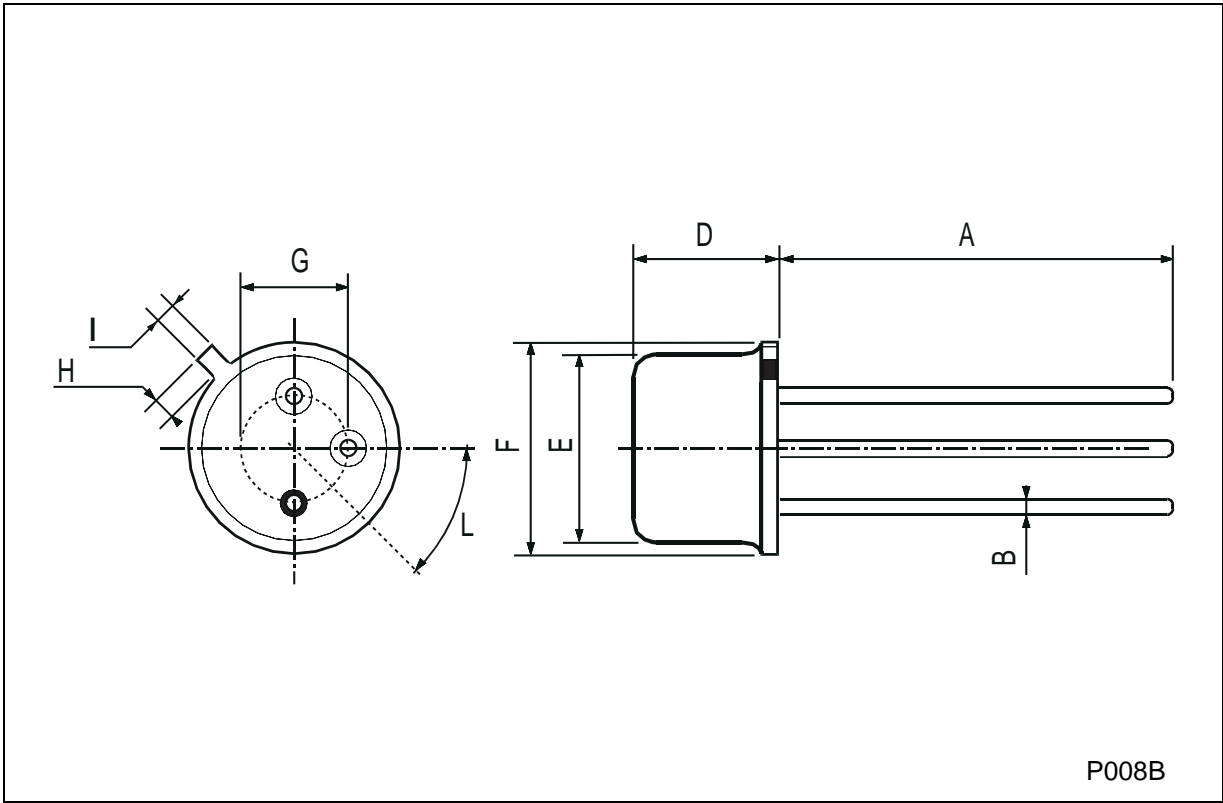


Transition Frequency.



TO-39 MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	12.7			0.500		
B			0.49			0.019
D			6.6			0.260
E			8.5			0.334
F			9.4			0.370
G	5.08			0.200		
H			1.2			0.047
I			0.9			0.035
L	45° (typ.)					



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