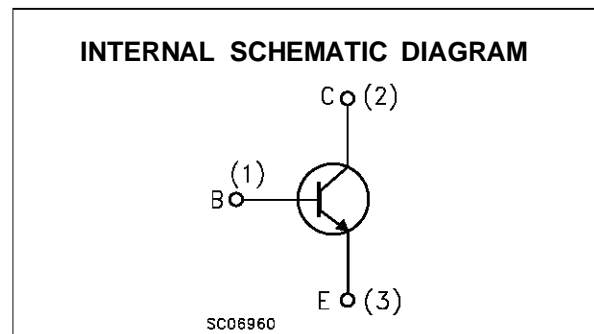
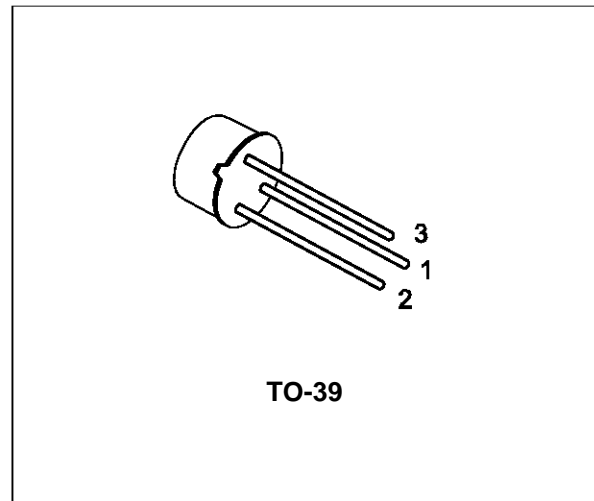


## GENERAL PURPOSE TRANSISTORS

**DESCRIPTION**

The BC141 is a silicon planar epitaxial NPN transistors in Jedec TO-39 metal case. They are particularly designed for audio amplifiers and switching application up to 1A.

The complementary PNP type is the BC161.


**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 $T_{amb} \leq 45^\circ\text{C}$ at $T_{case} \leq 45^\circ\text{C}$	0.65	W
		3.7	W
$T_{stg}$	Storage Temperature	-55 to 175	$^\circ\text{C}$
$T_j$	Max. Operating Junction Temperature	175	$^\circ\text{C}$

# BC141

## THERMAL DATA

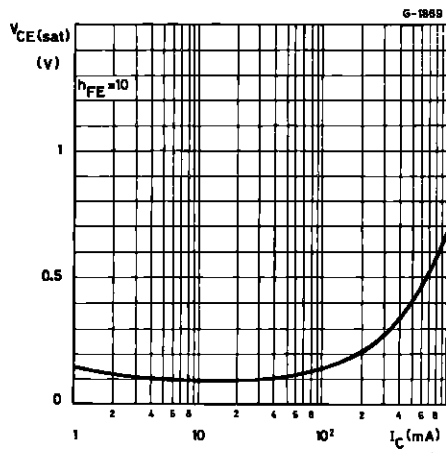
$R_{thj-case}$	Thermal Resistance Junction-Case	Max	35	$^{\circ}C/W$
$R_{thj-amb}$	Thermal Resistance Junction-Ambient	Max	200	$^{\circ}C/W$

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

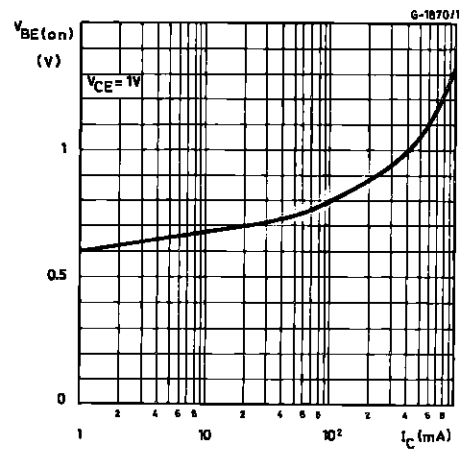
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$I_{CES}$	Collector Cut-off Current ( $V_{BE} = 0$ )	$V_{CE} = 60 V$ $V_{CE} = 60 V \quad T_{amb} = 150^{\circ}C$			100 100	nA $\mu A$
$V_{(BR)CBO}^*$	Collector-Base Breakdown Voltage ( $I_E = 0$ )	$I_C = 100 \mu A$	100			V
$V_{(BR)CEO}^*$	Collector-Emitter Breakdown Voltage ( $I_B = 0$ )	$I_C = 30 mA$	60			V
$V_{(BR)EBO}^*$	Emitter-Base Breakdown Voltage ( $I_C = 0$ )	$I_E = 100 \mu A$	7			V
$V_{CE(sat)}^*$	Collector-Emitter Saturation Voltage	$I_C = 100 mA \quad I_B = 10 mA$ $I_C = 500 mA \quad I_B = 50 mA$ $I_C = 1 A \quad I_B = 100 mA$		0.1 0.35 0.6	1	V V V
$V_{BE(on)}^*$	Base-Emitter On Voltage	$I_C = 1 A \quad V_{CE} = 1 V$		1.25	1.8	V
$h_{FE}^*$	DC Current Gain	$I_C = 100 \mu A \quad V_{CE} = 1 V$ for <b>BC141</b> for <b>BC141</b> Gr. 6 for <b>BC141</b> Gr. 10 for <b>BC141</b> Gr. 16 $I_C = 100 mA \quad V_{CE} = 1 V$ for <b>BC141</b> for <b>BC141</b> Gr. 6 for <b>BC141</b> Gr. 10 for <b>BC141</b> Gr. 16 $I_C = 1 A \quad V_{CE} = 1 V$ for <b>BC141</b> for <b>BC141</b> Gr. 6 for <b>BC141</b> Gr. 10 for <b>BC141</b> Gr. 16		75 28 40 90  40 40 63 63 100  26 15 20 30	250 100 160 250	
$f_T$	Transition Frequency	$I_C = 50 mA \quad V_{CE} = 10 V$	50			MHz
$C_{CBO}$	Collector Base Capacitance	$I_E = 0 \quad V_{CB} = 5 V \quad f = 1 MHz$		12	25	pF
$t_{on}$	Turn-on Time	$I_C = 100 mA \quad I_{B1} = 5 mA$			250	ns
$t_{off}$	Turn-off Time	$I_C = 100 mA \quad I_{B1} = I_{B2} = 5 mA$			850	ns

\* Pulsed: Pulse duration = 300  $\mu s$ , duty cycle  $\leq 1\%$

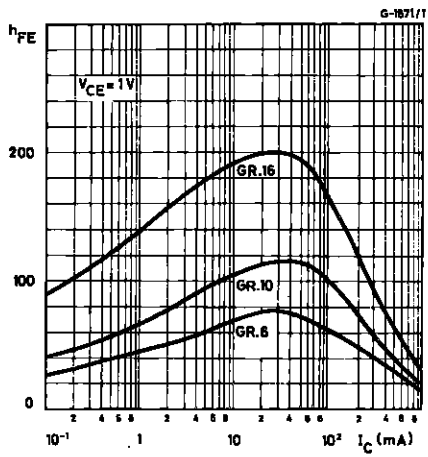
Collector-emitter Saturation Voltage.



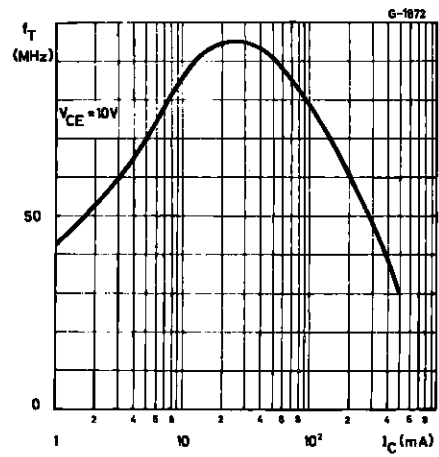
Base-emitter Voltage.



DC Current Gain.

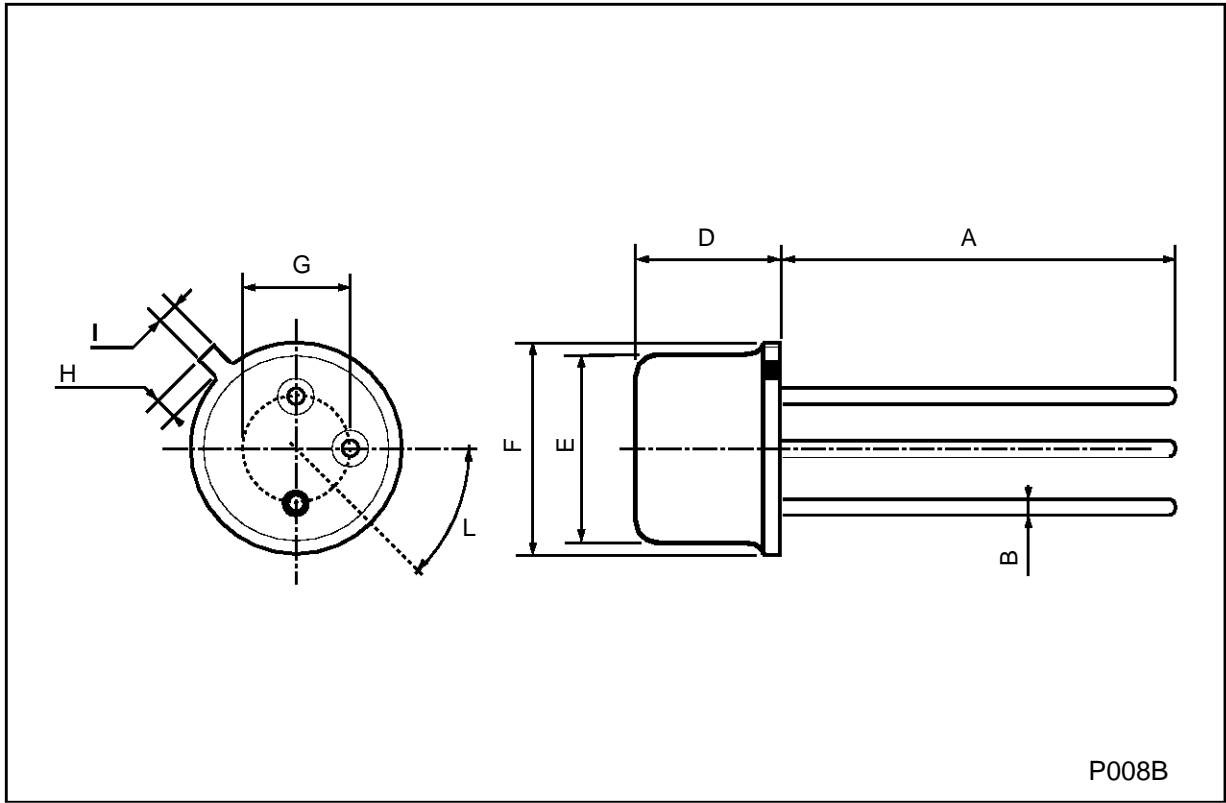


Transition Frequency.



**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.)					



P008B

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