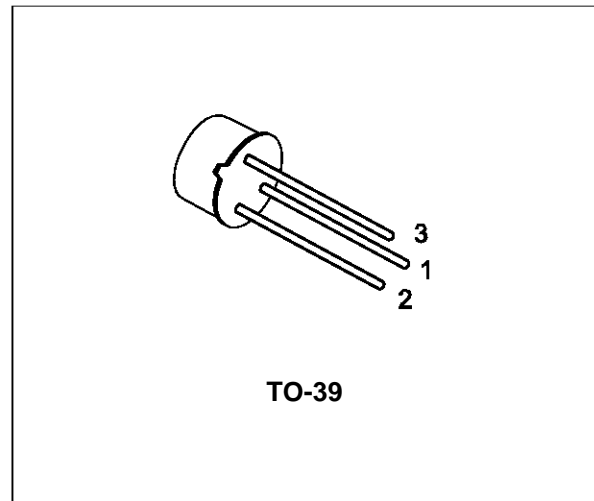
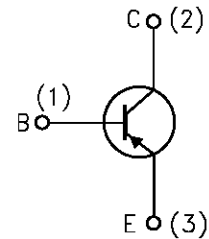


## GENERAL PURPOSE TRANSISTORS

**DESCRIPTION**

The BC161 is a silicon planar epitaxial PNP transistors in Jedec TO-39 metal case. They are particularly designed for audio amplifiers and switching application up to 1A.

The complementary NPN type is the BC141.


**INTERNAL SCHEMATIC DIAGRAM**

**ABSOLUTE MAXIMUM RATINGS**

Symbol	Parameter	Value	Unit
$V_{CBO}$	Collector-Base Voltage ( $I_E = 0$ )	-60	V
$V_{CEO}$	Collector-Emitter Voltage ( $I_B = 0$ )	-60	V
$V_{EBO}$	Emitter-Base Voltage ( $I_C = 0$ )	-5	V
$I_C$	Collector Current	-1	A
$I_B$	Base Current	-0.1	A
$P_{tot}$	Total Dissipation at $T_{amb} \leq 45\text{ }^\circ\text{C}$ at $T_{case} \leq 45\text{ }^\circ\text{C}$	0.65	W
		3.7	W
$T_{stg}$	Storage Temperature	-55 to 175	$^\circ\text{C}$
$T_j$	Max. Operating Junction Temperature	175	$^\circ\text{C}$

# BC161

## THERMAL DATA

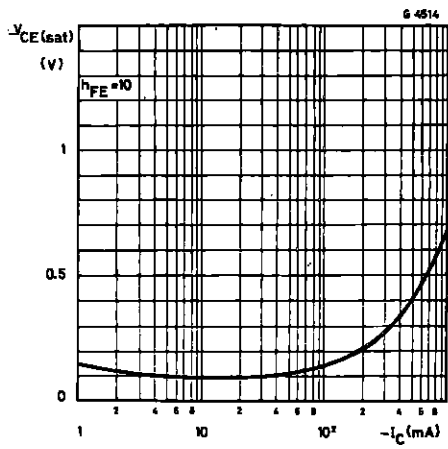
$R_{thj-case}$	Thermal Resistance Junction-Case	Max	35	$^{\circ}C/W$
$R_{thj-amb}$	Thermal Resistance Junction-Ambient	Max	200	$^{\circ}C/W$

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

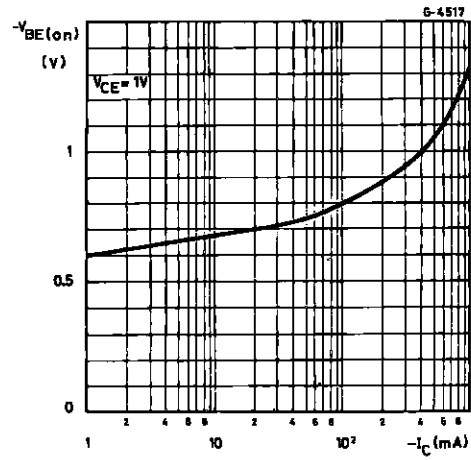
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$I_{CES}$	Collector Cut-off Current ( $V_{BE} = 0$ )	$V_{CE} = -60 V$ $V_{CE} = -60 V \quad T_{amb} = 150^{\circ}C$			-100 -100	nA $\mu A$
$V_{(BR)CBO}^*$	Collector-Base Breakdown Voltage ( $I_E = 0$ )	$I_C = -100 \mu A$	-60			V
$V_{(BR)CEO}^*$	Collector-Emitter Breakdown Voltage ( $I_B = 0$ )	$I_C = -10 mA$	-60			V
$V_{(BR)EBO}^*$	Emitter-Base Breakdown Voltage ( $I_C = 0$ )	$I_E = -100 \mu A$	-5			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	-1.7	V
$h_{FE}^*$	DC Current Gain	$I_C = -100 \mu A \quad V_{CE} = -1 V$ for <b>BC161</b> for <b>BC161</b> Gr. 6 for <b>BC161</b> Gr. 10 for <b>BC161</b> Gr. 16 $I_C = -100 mA \quad V_{CE} = -1 V$ for <b>BC161</b> for <b>BC161</b> Gr. 6 for <b>BC161</b> Gr. 10 for <b>BC161</b> Gr. 16 $I_C = -1 A \quad V_{CE} = -1 V$ for <b>BC161</b> for <b>BC161</b> Gr. 6 for <b>BC161</b> Gr. 10 for <b>BC161</b> Gr. 16		110 46 80 120 40 40 63 100 100 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	$I_E = 0 \quad V_{CB} = -20 V \quad f = 1MHz$		15	30	pF
$C_{EBO}$	Emitter Base Capacitance	$I_C = 0 \quad V_{CB} = -0.5 V \quad f = 1MHz$			180	pF
$t_{on}$	Turn-on Time	$I_C = -100 mA \quad I_{B1} = -5 mA$			500	ns
$t_{off}$	Turn-off Time	$I_C = -100 mA \quad I_{B1} = I_{B2} = -5 mA$			650	ns

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

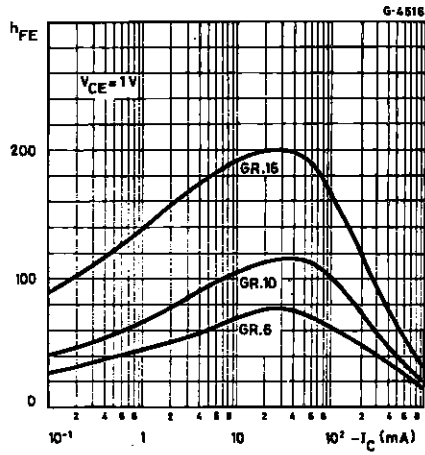
Collector-emitter Saturation Voltage.



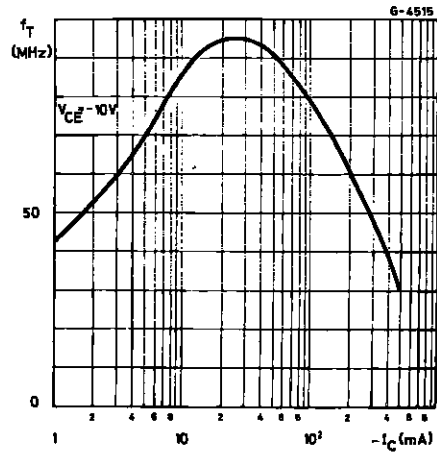
Base-emitter Voltage.



DC Current Gain.

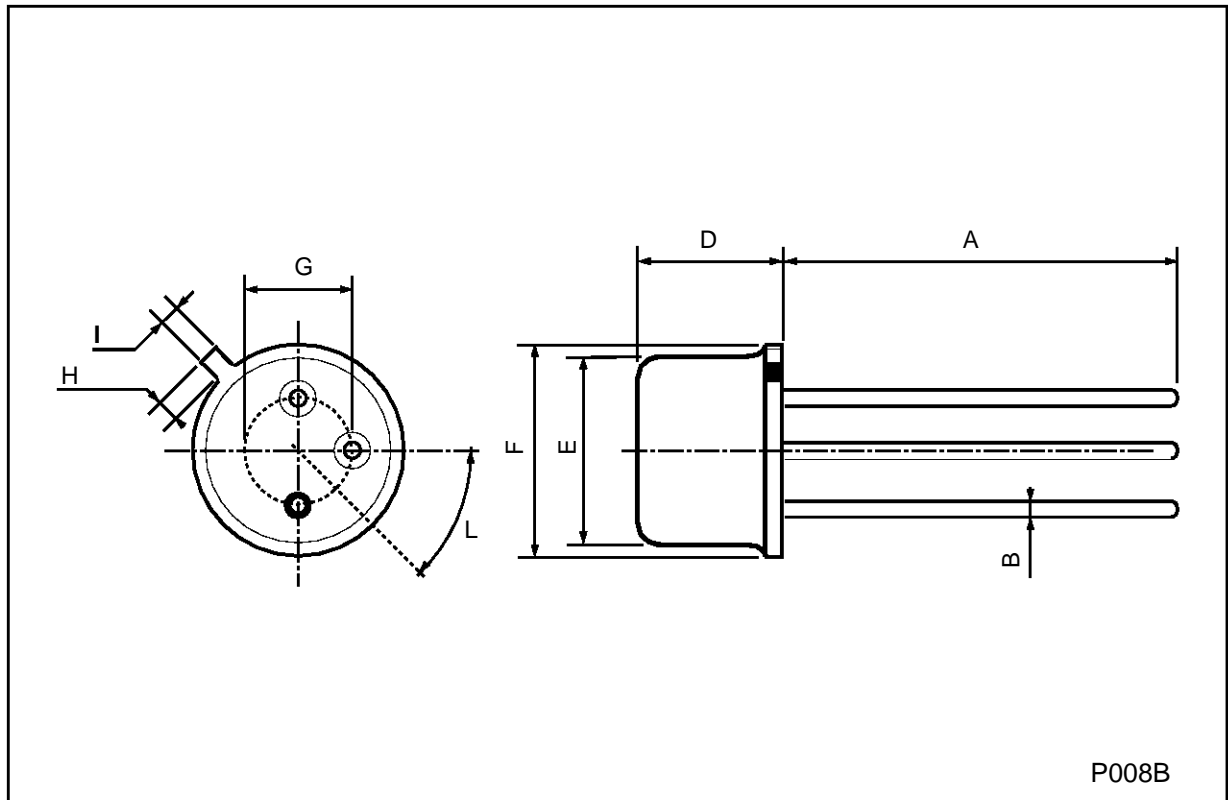


Transition Frequency.



**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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