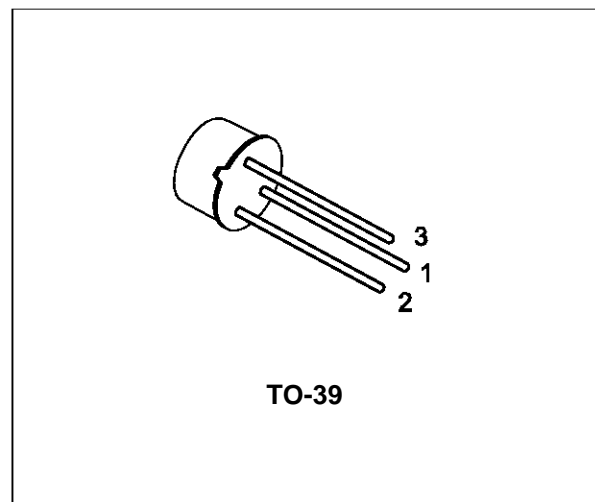
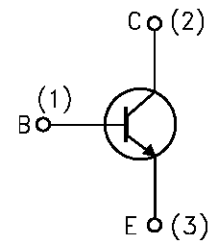


GENERAL PURPOSE TRANSISTORS

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.


INTERNAL SCHEMATIC DIAGRAM

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

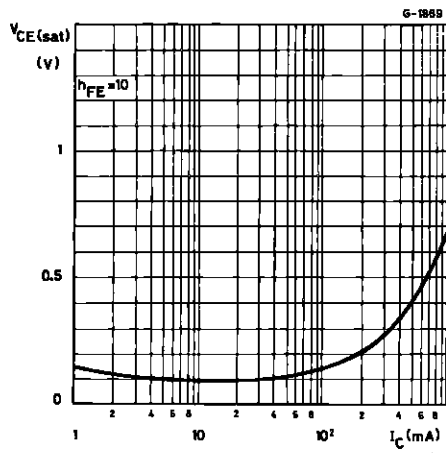
$R_{thj-case}$	Thermal Resistance Junction-Case	Max	35	$^{\circ}C/W$
$R_{thj-amb}$	Thermal Resistance Junction-Ambient	Max	200	$^{\circ}C/W$

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

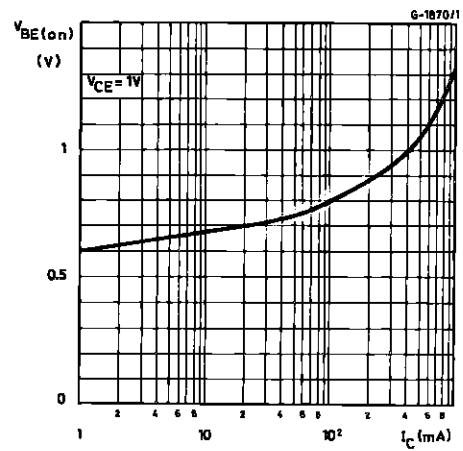
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CES}	Collector Cut-off Current ($V_{BE} = 0$)	$V_{CE} = 60 V$ $V_{CE} = 60 V \quad T_{amb} = 150^{\circ}C$			100 100	nA μA
$V_{(BR)CBO}^*$	Collector-Base Breakdown Voltage ($I_E = 0$)	$I_C = 100 \mu A$	100			V
$V_{(BR)CEO}^*$	Collector-Emitter Breakdown 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 BC141 for BC141 Gr. 6 for BC141 Gr. 10 for BC141 Gr. 16 $I_C = 100 mA \quad V_{CE} = 1 V$ for BC141 for BC141 Gr. 6 for BC141 Gr. 10 for BC141 Gr. 16 $I_C = 1 A \quad V_{CE} = 1 V$ for BC141 for BC141 Gr. 6 for BC141 Gr. 10 for BC141 Gr. 16		75 28 40 90 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	$I_E = 0 \quad V_{CB} = 5 V \quad f = 1 MHz$		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 μs , duty cycle $\leq 1\%$

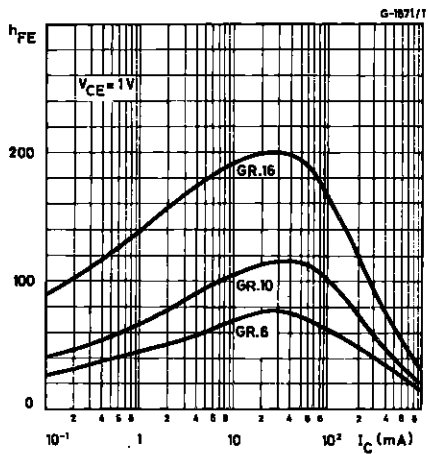
Collector-emitter Saturation Voltage.



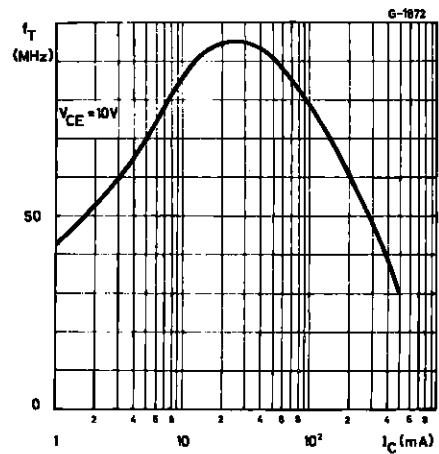
Base-emitter Voltage.



DC Current Gain.

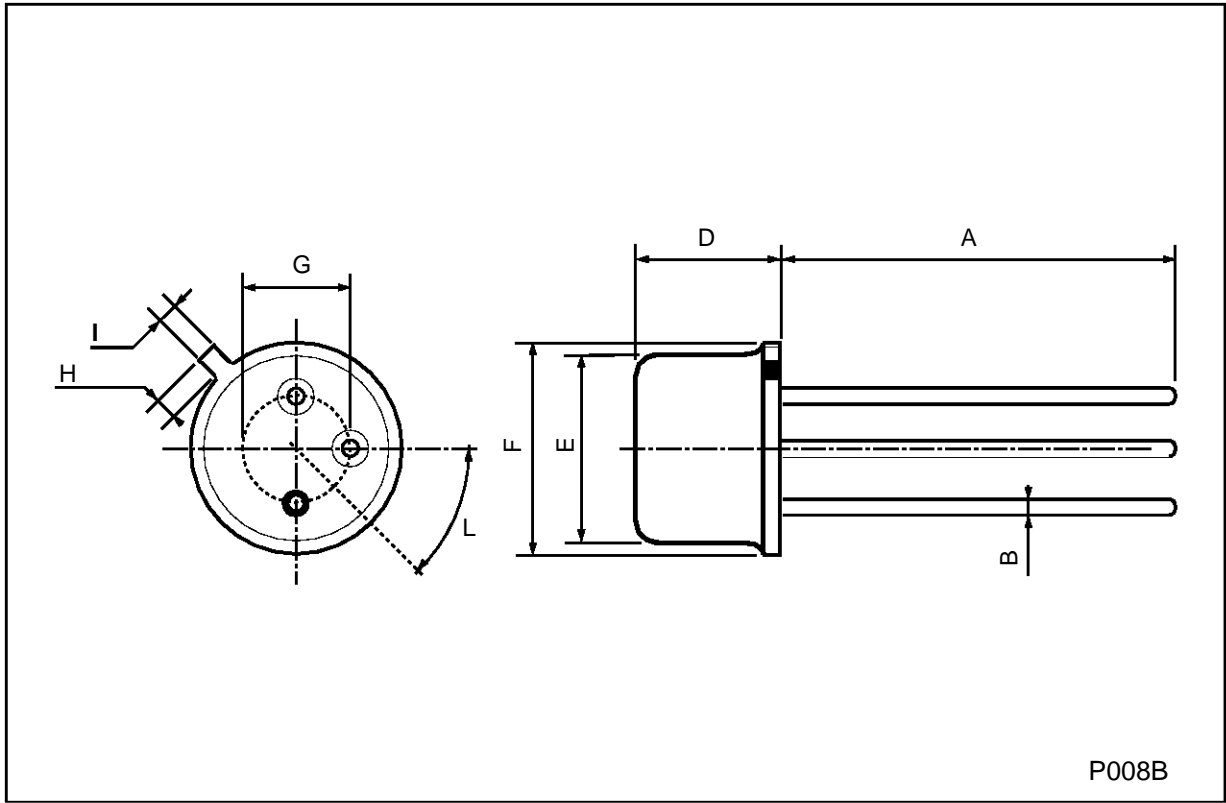


Transition Frequency.



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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