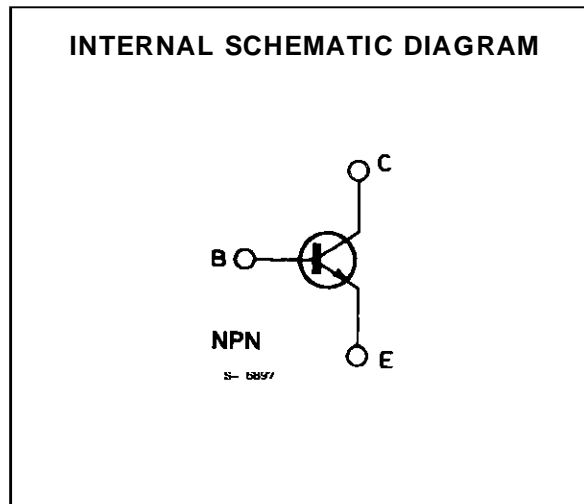
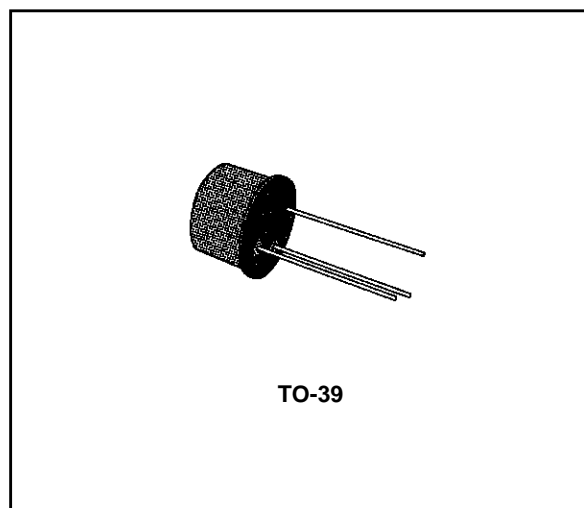


AUDIO AMPLIFIER
DESCRIPTION

The BC142 is a silicon planar epitaxial NPN transistor in a TO-39 metal case specially intended for use as driver in high power audio amplifier.


ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-base Voltage ($I_E = 0$)	80	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
P_{tot}	Total Power Dissipation at $T_{amb} \leq 25\text{ }^\circ\text{C}$ at $T_{case} \leq 25\text{ }^\circ\text{C}$	0.75	W
		4	W
T_{stg}, T_j	Storage and Junction Temperature	- 55 to 175	$^\circ\text{C}$

BC142

THERMAL DATA

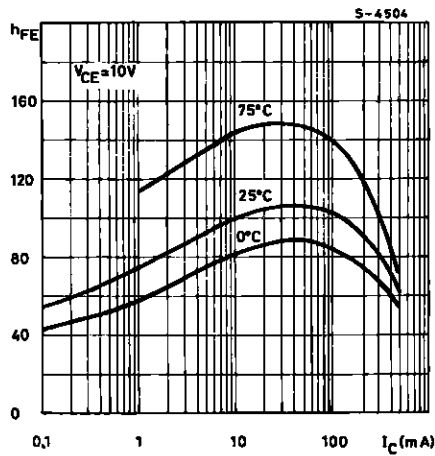
$R_{th\ j-case}$	Thermal Resistance Junction-case	Max	37	$^{\circ}C/W$
$R_{th\ j-amb}$	Thermal Resistance Junction-ambient	Max	200	$^{\circ}C/W$

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

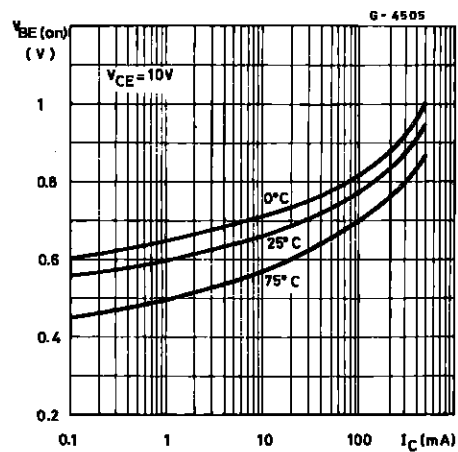
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CBO}	Collector Cutoff Current ($I_E = 0$)	$V_{CB} = 40\ V$ $V_{CB} = 40\ V$ $T_{amb} = 150^{\circ}C$			50 50	nA μA
$V_{(BR)CBO}$	Collector-base Breakdown Voltage ($I_E = 0$)	$I_C = 100\ \mu A$	80			V
$V_{(BR)CEO}^*$	Collector-emitter Breakdown Voltage ($I_B = 0$)	$I_C = 30\ mA$	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	$I_C = 200\ mA$ $I_C = 20\ mA$ $I_B = 500\ mA$ $I_B = 50\ mA$		0.15 0.3	0.4	V V
$V_{BE(sat)}^*$	Base-emitter Saturation Voltage	$I_C = 200\ mA$ $I_B = 20\ mA$			1.5	V
V_{BE}^*	Base-emitter Voltage	$I_C = 200\ mA$ $V_{CE} = 2\ V$		0.85		V
h_{FE}^*	DC Current Gain	$I_C = 10\ mA$ $V_{CE} = 10\ V$ $I_C = 100\ mA$ $V_{CE} = 10\ V$ $I_C = 200\ mA$ $V_{CE} = 2\ V$ $I_C = 500\ mA$ $V_{CE} = 2\ V$	20	100 100 60 30		
f_T	Transition Frequency	$I_C = 50\ mA$ $V_{CE} = 10\ V$ $f = 20\ MHz$		80		MHz
C_{CBO}	Collector-base Capacitance	$I_E = 0$ $V_{CB} = 10\ V$		12		pF

* Pulsed : pulse duration = 300 μs , duty cycle = 1 %.

DC Current Gain vs. Collector Current.

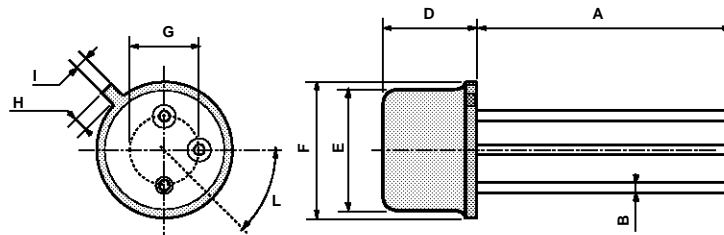


Base-emitter on Voltage vs. Collector Current.



TO39 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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