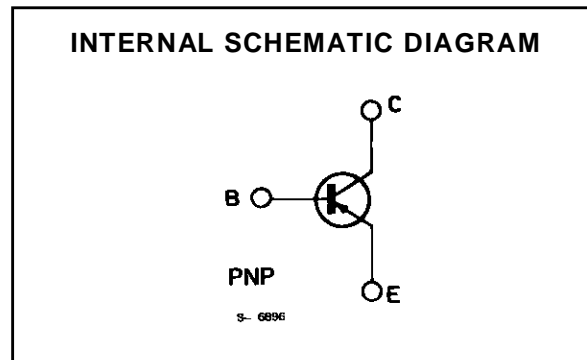
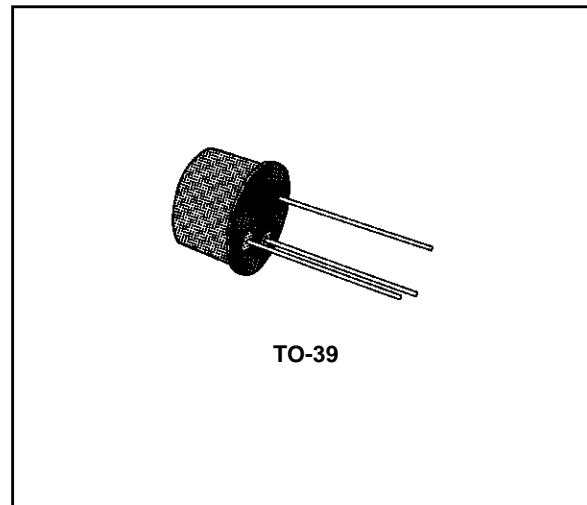


MEDIUM POWER AUDIO DRIVERS

**DESCRIPTION**

The BC303 and BC304 are silicon planar epitaxial PNP transistors in TO-39 metal case. They are intended particularly as audio driver stages in commercial and professional equipments. In addition they are useful as high speed saturated switches and general purpose amplifiers. The complementary NPN types are respectively the BC301 and BC302.



**ABSOLUTE MAXIMUM RATINGS**

Symbol	Parameter	Value		Unit
		BC303	BC304	
$V_{CBO}$	Collector-base Voltage ( $I_E = 0$ )	- 85	- 60	V
$V_{CEO}$	Collector-emitter Voltage ( $I_B = 0$ )	- 60	- 45	V
$V_{EBO}$	Emitter-base Voltage ( $I_C = 0$ )	- 6		V
$I_C$	Collector Current	- 0.5		A
$I_{CM}$	Collector Peak Current	- 1		A
$I_{BM}$	Base Peak Current	- 0.5		A
$P_{tot}$	Total Power Dissipation at $T_{amb} \leq 25\text{ }^\circ\text{C}$ at $T_{case} \leq 25\text{ }^\circ\text{C}$	0.85		W
		6		W
$T_{stg}$	Storage Temperature	- 65 to 175		$^\circ\text{C}$
$T_j$	Junction Temperature	175		$^\circ\text{C}$

# BC303-BC304

## THERMAL DATA

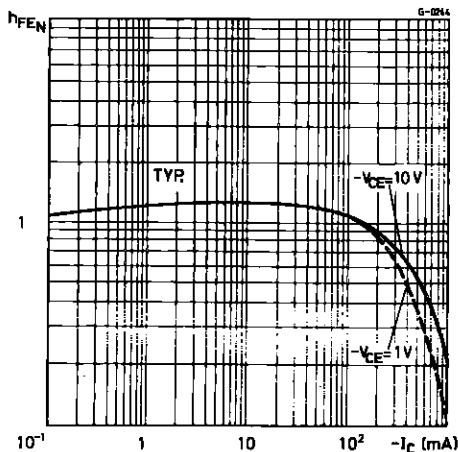
$R_{th\ j-case}$	Thermal Resistance Junction-case	Max	25	°C/W
$R_{th\ j-amb}$	Thermal Resistance Junction-ambient	Max	175	°C/W

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

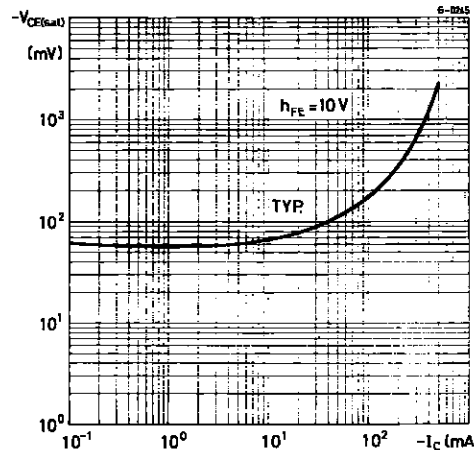
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$I_{CBO}$	Collector Cutoff Current ( $I_E = 0$ )	$V_{CB} = -60\text{ V}$		-5	-20	nA
$I_{EBO}$	Emitter Cutoff Current ( $I_C = 0$ )	$V_{EB} = -5\text{ V}$			-20	nA
$V_{(BR)\ CE}^*$	Collector-emitter Breakdown Voltage ( $I_B = 0$ )	$I_C = -10\text{ mA}$ For <b>BC303</b> For <b>BC304</b>	-60 -45			V V
$V_{CE(sat)}^*$	Collector-emitter Saturation Voltage	$I_C = -150\text{ mA}$ $I_B = -15\text{ mA}$		-0.25	-0.65	V
$V_{BE}^*$	Base-emitter Voltage	$I_C = -150\text{ mA}$ $V_{CE} = -10\text{ V}$		-0.78		V
$h_{FE}^*$	DC Current Gain	Gr.4 $I_C = -150\text{ mA}$ $V_{CE} = -10\text{ V}$ Gr.5 $I_C = -150\text{ mA}$ $V_{CE} = -10\text{ V}$ Gr.6 $I_C = -150\text{ mA}$ $V_{CE} = -10\text{ V}$ $I_C = -0.1\text{ mA}$ $V_{CE} = -10\text{ V}$ $I_C = -500\text{ mA}$ $V_{CE} = -10\text{ V}$	40 70 120 20 20		80 140 240	
$f_T$	Transition frequency	$I_C = -50\text{ mA}$ $V_{CE} = -10\text{ V}$ $f = 100\text{ MHz}$		100		MHz
$C_{CBO}$	Collector-base Capacitance	$I_E = 0$ $V_{CB} = -10\text{ V}$		15		pF
$h_{ie}$	Input Impedance	$I_C = -5\text{ mA}$ $V_{CE} = -10\text{ V}$ $f = 1\text{ kHz}$		0.9		k $\Omega$
$h_{re}$	Reverse Voltage Ratio	$I_C = -5\text{ mA}$ $V_{CE} = -10\text{ V}$ $f = 1\text{ kHz}$		$1.7 \times 10^{-4}$		
$h_{fe}$	Small Signal Current Gain	$I_C = -5\text{ mA}$ $V_{CE} = -10\text{ V}$ $f = 1\text{ kHz}$		140		
$h_{oe}$	Output Admittance	$I_C = -5\text{ mA}$ $V_{CE} = -10\text{ V}$ $f = 1\text{ kHz}$		45		$\mu\text{s}$

\* Pulsed : pulse duration = 300 $\mu\text{s}$ , duty cycle = 1%.

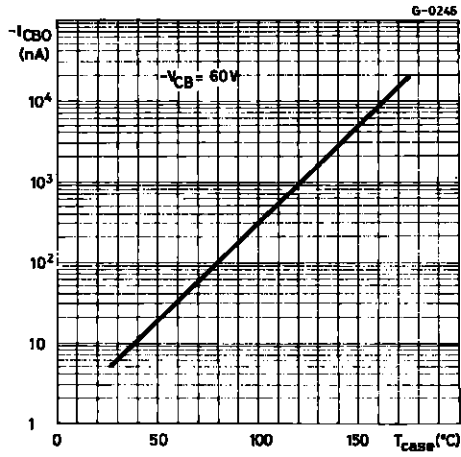
DC Normalized Current Gain.



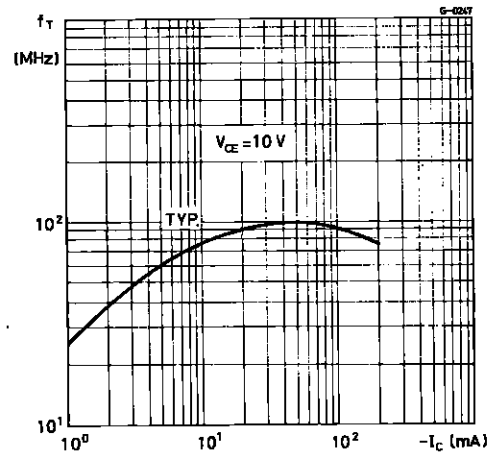
Collector-emitter saturation voltage.



Collector Cutoff Current.

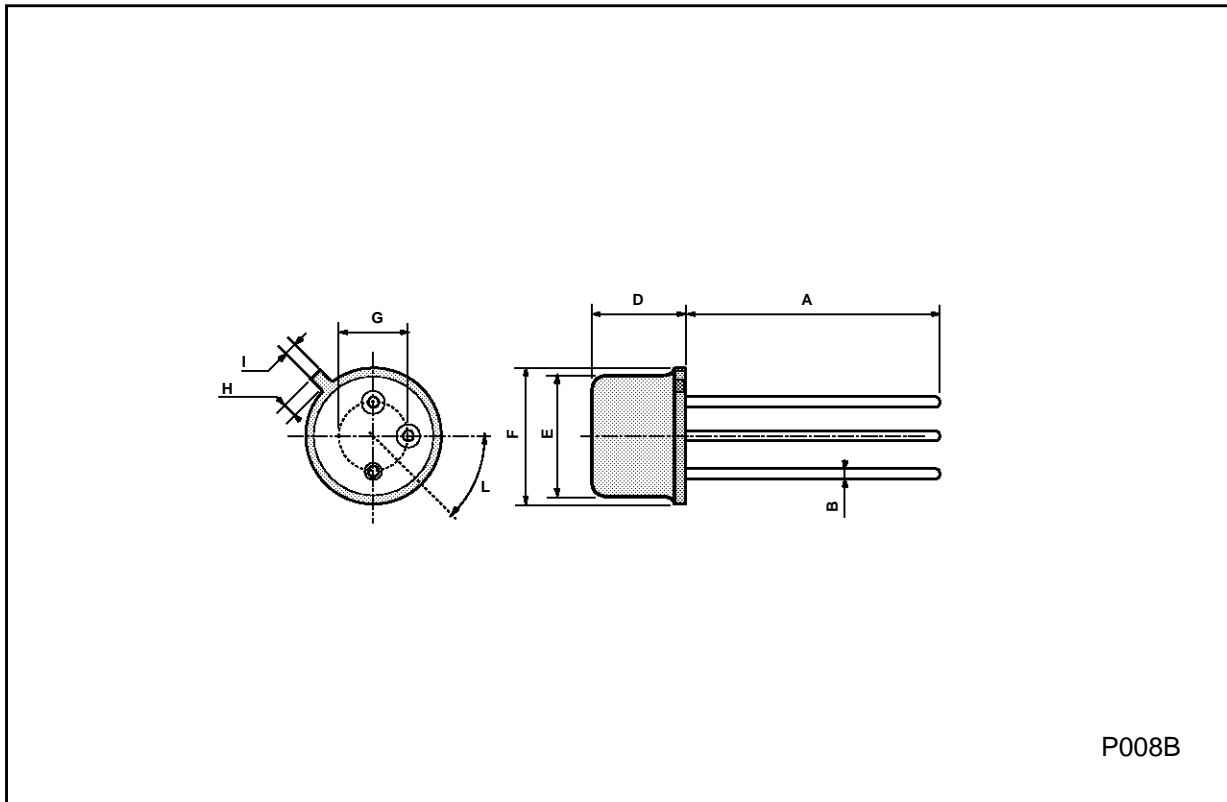


Transition Frequency.



**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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