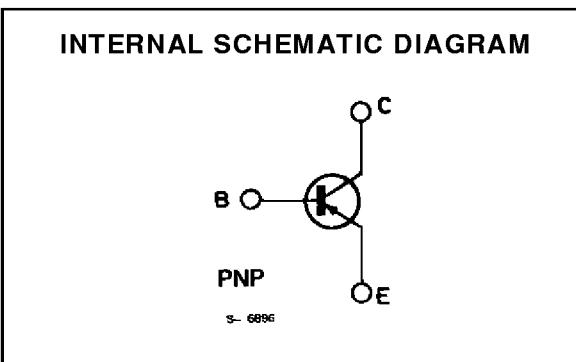
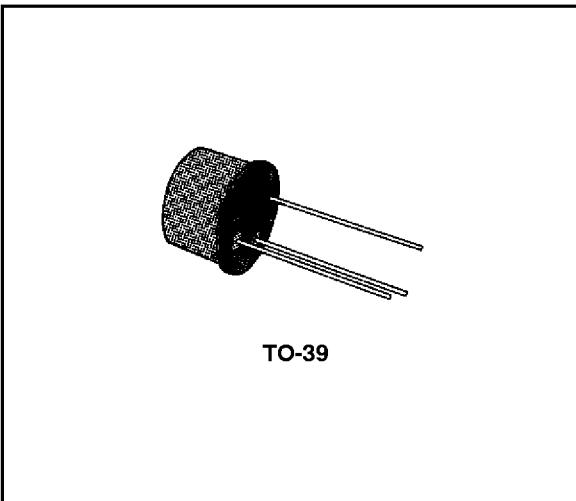


MEDIUM POWER AUDIO DRIVERS

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 $T_{amb} \leq 25^\circ C$ at $T_{case} \leq 25^\circ C$	0.85 6		W W
T_{stg}	Storage Temperature	- 65 to 175		$^\circ C$
T_j	Junction Temperature	175		$^\circ C$

BC303-BC304

THERMAL DATA

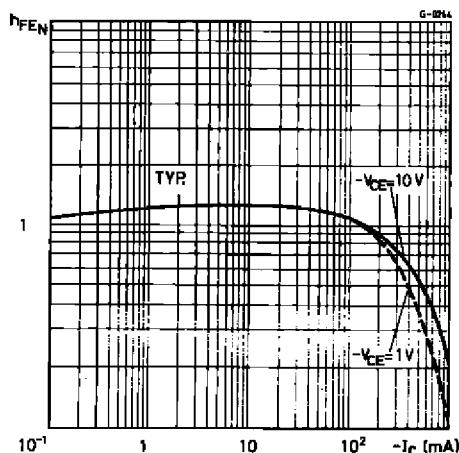
$R_{th\ j\text{-case}}$	Thermal Resistance Junction-case	Max	25	$^{\circ}\text{C/W}$
$R_{th\ j\text{-amb}}$	Thermal Resistance Junction-ambient	Max	175	$^{\circ}\text{C/W}$

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

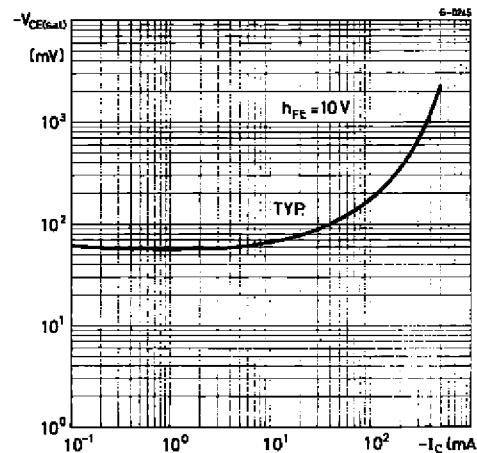
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CBO}	Collector Cutoff Current ($I_E = 0$)	$V_{CB} = -60\text{ V}$		-5	-20	nA
I_{EBO}	Emitter Cutoff Current ($I_C = 0$)	$V_{EB} = -5\text{ V}$			-20	nA
$V_{(BR)\ CEO}^*$	Collector-emitter Breakdown Voltage ($I_B = 0$)	$I_C = -10\text{ mA}$ For BC303 For BC304	-60 -45			V
$V_{CE(\text{sat})}^*$	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 Gr.5 Gr.6	$I_C = -150\text{ mA}$ $V_{CE} = -10\text{ V}$ $I_C = -150\text{ mA}$ $V_{CE} = -10\text{ V}$ $I_C = -150\text{ mA}$ $V_{CE} = -10\text{ V}$ $I_C = -0.1\text{ mA}$ $V_{CE} = -10\text{ V}$ $I_C = -500\text{ mA}$ $V_{CE} = -10\text{ V}$	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		kΩ
h_{re}	Reverse Voltage Ratio	$I_C = -5\text{ mA}$	$V_{CE} = -10\text{ V}$ $f = 1\text{ kHz}$		1.7×10^{-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	μs

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

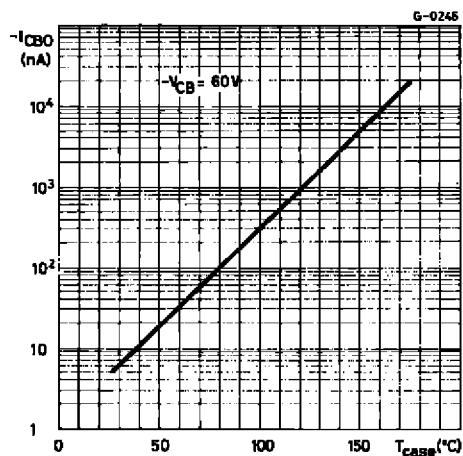
DC Normalized Current Gain.



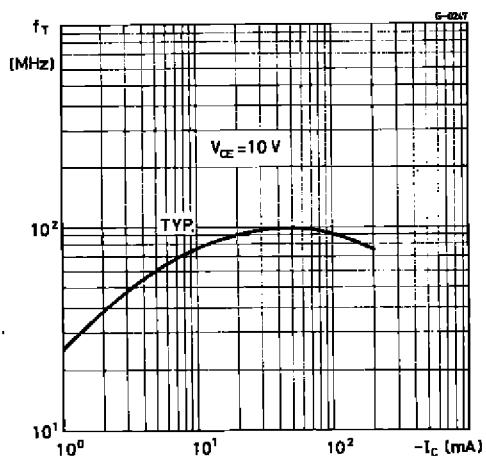
Collector-emitter saturation voltage.



Collector Cutoff Current.

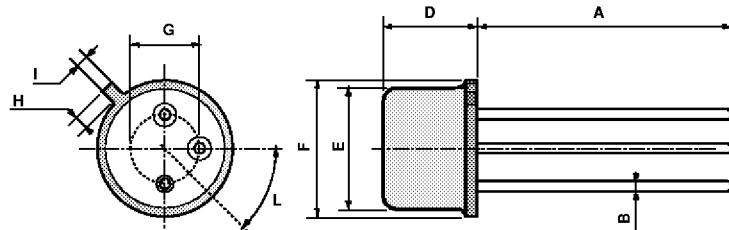


Transition Frequency.



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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