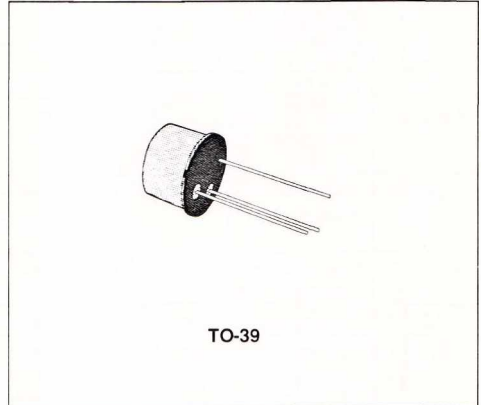


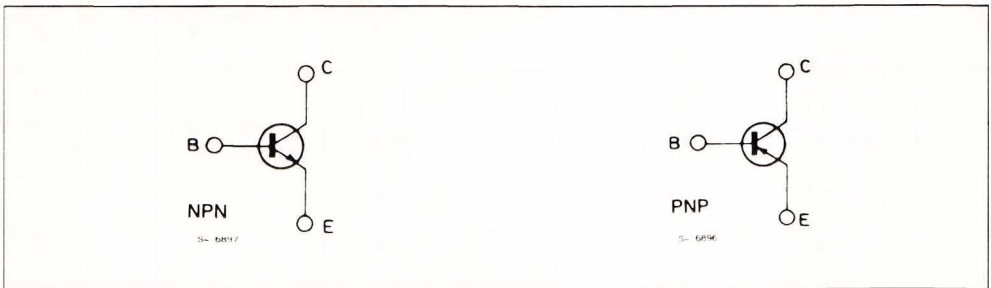
MEDIUM POWER AUDIO DRIVERS

DESCRIPTION

The BC300, BC301 and BC302 are silicon planar epitaxial NPN transistors in TO-39 metal case. They are intended for audio driver stages in commercial and industrial equipments. In addition they are useful as high speed saturated switches and general purpose amplifiers. The PNP types complementary to BC301 and BC302 are respectively the BC303 and BC304.



INTERNAL SCHEMATIC DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value			Unit
		BC300	BC301	BC302	
V_{CB0}	Collector-base Voltage ($I_E = 0$)	120	90	60	V
V_{CE0}	Collector-emitter Voltage ($I_B = 0$)	80	60	45	V
V_{EB0}	Emitter-base Voltage ($I_C = 0$)	7			V
I_C	Collector Current	0.5			A
I_{CM}	Collector Peak Current	1			A
P_{tot}	Total Power Dissipation at $T_{amb} \leq 25^\circ\text{C}$ at $T_{case} \leq 25^\circ\text{C}$	0.85			W
		6			W
T_{stg}	Storage Temperature	- 65 to 175			$^\circ\text{C}$
T_j	Junction Temperature	175			$^\circ\text{C}$

THERMAL DATA

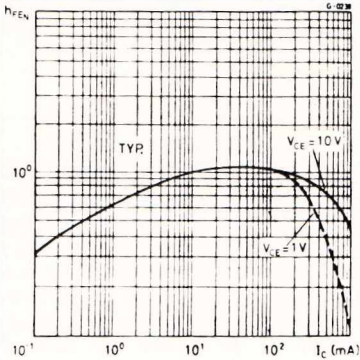
$R_{th\ j-case}$	Thermal Resistance Junction-case	Max	25	°C/W
$R_{th\ j-amb}$	Thermal Resistance Junction-ambient	Max	175	°C/W

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

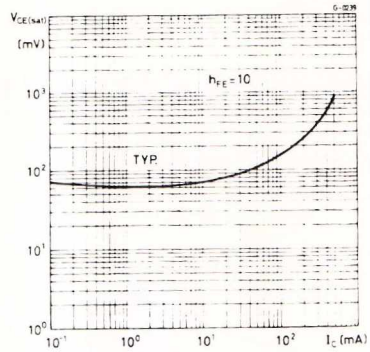
Symbol	Parameter	Test Conditions		Min.	Typ.	Max.	Unit
I_{CBO}	Collector Cutoff Current ($I_E = 0$)	$V_{CB} = 60\ V$			5	20	nA
I_{EBO}	Emitter Cutoff Current ($I_C = 0$)	$V_{EB} = 5\ V$				10	nA
$V_{(BR)CEO}^*$	Collector-emitter Breakdown Voltage ($I_B = 0$)	$I_C = 30\ mA$	for BC300 for BC301 for BC302	80 60 45			V V V
$V_{(BR)CBO}$	Collector-base Breakdown Voltage ($I_E = 0$)	$I_C = 100\ \mu A$	for BC300 for BC301 for BC302	120 90 60			V V V
$V_{CE(sat)}^*$	Collector-emitter Saturation Voltage	$I_C = 150\ mA$	$I_B = 15\ mA$		0.2	0.5	V
V_{BE}^*	Base-emitter Voltage	$I_C = 150\ mA$	$V_{CE} = 10\ V$		0.78		V
h_{FE}^*	DC Current Gain Gr. 4 Gr. 5 Gr. 6	$I_C = 150\ mA$ $I_C = 150\ mA$ $I_C = 150\ mA$ $I_C = 0.1\ mA$ $I_C = 500\ mA$	$V_{CE} = 10\ V$ $V_{CE} = 10\ V$ $V_{CE} = 10\ V$ $V_{CE} = 10\ V$ $V_{CE} = 10\ V$	40 70 120 20 20		80 140 240	
f_T	Transition Frequency	$I_C = 10\ mA$	$V_{CE} = 10\ V$		100		MHz
C_{CBO}	Collector-base Capacitance	$I_E = 0$	$V_{CB} = 10\ V$		12		pF
h_{ie}	Input Impedance	$I_C = 5\ mA$ $f = 1\ kHz$	$V_{CE} = 10\ V$		1.1		k Ω
h_{re}	Reverse Voltage Ratio	$I_C = 5\ mA$ $f = 1\ kHz$	$V_{CE} = 10\ V$		1.7×10^{-4}		
h_{fe}	Small Signal Current Gain	$I_C = 5\ mA$ $f = 1\ kHz$	$V_{CE} = 10\ V$		140		
h_{oe}	Output Admittance	$I_C = 5\ mA$ $f = 1\ kHz$	$V_{CE} = 10\ V$		14		μS

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

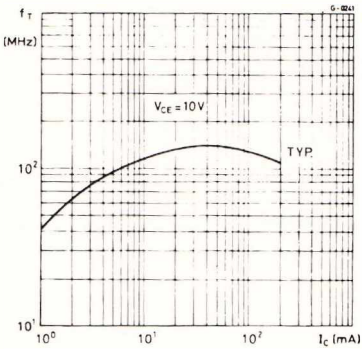
DC Normalized Current Gain.



Collector-emitter Saturation Voltage.



Transition Frequency.



Power Rating Chart.

