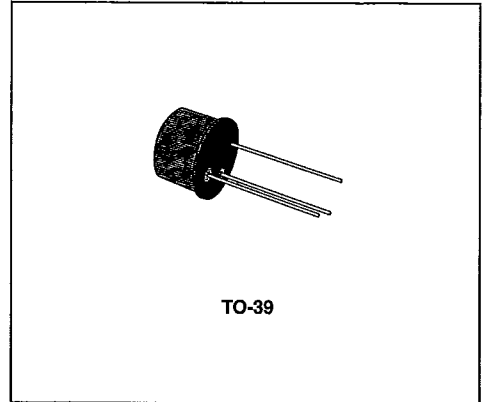
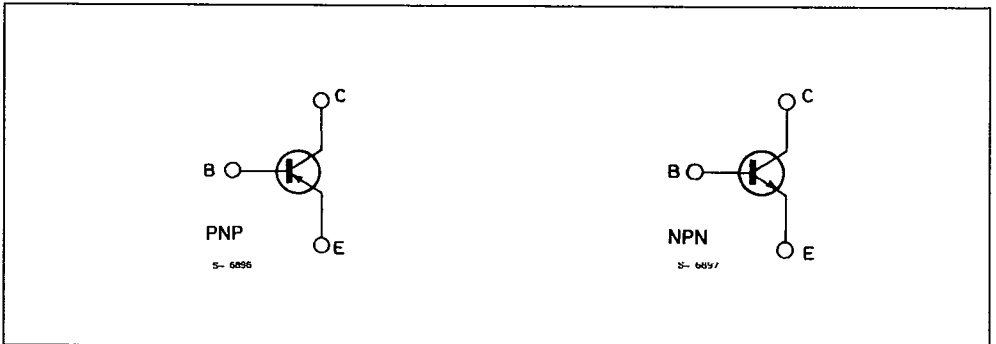


AUDIO OUTPUT AMPLIFIER**DESCRIPTION**

The BC139 is a silicon planar epitaxial PNP transistor in a TO-39 metal case. It is particularly designed for use in audio output and driver stages. The complementary NPN type is the BC119.

**INTERNAL SCHEMATIC DIAGRAM****ABSOLUTE MAXIMUM RATINGS**

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-base Voltage ($I_E = 0$)	- 40	V
V_{CEO}	Collector-emitter Voltage ($I_B = 0$)	- 40	V
V_{EBO}	Emitter-base Voltage ($I_C = 0$)	- 5	V
I_C	Collector Current	- 0.5	A
P_{tot}	Total Power Dissipation at $T_{amb} \leq 25^\circ\text{C}$ at $T_{case} \leq 25^\circ\text{C}$	0.7	W
		3	W
T_{stg}	Storage Temperature	- 55 to 200	$^\circ\text{C}$
T_J	Junction Temperature	200	$^\circ\text{C}$

THERMAL DATA

$R_{th\ j-case}$	Thermal Resistance Junction-case	Max	58	$^{\circ}C/W$
$R_{th\ j-amb}$	Thermal Resistance Junction-ambient	Max	250	$^{\circ}C/W$

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

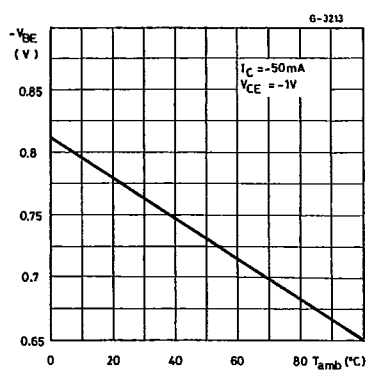
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CBO}	Collector Cutoff Current ($I_E = 0$)	$V_{CB} = -30\ V$ $V_{CB} = -30\ V$ $T_{amb} = 75\ ^{\circ}C$			-100 -50	nA μA
$V_{(BR)CBO}$	Collector-base Breakdown Voltage ($I_E = 0$)	$I_C = -10\ \mu A$	-40			V
$V_{(BR)CEO}^*$	Collector-emitter Breakdown Voltage ($I_B = 0$)	$I_C = -10\ mA$	-40			V
$V_{(BR)EBO}$	Emitter-base Breakdown Voltage ($I_C = 0$)	$I_E = -10\ \mu A$	-5			V
$V_{CE(sat)}^*$	Collector-emitter Saturation Voltage	$I_C = -300\ mA$ $I_B = -30\ mA$ $I_C = -500\ mA$ $I_B = -50\ mA$		-0.45 -1	-0.8	V V
V_{BE}^*	Base-emitter Voltage	$I_C = -10\ mA$ $V_{CE} = -10\ V$ $I_C = -100\ mA$ $V_{CE} = -10\ V$ $I_C = -300\ mA$ $V_{CE} = -1\ V$		-0.7 -0.77 -0.97		V V V
h_{FE}^*	DC Current Gain	$I_C = -10\ mA$ $V_{CE} = -10\ V$ $I_C = -100\ mA$ $V_{CE} = -10\ V$ $I_C = -150\ mA$ $V_{CE} = -1\ V$ $I_C = -300\ mA$ $V_{CE} = -1\ V$	40 20	90 90 45 35		
f_T	Transition Frequency	$I_C = -50\ mA$ $V_{CE} = -10\ V$		200		MHz
C_{CBO}	Collector-base Capacitance	$I_E = 0$ $V_{CB} = -10\ V$ $f = 1\ MHz$		6		pF

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

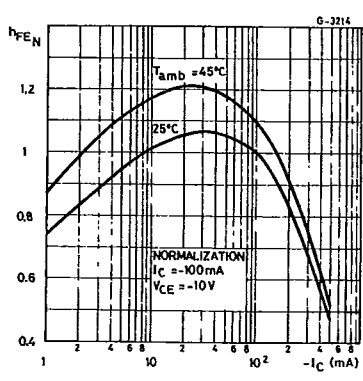
SGS-THOMSON

T-29-23

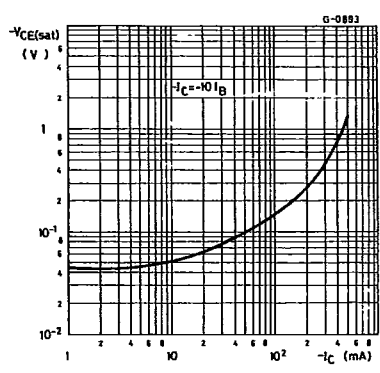
base-emitter Voltage.



DC Normalized Current Gain.



Collector-emitter Saturation Voltage.



Power Rating Chart.

