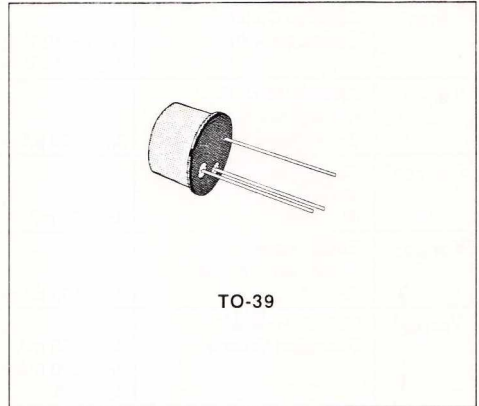
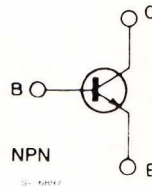


AUDIO OUTPUT AMPLIFIER
DESCRIPTION

The BC119 is a silicon planar epitaxial NPN transistor in a TO-39 metal case. It is suitable for 1 W class "A" and up to 6 W class "B" audio output stages.


INTERNAL SCHEMATIC DIAGRAM

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CB0}	Collector-base Voltage ($I_E = 0$)	60	V
V_{CE0}	Collector-emitter Voltage ($I_B = 0$)	30	V
V_{EB0}	Emitter-base Voltage ($I_C = 0$)	5	V
P_{tot}	Total Power Dissipation at $T_{amb} \leq 25^\circ\text{C}$	0.8	W
	at $T_{case} \leq 25^\circ\text{C}$	5	W
	at $T_{case} \leq 100^\circ\text{C}$	2.8	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	35	$^{\circ}C/W$
$R_{th\ j-amb}$	Thermal Resistance Junction-ambient	Max	220	$^{\circ}C/W$

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

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CBO}	Collector Cutoff Current ($I_E = 0$)	$V_{CB} = 40\ V$ $V_{CB} = 40\ V$ $T_{amb} = 150\ ^{\circ}C$			100 20	nA μA
$V_{(BR)CBO}$	Collector-base Breakdown Voltage ($I_E = 0$)	$I_C = 100\ \mu A$	60			V
$V_{(BR)CEO}^*$	Collector-emitter Breakdown Voltage ($I_B = 0$)	$I_C = 30\ mA$	30			V
$V_{(BR)EBO}$	Emitter-base Breakdown Voltage ($I_C = 0$)	$I_E = 100\ \mu A$	5			V
$V_{CE(sat)}^*$	Collector-emitter Saturation Voltage	$I_C = 150\ mA$ $I_B = 15\ mA$ $I_C = 500\ mA$ $I_B = 50\ mA$ $I_C = 1\ A$ $I_B = 100\ mA$		0.15 0.4 0.8	0.35 1.1 1.5	V V V
V_{BE}^*	Base-emitter Voltage	$I_C = 500\ mA$ $V_{CE} = 10\ V$ $I_C = 150\ mA$ $V_{CE} = 1\ V$		1 0.85	1.8 1	V V
$V_{BE(sat)}^*$	Base-emitter Saturation Voltage	$I_C = 150\ mA$ $I_B = 15\ mA$ $I_C = 1\ A$ $I_B = 0.1\ A$		0.9 1.4	1.2 2	V V
h_{FE}^*	DC Current Gain	$I_C = 50\ mA$ $V_{CE} = 1\ V$ $I_C = 150\ mA$ $V_{CE} = 1\ V$ $I_C = 500\ mA$ $V_{CE} = 10\ V$	40 40 25	100 90 60	120	
f_T	Transition Frequency	$I_C = 50\ mA$ $V_{CE} = 10\ V$	40			MHz
C_{CBO}	Collector-base Capacitance	$I_E = 0$ $V_{CB} = 10\ V$		12	25	pF

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