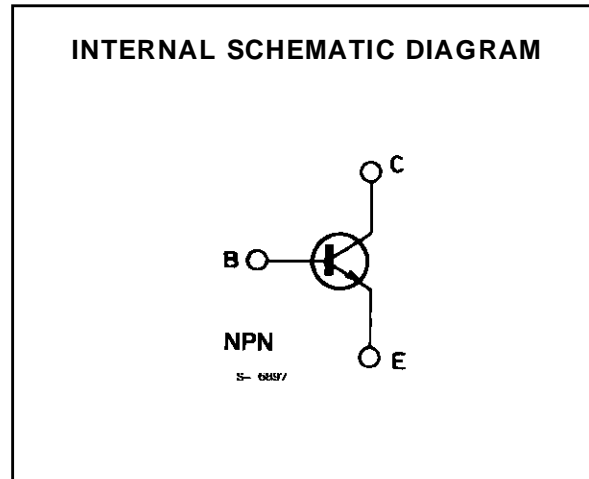
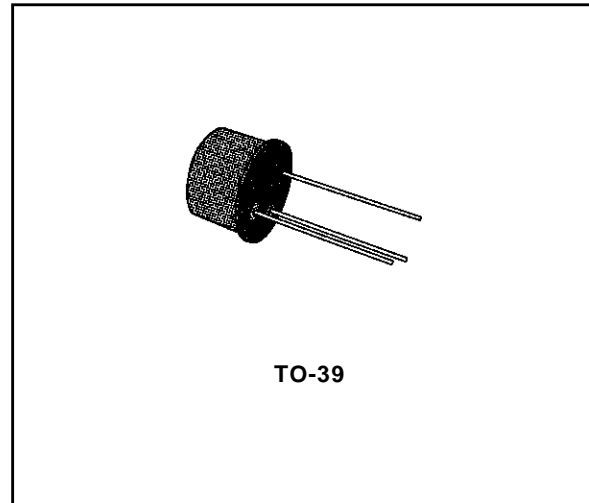


**AUDIO OUTPUT AMPLIFIER**
**DESCRIPTION**

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.


**ABSOLUTE MAXIMUM RATINGS**

Symbol	Parameter	Value	Unit
$V_{CBO}$	Collector-base Voltage ( $I_E = 0$ )	60	V
$V_{CEO}$	Collector-emitter Voltage ( $I_B = 0$ )	30	V
$V_{EBO}$	Emitter-base Voltage ( $I_C = 0$ )	5	V
$P_{tot}$	Total Power Dissipation at $T_{amb} \leq 25\text{ }^\circ\text{C}$	0.8	W
	at $T_{case} \leq 25\text{ }^\circ\text{C}$	5	W
	at $T_{case} \leq 100\text{ }^\circ\text{C}$	2.8	W
$T_{stg}$	Storage Temperature	- 55 to 200	$^\circ\text{C}$
$T_j$	Junction Temperature	200	$^\circ\text{C}$

## BC119

### THERMAL DATA

$R_{th\ j-case}$	Thermal Resistance Junction-case	Max	35	°C/W
$R_{th\ j-amb}$	Thermal Resistance Junction-ambient	Max	220	°C/W

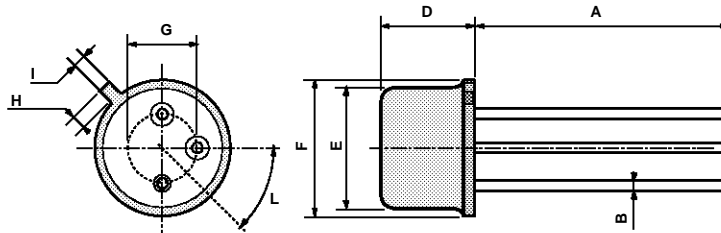
### ELECTRICAL CHARACTERISTICS ( $T_{amb} = 25\ ^\circ\text{C}$ unless otherwise specified)

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

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

## 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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