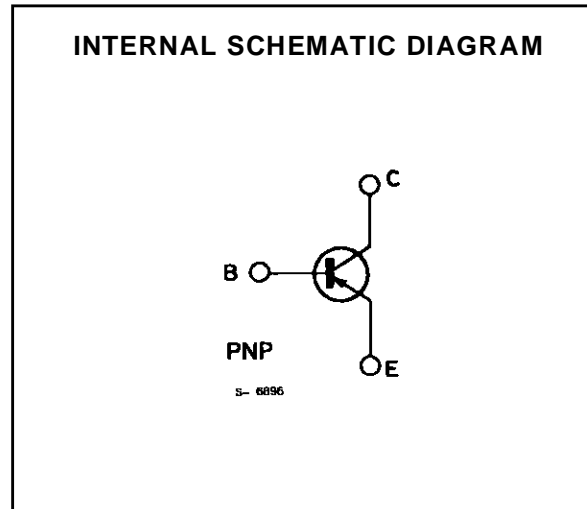
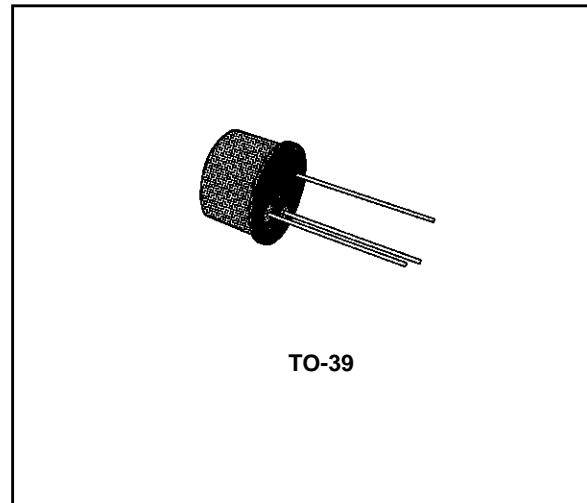


**AUDIO AMPLIFIER**

**DESCRIPTION**

The BC143 is a silicon planar epitaxial PNP transistor specially designed for use in the driver of high power audio amplifiers.



**ABSOLUTE MAXIMUM RATINGS**

| Symbol         | Parameter   | Value       | Unit             |
|----------------|---|-------------|------------------|
| $V_{CBO}$      | Collector-base Voltage ( $I_E = 0$ )  | - 60        | V                |
| $V_{CEO}$      | Collector-emitter Voltage ( $I_B = 0$ )   | - 60        | V                |
| $V_{EBO}$      | Emitter-base Voltage ( $I_C = 0$ )  | - 5         | V                |
| $I_C$          | Collector Current   | - 1         | A                |
| $P_{tot}$      | Total Power Dissipation at $T_{amb} \leq 25\text{ }^\circ\text{C}$<br>at $T_{case} \leq 25\text{ }^\circ\text{C}$ | 0.75        | W                |
|                |   | 4           | W                |
| $T_{stg}, T_j$ | Storage and Junction Temperature  | - 55 to 175 | $^\circ\text{C}$ |

**THERMAL DATA**

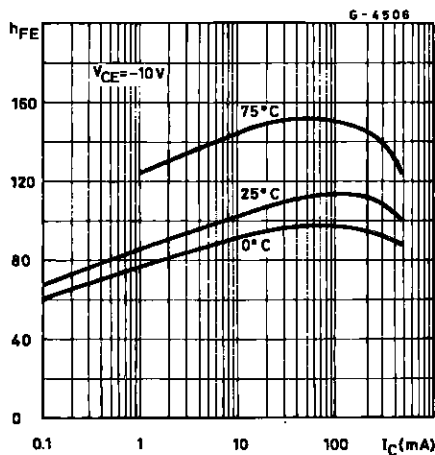
|                  |                                     |     |     |      |
|------------------|-------------------------------------|-----|-----|------|
| $R_{th\ j-case}$ | Thermal Resistance Junction-case    | Max | 37  | °C/W |
| $R_{th\ j-amb}$  | Thermal Resistance Junction-ambient | Max | 200 | °C/W |

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

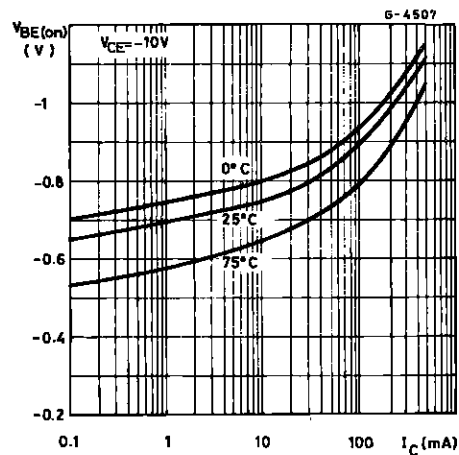
| Symbol          | Parameter   | Test Conditions  | Min. | Typ.                   | Max.       | Unit          |
|-----------------|---|--|------|------------------------|------------|---------------|
| $I_{CBO}$       | Collector Cutoff Current ( $I_E = 0$ )            | $V_{CB} = -30\ V$<br>$V_{CB} = -30\ V$ ( $T_{amb} = 150\ ^\circ C$ )   |      |                        | -50<br>-50 | nA<br>$\mu A$ |
| $V_{(BR)CBO}$   | Collector-base Breakdown Voltage ( $I_E = 0$ )    | $I_C = 100\ \mu A$   | -60  |                        |            | V             |
| $V_{(BR)CEO}^*$ | Collector-emitter Breakdown Voltage ( $I_B = 0$ ) | $I_C = 10\ mA$   | -60  |                        |            | 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              | $I_C = 500\ mA$ $I_B = 50\ mA$<br>$I_C = 1A$ $I_B = 100\ mA$   |      | -0.25<br>-0.7          | -0.5<br>-1 | V<br>V        |
| $V_{BE}^*$      | Base-emitter Voltage                              | $I_C = -500\ mA$ $V_{CE} = -10\ V$   |      | -1.1                   |            | V             |
| $h_{FE}^*$      | DC Current Gain                                   | $I_C = 10\ mA$ $V_{CE} = -10\ V$<br>$I_C = 100\ mA$ $V_{CE} = -10\ V$<br>$I_C = -300\ mA$ $V_{CE} = -1\ V$<br>$I_C = 500\ mA$ $V_{CE} = -1\ V$ |      | 110<br>110<br>40<br>25 |            |               |
| $h_{fe}$        | High Frequency Current Gain                       | $I_C = 50\ mA$ $V_{CE} = -10\ V$<br>$f = 100\ MHz$   |      | 1.5                    |            |               |
| $C_{CBO}$       | Collector-base Capacitance                        | $I_E = 0$ $V_{CB} = -10\ V$<br>$f = 1\ MHz$  |      | 13                     |            | pF            |

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

DC Current Gain vs. Collector Current.

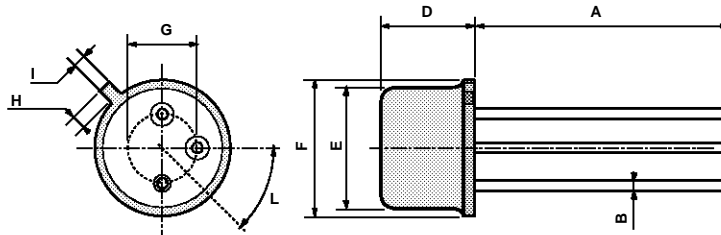


Base-emitter on Voltage vs. Collector Current.



## 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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