

SILICON PLANAR EPITAXIAL TRANSISTORS

P-N-P transistors, in a SOT-23 plastic package for use in driver and output stages of audio amplifiers in thick and thin-film hybrid circuits.

N-P-N complements are BC817; R and BC818; R respectively.

QUICK REFERENCE DATA

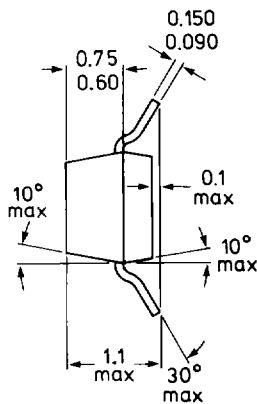
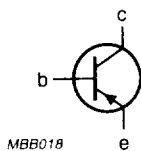
| | BC807 | | BC808 | |
|---------------------------------------------------------------------------------------------|--------------------------------------------|-----------------|-------|------------------|
| | Collector-emitter voltage ($V_{BE} = 0$) | $-V_{CES}$ max. | 50 | 30 |
| Collector-emitter voltage (open base) | $-V_{CEO}$ max. | 45 | 25 | V |
| Collector current (peak value) | $-I_{CM}$ max. | 1000 | | mA |
| Total power dissipation up to $T_{amb} = 25^\circ\text{C}$ | P_{tot} max. | 250 | | mW |
| Junction temperature | T_j max. | 150 | | $^\circ\text{C}$ |
| Transition frequency at $f = 100\text{ MHz}$ $-I_C = 10\text{ mA}; -V_{CE} = 5\text{ V}$ | f_T | > | 80 | MHz |

MECHANICAL DATA

Fig. 1 SOT-23.

Pinning:

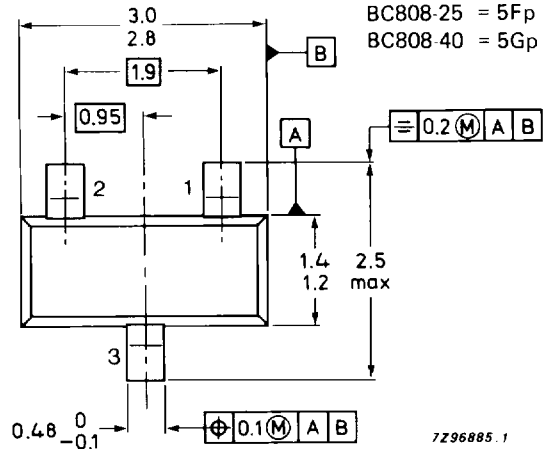
- 1 = base
- 2 = emitter
- 3 = collector



Dimensions in mm

Marking code:

- BC807 = 5Dp
- BC807-16 = 5Ap
- BC807-25 = 5Bp
- BC807-40 = 5Cp
- BC808 = 5Hp
- BC808-16 = 5Ep
- BC808-25 = 5Fp
- BC808-40 = 5Gp



TOP VIEW

Reverse pinning types are available on request.

RATINGS

Limiting values in accordance with the Absolute Maximum System (IEC 134)

| | | BC807 | BC808 |
|---------------------------------------------------------|-----------------|-------------|-------|
| Collector-emitter voltage ($V_{BE} = 0$) | $-V_{CES}$ max. | 50 | 30 V |
| Collector-emitter voltage (open base) $-I_C = 10$ mA | $-V_{CEO}$ max. | 45 | 25 V |
| Emitter-base voltage (open collector) | $-V_{EBO}$ max. | 5 | 5 V |
| Collector current (DC) | $-I_C$ max. | 500 | mA |
| Collector current (peak value) | $-I_{CM}$ max. | 1000 | mA |
| Emitter current (peak value) | I_{EM} max. | 1000 | mA |
| Base current (DC) | $-I_B$ max. | 100 | mA |
| Base current (peak value) | $-I_{BM}$ max. | 200 | mA |
| Total power dissipation at $T_{amb} = 25$ °C * | P_{tot} max. | 250 | mW |
| Storage temperature | T_{stg} | -65 to +150 | °C |
| Junction temperature | T_j max. | 150 | °C |

THERMAL RESISTANCE*

| | | | |
|--------------------------|-----------------|-----|-----|
| From junction to ambient | $R_{tj\ j-a}$ = | 500 | K/W |
|--------------------------|-----------------|-----|-----|

* Mounted on an FR4 printed-circuit board 8 mm x 10 mm x 0.7 mm.

CHARACTERISTICS

$T_j = 25\text{ }^\circ\text{C}$ unless otherwise specified

Collector cut-off current

$I_E = 0; -V_{CB} = 20\text{ V}; T_j = 25\text{ }^\circ\text{C}$

$-I_{CBO}$ max. 100 nA

$I_E = 0; -V_{CB} = 20\text{ V}; T_j = 150\text{ }^\circ\text{C}$

$-I_{CBO}$ max. 5 μA

Emitter cut-off current

$I_C = 0; V_{EB} = 5\text{ V}$

$-I_{EBO}$ max. 10 μA

Base emitter voltage *

$-I_C = 500\text{ mA}; -V_{CE} = 1\text{ V}$

$-V_{BE}$ max. 1,2 V

Saturation voltage

$-I_C = 500\text{ mA}; -I_B = 50\text{ mA}$

$-V_{CEsat}$ max. 700 mV

D.C. current gain

$-I_C = 500\text{ mA}; -V_{CE} = 1\text{ V}$

h_{FE} min. 40

$-I_C = 100\text{ mA}; -V_{CE} = 1\text{ V}; \text{BC807}; \text{BC808}$

h_{FE} 100 to 600

BC807-16 |

BC808-16 |

h_{FE} 100 to 250

BC807-25 |

BC808-25 |

h_{FE} 160 to 400

BC807-40 |

BC808-40 |

h_{FE} 250 to 600

Transition frequency at $f = 100\text{ MHz}$

$-I_C = 10\text{ mA}; -V_{CE} = 5\text{ V}$

$f_T > 80\text{ MHz}$

Collector capacitance at $f = 1\text{ MHz}$

$I_E = I_e = 0; -V_{CB} = 10\text{ V}$

C_c typ. 8 pF

* $-V_{BE}$ decreases by about 2 mV/K with increasing temperature.