

SILICON PLANAR EPITAXIAL TRANSISTORS

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

P-N-P complements are BC807; R and BC808; R respectively.

QUICK REFERENCE DATA

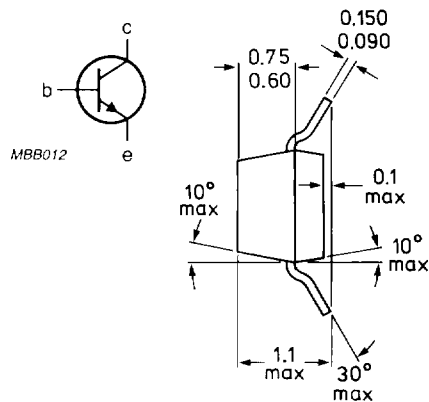
	BC817		BC818
	Collector-emitter voltage ($V_{BE} = 0$)	V_{CES}	max. 50
Collector-emitter voltage (open base)	V_{CEO}	max. 45	25 V
Collector current (peak value)	I_{CM}	max. 1000	mA
Total power dissipation up to $T_{amb} = 25\text{ }^{\circ}\text{C}$	P_{tot}	max. 250	mW
Junction temperature	T_j	max. 150	$^{\circ}\text{C}$
Transition frequency at $f = 100\text{ MHz}$ $I_C = 10\text{ mA}; V_{CE} = 5\text{ V}$	f_T	>	100 MHz

MECHANICAL DATA

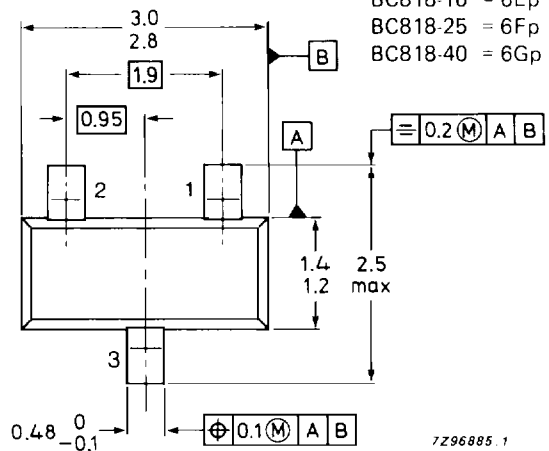
Fig. 1 SOT-23.

Pinning:

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



Dimensions in mm



Marking code:

- BC817 = 6Dp
- BC817-16 = 6Ap
- BC817-25 = 6Bp
- BC817-40 = 6Cp
- BC818 = 6Hp
- BC818-16 = 6Ep
- BC818-25 = 6Fp
- BC818-40 = 6Gp

Reverse pinning types are available on request.

TOP VIEW

RATINGS

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

		BC817	BC818
Collector-emitter voltage ($V_{BE} = 0$)	V_{CES}	max. 50	30 V
Collector-emitter voltage (open base) $I_C = 10 \text{ mA}$	V_{CEO}	max. 45	25 V
Emitter-base voltage (open collector)	V_{EBO}	max. 5	5 V
Collector current (d.c.)	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 (d.c.)	I_B	max. 100	mA
Base current (peak value)	I_{BM}	max. 200	mA
Total power dissipation up to $T_{amb} = 25 \text{ }^\circ\text{C}$	P_{tot}	max. 250	mW
Storage temperature	T_{stg}	-65 to +150	$^\circ\text{C}$
Junction temperature	T_j	max. 150	$^\circ\text{C}$

THERMAL RESISTANCE

From junction to ambient*

$$R_{th\ j-a} = 500 \text{ K/W}$$

* 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

 $I_E = 0; V_{CB} = 20\text{ V}; T_j = 25\text{ }^\circ\text{C}$ $I_{CBO} < 100\text{ nA}$ $I_E = 0; V_{CB} = 20\text{ V}; T_j = 150\text{ }^\circ\text{C}$ $I_{CBO} < 5\text{ }\mu\text{A}$

Emitter cut-off current

 $I_C = 0; V_{EB} = 5\text{ V}$ $I_{EBO} < 10\text{ }\mu\text{A}$

Base emitter voltage *

 $I_C = 500\text{ mA}; V_{CE} = 1\text{ V}$ $V_{BE} < 1,2\text{ V}$

Saturation voltage

 $I_C = 500\text{ mA}; I_B = 50\text{ mA}$ $V_{CEsat} < 700\text{ mV}$

D.C. current gain

 $I_C = 500\text{ mA}; V_{CE} = 1\text{ V}$ $h_{FE} > 40$ $I_C = 100\text{ mA}; V_{CE} = 1\text{ V}; \text{BC817}; \text{BC818}$ $h_{FE} 100\text{ to }600$

BC817-16 |

 $h_{FE} 100\text{ to }250$

BC818-16 |

BC817-25 |

 $h_{FE} 160\text{ to }400$

BC818-25 |

BC817-40 |

 $h_{FE} 250\text{ to }600$

BC818-40 |

Transition frequency at $f = 100\text{ MHz}$ $I_C = 10\text{ mA}; V_{CE} = 5\text{ V}$ $f_T > 100\text{ MHz}$ Collector capacitance at $f = 1\text{ MHz}$ $I_E = I_e = 0; V_{CB} = 10\text{ V}$ $C_c \text{ typ. } 5\text{ pF}$ * V_{BE} decreases by about 2 mV/K with increasing temperature.