

SILICON PLANAR EPITAXIAL TRANSISTORS

P-N-P transistors, in a microminiature plastic package, intended for low level, low noise general purpose applications in thick and thin-film circuits.

QUICK REFERENCE DATA

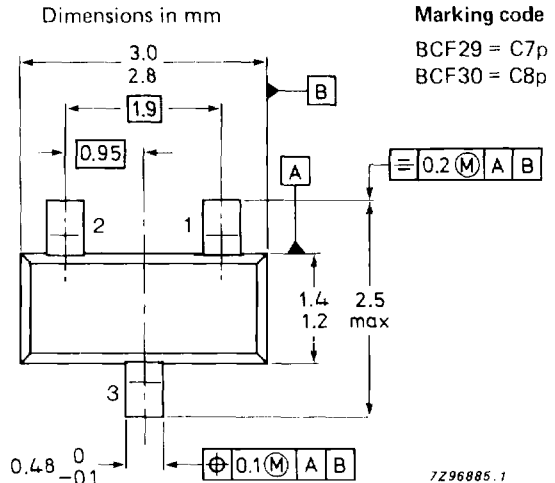
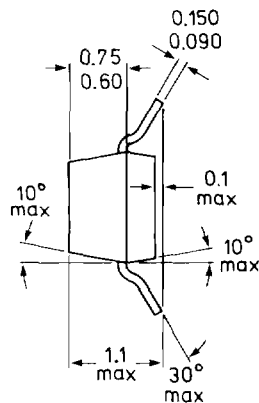
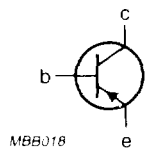
		BCF29	BCF30
D.C. current gain at $T_j = 25\text{ }^\circ\text{C}$ $-I_C = 2\text{ mA}; -V_{CE} = 5\text{ V}$	$h_{FE} >$	120	215
	$h_{FE} <$	260	500
Collector-base voltage (open emitter)	$-V_{CBO}$ max.	32	V
Collector-emitter voltage (open base)	$-V_{CEO}$ max.	32	V
Collector current (peak value)	$-I_{CM}$ max.	200	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
Noise figure at $R_S = 2\text{ k}\Omega$ $-I_C = 200\text{ }\mu\text{A}; -V_{CE} = 5\text{ V};$ $f = 1\text{ kHz}; B = 200\text{ Hz}$	$F <$	4	dB

MECHANICAL DATA

Fig. 1 SOT-23.

Pinning:

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



Reverse pinning types are available on request.

TOP VIEW

RATINGS

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

Collector-base voltage (open emitter)	$-V_{CBO}$	max.	32 V
Collector-emitter voltage ($V_{BE} = 0$)	$-V_{CES}$	max.	32 V
Collector-emitter voltage (open base) $-I_C = 2 \text{ mA}$	$-V_{CEO}$	max.	32 V
Emitter-base voltage (open collector)	$-V_{EBO}$	max.	5 V
Collector current (d.c.)	$-I_C$	max.	100 mA
Collector current (peak value)	$-I_{CM}$	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 K/W
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CHARACTERISTICS

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

Collector cut-off current $I_E = 0; -V_{CB} = 32 \text{ V}$	$-I_{CBO}$	<	100 nA
$I_E = 0; -V_{CB} = 32 \text{ V}; T_j = 100 \text{ }^\circ\text{C}$	$-I_{CBO}$	<	10 μA
Base-emitter voltage $-I_C = 2 \text{ mA}; -V_{CE} = 5 \text{ V}$	$-V_{BE}$		600 to 750 mV
Saturation voltages	$-V_{CEsat}$	typ.	80 mV
$-I_C = 10 \text{ mA}; -I_B = 0,5 \text{ mA}$	$-V_{CEsat}$	<	300 mV
	$-V_{BEsat}$	typ.	720 mV
$-I_C = 50 \text{ mV}; -I_B = 2,5 \text{ mA}$	$-V_{CEsat}$	typ.	150 mV
	$-V_{BEsat}$	typ.	810 mV

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

		BCF29	BCF30
D.C. current gain			
$-I_C = 10 \mu\text{A}; -V_{CE} = 5 \text{ V}$	h_{FE}	typ. 90	150
$-I_C = 2 \text{ mA}; -V_{CE} = 5 \text{ V}$	h_{FE}	> 120 < 260	215 500
Collector capacitance at $f = 1 \text{ MHz}$ $I_E = I_e = 0; -V_{CB} = 10 \text{ V}$	C_C	typ. 4,5	pF
Transition frequency at $f = 100 \text{ MHz}$ $-I_C = 10 \text{ mA}; -V_{CE} = 5 \text{ V}$	f_T	> 100	MHz
Noise figure at $R_S = 2 \text{ k}\Omega$ $-I_C = 200 \mu\text{A}; -V_{CE} = 5 \text{ V}$ $f = 1 \text{ kHz}; B = 200 \text{ Hz}$	F	< 4 typ. 1	dB dB