

SILICON PLANAR EPITAXIAL TRANSISTORS

NPN transistors in miniature plastic packages intended for use in amplifier and switching applications. Complementary pnp types are BSP15/16.

QUICK REFERENCE DATA

			BSP19	BSP20
Collector-base voltage (open emitter)	V_{CB0}	max.	400	300 V
Collector-emitter voltage (open base)	V_{CEO}	max.	350	250 V
Collector current (DC)	I_C	max.		1 A
Total power dissipation up to $T_{amb} = 25\text{ }^{\circ}\text{C}$	P_{tot}	max.	1,5	W
Junction temperature	T_j	max.	150	$^{\circ}\text{C}$
DC current gain $V_{CE} = 10\text{ V}; I_C = 20\text{ mA}$	h_{FE}	min.	40	
Transition frequency at $f = 100\text{ MHz}$ $V_{CE} = 10\text{ V}; I_C = 10\text{ mA}$	f_T	min.	70	MHz

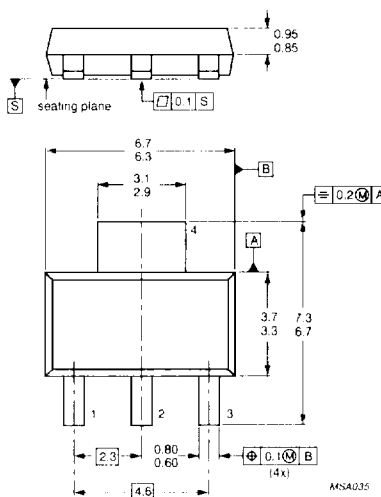
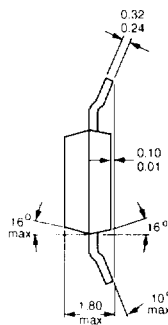
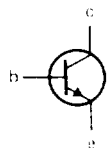
MECHANICAL DATA

Dimensions in mm

Fig. 1 SOT-223

Pinning

- 1 = Base
- 2 = Collector
- 3 = Emitter
- 4 = Collector



RATINGS

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

			BSP19	BSP20	
Collector-base voltage (open emitter)	V_{CBO}	max.	400	300	V
Collector-emitter voltage (open base)	V_{CEO}	max.	350	250	V
Emitter-base voltage (open collector)	V_{EBO}	max.	5		V
Collector current (DC)	I_C	max.	1		A
Base current	I_B	max.	0,5		A
Total power dissipation up to $T_{amb} = 25\text{ }^\circ\text{C}^*$	P_{tot}	max.	1,5		W
Junction temperature	T_j	max.	150		$^\circ\text{C}$
Storage temperature range	T_{stg}		-65 to 150		$^\circ\text{C}$

THERMAL RESISTANCE

from junction to ambient	R_{thj-a}	=	83,3		K/W
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CHARACTERISTICS

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

Collector cut-off current $I_B = 0; V_{CE} = 300\text{ V}$	I_{CBO}	\leq	20		nA
Emitter cut-off current $I_C = 0; V_{EB} = 5\text{ V}$	I_{EBO}	\leq	10		μA
Collector-emitter saturation voltage $I_C = 50\text{ mA}; I_B = 4\text{ mA}$	V_{CEsat}	\leq	0,5		V
Base-emitter saturation voltage $I_C = 50\text{ mA}; I_B = 4\text{ mA}$	V_{BEsat}	\leq	1,3		V
DC current gain $V_{CE} = 10\text{ V}; I_C = 20\text{ mA}$	h_{FE}	\leq	40		
Collector capacitance at $f = 1\text{ MHz}$ $I_E = I_B = 0; V_{CB} = 10\text{ V}$	C_c	\leq	2,5		pF
Emitter capacitance at $f = 1\text{ MHz}$ $I_C = I_E = 0; V_{EB} = 5\text{ V}$	C_e	\leq	20		pF
Transition frequency at $f = 100\text{ MHz}$ $V_{CE} = 10\text{ V}; I_C = 10\text{ mA}$	f_T	\geq	70		MHz

* Device mounted on an epoxy printed circuit board 40 mm x 40 mm x 1,5 mm; mounting pad for the collector lead min. 6 cm².