

SILICON PLANAR EPITAXIAL TRANSISTORS

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

QUICK REFERENCE DATA

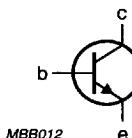
		BCV71	BCV72	
	h_{FE}	> <	110 220	200 450
D.C. current gain at $T_J = 25^\circ\text{C}$ $I_C = 2 \text{ mA}; V_{CE} = 5 \text{ V}$	V _{CEO}	max.	80	V
Collector-base voltage (open emitter)	V _{CBO}	max.	60	V
Collector-emitter voltage (open base)	V _{CEO}	max.	200	mA
Collector current (peak value)	I_{CM}	max.	250	mW
Total power dissipation up to $T_{amb} = 25^\circ\text{C}$	P _{tot}	max.	150	°C
Junction temperature	T_J	max.	300	MHz
Transition frequency at $f = 35 \text{ MHz}$ $I_C = 10 \text{ mA}; V_{CE} = 5 \text{ V}$	f _T	typ.	10	dB
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	<		

MECHANICAL DATA

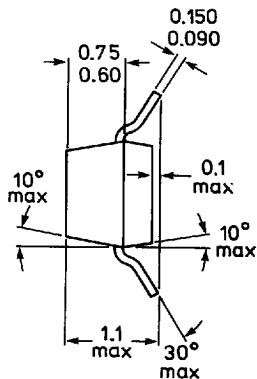
Fig. 1 SOT-23.

Pinning:

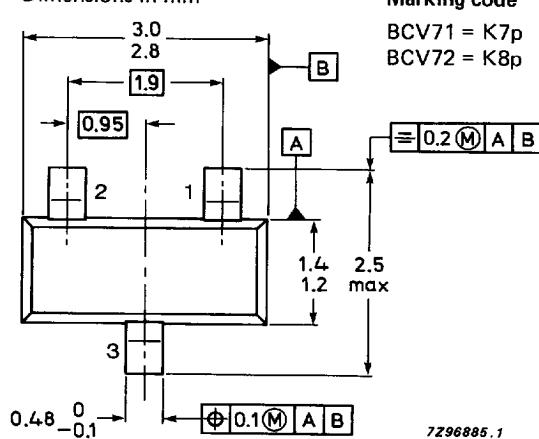
- 1 = base
- 2 = emitter
- 3 = collector



MBB012



Dimensions in mm



TOP VIEW

Reverse pinning types are available on request.

See also *Soldering recommendations*.

BCV71
BCV72

N AMER PHILIPS/DISCRETE

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RATINGS

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

Collector-base voltage (open emitter)	V_{CBO}	max.	80 V
Collector-emitter voltage (open base) $I_C = 2 \text{ mA}$	V_{CEO}	max.	60 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 $T_{amb} = 25^\circ\text{C}$	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*	$R_{th j-a}$	=	500 K/W
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CHARACTERISTICS $T_j = 25^\circ\text{C}$ unless otherwise specified

Collector cut-off current $I_E = 0; V_{CB} = 20 \text{ V}$	I_{CBO}	<	100 nA
$I_E = 0; V_{CB} = 20 \text{ V}; T_j = 100^\circ\text{C}$	I_{CBO}	<	10 μA
Base emitter voltage $I_C = 2 \text{ mA}; V_{CE} = 5 \text{ V}$	V_{BE}	550 to 700 mV	
Saturation voltages $I_C = 10 \text{ mA}; I_B = 0,5 \text{ mA}$	V_{CEsat}	typ. <	120 mV 250 mV
$I_C = 50 \text{ mA}; I_B = 2,5 \text{ mA}$	V_{BEsat} V_{CEsat} V_{BEsat}	typ. typ. typ.	750 mV 210 mV 850 mV

		$BCV71$	$BCV72$	
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}	> <	110 220	200 450
Collector capacitance at $f = 1 \text{ MHz}$ $I_E = I_e = 0; V_{CB} = 10 \text{ V}$	C_c	typ.	2,5	pF
Transition frequency at $f = 35 \text{ MHz}$ $I_C = 10 \text{ mA}; V_{CE} = 5 \text{ V}$	f_T	typ.	300	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	<	10	dB

* Mounted on a ceramic substrate of 8 mm x 10 mm x 0,7 mm.