

SILICON PLANAR EPITAXIAL TRANSISTORS

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

QUICK REFERENCE DATA

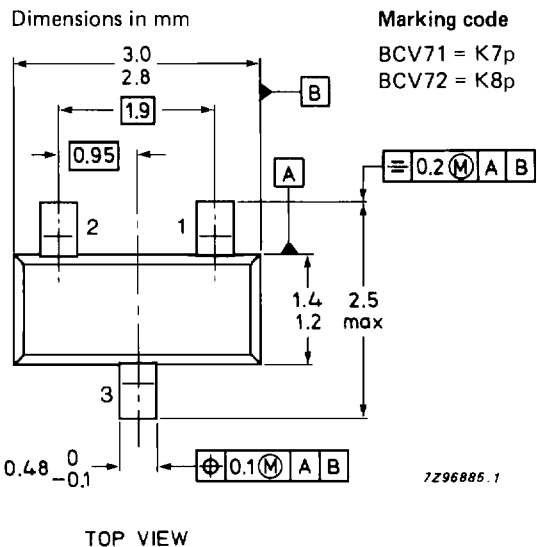
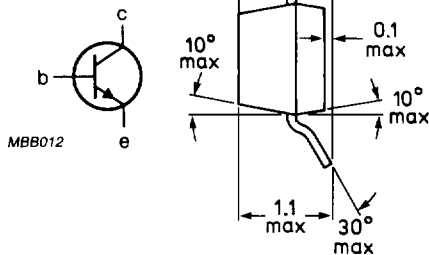
		BCV71	BCV72
D.C. current gain at $T_j = 25\text{ }^\circ\text{C}$ $I_C = 2\text{ mA}; V_{CE} = 5\text{ V}$	$h_{FE} >$	110	200
	$h_{FE} <$	220	450
Collector-base voltage (open emitter)	V_{CBO} max.	80	V
Collector-emitter voltage (open base)	V_{CEO} max.	60	V
Collector current (peak value)	I_{CM} max.	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 $R_S = 2\text{ k}\Omega$ $I_C = 200\text{ }\mu\text{A}; V_{CE} = 5\text{ V};$ $f = 1\text{ kHz}; B = 200\text{ Hz}$	$F <$	10	dB

MECHANICAL DATA

Fig. 1 SOT-23.

Pinning:

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



Reverse pinning types are available on request.

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 $T_{amb} = 25 \text{ }^\circ\text{C}$	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*	$R_{th \text{ j-a}}$	=	500 K/W
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CHARACTERISTICS

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

Collector cut-off current

$I_E = 0; V_{CB} = 20 \text{ V}$

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

I_{CBO}	<	10 μA
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Base emitter voltage

$I_C = 2 \text{ mA}; V_{CE} = 5 \text{ V}$

V_{BE}		550 to 700 mV
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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}	typ.	750 mV
V_{CEsat}	typ.	210 mV
V_{BEsat}	typ.	850 mV

D.C. current gain

$I_C = 10 \text{ } \mu\text{A}; V_{CE} = 5 \text{ V}$

		BCV71	BCV72
h_{FE}	typ.	90	150
	>	110	200
	<	220	450

$I_C = 2 \text{ mA}; V_{CE} = 5 \text{ V}$

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

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

C_c	typ.	2,5	pF
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Transition frequency at $f = 100 \text{ MHz}$

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

f_T	>	100	MHz
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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	<	10	dB
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* Mounted on an FR4 printed-circuit board 8 mm x 10 mm x 0.7 mm.