

SILICON PLANAR DARLINGTON TRANSISTOR

N-P-N silicon planar darlington transistor in a plastic SOT23 envelope.
P-N-P complement is BCV26/46.

QUICK REFERENCE DATA

		BCV27	BCV47
Collector-emitter voltage (open base)	V _{CEO}	max. 30	60 V
Collector-base voltage (open emitter)	V _{CBO}	max. 40	80 V
Collector current	I _C	max. 300	500 mA
DC current gain	h _{FE}	> 4 000	2 000
I _C = 1 mA; V _{CE} = 5 V	h _{FE}	> 10 000	4 000
I _C = 10 mA; V _{CE} = 5 V	h _{FE}	> 20 000	10 000
I _C = 100 mA; V _{CE} = 5 V			
Junction temperature	T _j	max. 150	°C
Total power dissipation up to T _{amb} = 25 °C	P _{tot}	max. 250	mW
Collector-emitter saturation voltage	V _{CEsat}	max. 1.0	V
I _C = 100 mA; I _B = 0.1 mA			
Transition frequency at f = 100 MHz	f _T	typ. 220	MHz
I _C = 30 mA; V _{CE} = 5 V			

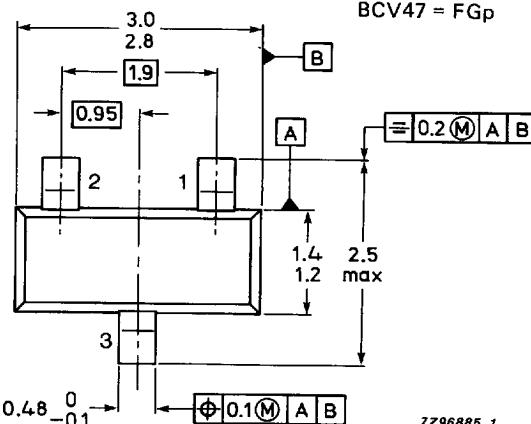
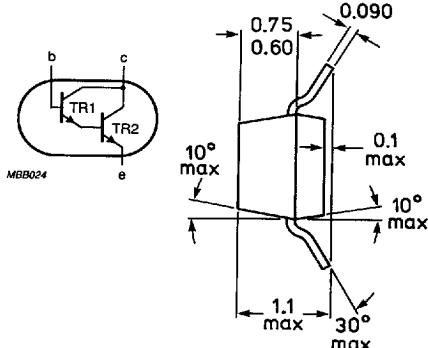
MECHANICAL DATA

Fig. 1 SOT23

Dimensions in mm

Pinning:

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



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TOP VIEW

April 1991

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BCV27
BCV47

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RATINGS

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

			BCV27	BCV47
Collector-emitter voltage (open base)	V_{CEO}	max.	30	60 V
Collector-base voltage (open emitter)	V_{CBO}	max.	40	80 V
Emitter-base voltage (open collector)	V_{EBO}	max.	10	10 V
Collector current	I_C	max.	300	500 mA
Collector current (peak value)	I_{CM}	max.	800	mA
Base current	I_B	max.	100	mA
Total power dissipation up to $T_{amb} = 25^\circ\text{C}$ *	P_{tot}	max.	250	mW
Storage temperature	T_s		-65 to +150	$^\circ\text{C}$
Junction temperature	T_j	max.	150	$^\circ\text{C}$

THERMAL RESISTANCE

From junction to ambient*	$R_{th\ j-a}$	max.	500	K/W
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CHARACTERISTICS

			BCV27	BCV47
$T_{amb} = 25^\circ\text{C}$ unless otherwise stated				
Collector-base current $V_{CBO} = 30\text{ V}$	I_{CBO}	max.	0.1	0.1 μA
Emitter-base current $V_{EB} = 10\text{ V}$	I_{EBO}	max.	0.1	0.1 μA
Collector-emitter break-down voltage $I_C = 10\text{ mA}$	$V_{(BR)CEO}$	min.	30	60 V
Collector-base breakdown voltage $I_C = 10\text{ }\mu\text{A}$	$V_{(BR)CBO}$	min.	40	80 V
Emitter-base breakdown voltage $I_E = 100\text{ nA}$	$V_{(BR)EBO}$	min.	10	10 V
DC current gain				
$I_C = 1\text{ mA}; V_{CE} = 5\text{ V}$	h_{FE}	min.	4 000	2 000
$I_C = 10\text{ mA}; V_{CE} = 5\text{ V}$	h_{FE}	min.	10 000	4 000
$I_C = 100\text{ mA}; V_{CE} = 5\text{ V}$	h_{FE}	min.	20 000	10 000
Collector-emitter saturation voltage $I_C = 100\text{ mA}; I_B = 0.1\text{ mA}$	V_{CEsat}	max.	1.0	V
Base-emitter saturation voltage $I_C = 100\text{ mA}; I_B = 0.1\text{ mA}$	V_{BEsat}	max.	1.5	V
Transition frequency at $f = 100\text{ MHz}$ $I_C = 30\text{ mA}; V_{CE} = 5\text{ V}$	f_T	typ.	220	MHz
Collector capacitance at $f = 1\text{ MHz}$ $I_E = 0; V_{CB} = 30\text{ V}$	C_c	typ.	3.5	pF

* Mounted on a ceramic substrate of 8 mm x 10 mm x 0.7 mm.