SILICON PLANAR DARLINGTON TRANSISTOR

N-P-N silicon planar darlington transistor in a plastic SOT23 package.
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					
I_C = 1 mA; V_{CE} = 5 V	h_{FE}	>	4 000	2 000	
I_C = 10 mA; V_{CE} = 5 V	h_{FE}	>	10 000	4 000	
I_C = 100 mA; V_{CE} = 5 V	h_{FE}	>	20 000	10 000	
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					
I_C = 100 mA; I_B = 0.1 mA	V_{CEsat}	max.	1.0		V
Transition frequency at f = 100 MHz					
I_C = 30 mA; V_{CE} = 5 V	f_T	typ.	220		MHz

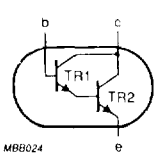
MECHANICAL DATA

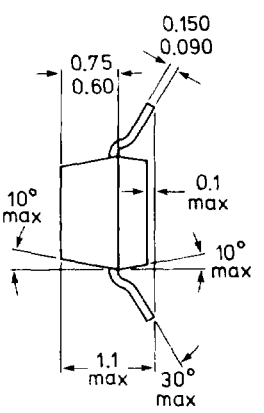
Dimensions in mm

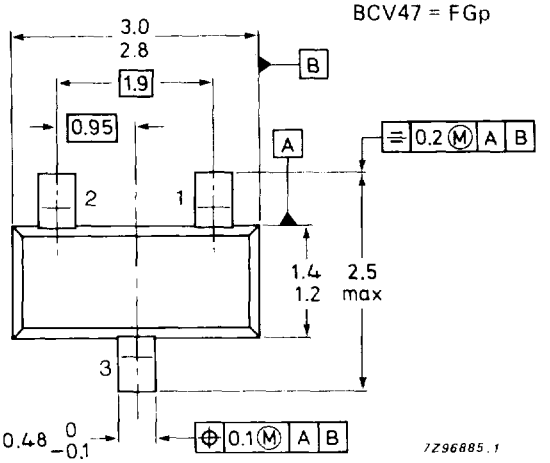
Fig. 1 SOT23

Marking code:
BCV27 = FFp
BCV47 = FGp

Pinning:
1 = base
2 = emitter
3 = collector







TOP VIEW

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 °C*	P_{tot}	max.	250		mW
Storage temperature	T_s		−65 to +150		°C
Junction temperature	T_j	max.	150		°C

THERMAL RESISTANCE

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

CHARACTERISTICS

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

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