

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

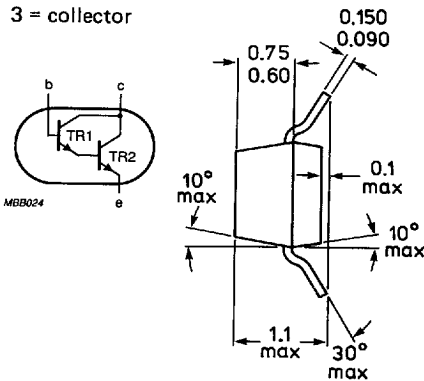
| | | BCV27 | BCV47 |
|---|--|--------------------|--------|
| Collector-emitter voltage (open base) | V_{CEO} max. | 30 | 60 V |
| Collector-base voltage (open emitter) | V_{CBO} max. | 40 | 80 V |
| Collector current | I_C max. | 300 | 500 mA |
| DC current gain | $I_C = 1 \text{ mA}; V_{CE} = 5 \text{ V}$ | $h_{FE} > 4\,000$ | 2 000 |
| | $I_C = 10 \text{ mA}; V_{CE} = 5 \text{ V}$ | $h_{FE} > 10\,000$ | 4 000 |
| | $I_C = 100 \text{ mA}; V_{CE} = 5 \text{ V}$ | $h_{FE} > 20\,000$ | 10 000 |
| Junction temperature | T_j max. | 150 | °C |
| Total power dissipation up to $T_{amb} = 25 \text{ °C}$ | P_{tot} max. | 250 | mW |
| Collector-emitter saturation voltage | V_{CEsat} max. | 1.0 | V |
| | | | |
| Transition frequency at $f = 100 \text{ MHz}$ | f_T typ. | 220 | MHz |
| | | | |

MECHANICAL DATA

Fig. 1 SOT23

Pinning:

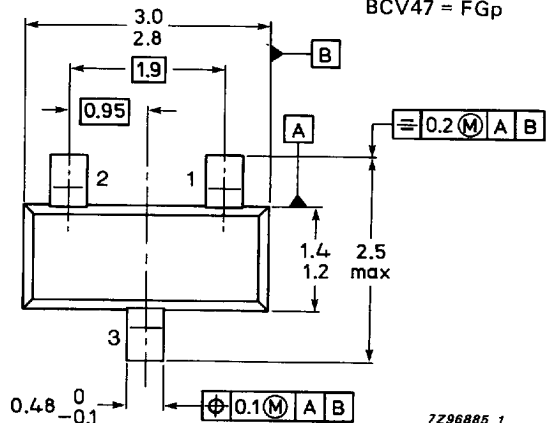
- 1 = base
- 2 = emitter
- 3 = collector



Dimensions in mm

Marking code:

BCV27 = FFp
 BCV47 = FGp



TOP VIEW

7296885.1

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 °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-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 a ceramic substrate of 8 mm x 10 mm x 0.7 mm.