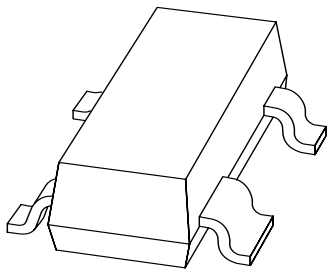


DATA SHEET



BCV64B PNP general purpose double transistor

Product specification
Supersedes data of 1997 Mar 10

1999 May 21

PNP general purpose double transistor

BCV64B

FEATURES

- Low current (max. 100 mA)
- Low voltage (max. 30 and 6 V).

APPLICATIONS

- General purpose switching and amplification
- For use in Schmitt-trigger applications.

DESCRIPTION

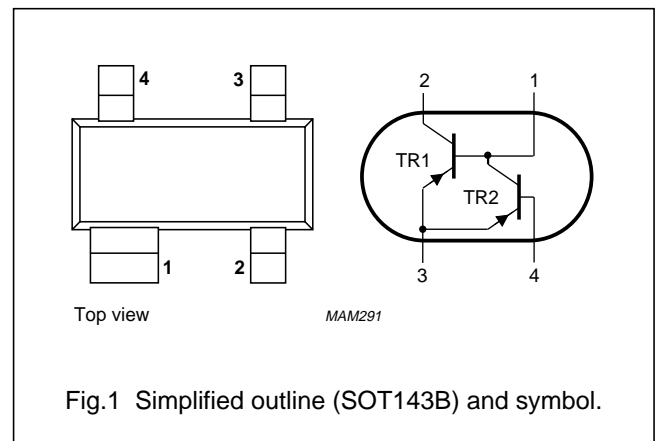
PNP double transistor in a SOT143B plastic package.
NPN complement: BCV63B.

MARKING

| TYPE NUMBER | MARKING CODE |
|-------------|--------------|
| BCV64B | C96 |

PINNING

| PIN | DESCRIPTION |
|-----|----------------------------|
| 1 | collector TR2 and base TR1 |
| 2 | collector TR1 |
| 3 | emitter TR1 and TR2 |
| 4 | base TR2 |



LIMITING VALUES

In accordance with the Absolute Maximum Rating System (IEC 134).

| SYMBOL | PARAMETER | CONDITIONS | MIN. | MAX. | UNIT |
|------------------|-------------------------------|----------------------------------|------|------|------|
| V _{CBO} | collector-base voltage | open emitter | | | |
| | TR1 | | – | –30 | V |
| | TR2 | | – | –6 | V |
| V _{CEO} | collector-emitter voltage | open base | | | |
| | TR1 | | – | –30 | V |
| | TR2 | | – | –6 | V |
| V _{EBO} | emitter-base voltage | open collector | – | –6 | V |
| I _C | collector current (DC) | | – | –100 | mA |
| I _{CM} | peak collector current | | – | –200 | mA |
| I _B | base current (DC) | | – | –100 | mA |
| P _{tot} | total power dissipation | T _{amb} ≤ 25 °C; note 1 | – | 250 | mW |
| T _{stg} | storage temperature | | –65 | +150 | °C |
| T _j | junction temperature | | – | 150 | °C |
| T _{amb} | operating ambient temperature | | –65 | +150 | °C |

Note

1. Transistor mounted on a printed-circuit board.

PNP general purpose double transistor

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THERMAL CHARACTERISTICS

| SYMBOL | PARAMETER | CONDITIONS | VALUE | UNIT |
|---------------|---|------------|-------|------|
| $R_{th\ j-a}$ | thermal resistance from junction to ambient | note 1 | 500 | K/W |

Note

1. Transistor mounted on a printed-circuit board.

CHARACTERISTICS

$T_j = 25\text{ °C}$ unless otherwise specified.

| SYMBOL | PARAMETER | CONDITIONS | MIN. | TYP. | MAX. | UNIT |
|-------------|--|---|----------------|-------------------|-------------------|----------------|
| I_{CBO} | collector cut-off current | $I_E = 0; V_{CB} = -30\text{ V}$ | – | – | –15 | nA |
| | | $I_E = 0; V_{CB} = -30\text{ V}; T_j = 150\text{ °C}$ | – | – | –5 | μA |
| h_{FE} | DC current gain | | | | | |
| | TR1 TR2 | $I_C = -2\text{ mA}; V_{CE} = -5\text{ V}$ $I_C = -2\text{ mA}; V_{CE} = -700\text{ mV}; \text{note 1}$ | 220 220 | – – | 475 475 | |
| V_{CEsat} | collector-emitter saturation voltage | $I_C = -10\text{ mA}; I_B = -0.5\text{ mA}$ | – | –75 | –300 | mV |
| | collector-emitter saturation voltage TR1 TR2 | $I_C = -100\text{ mA}; I_B = -5\text{ mA}$ | – – | –250 –250 | –650 – | mV mV |
| V_{BEsat} | base-emitter saturation voltage | $I_C = -10\text{ mA}; I_B = -0.5\text{ mA}; \text{note 2}$ | – | –700 | – | mV |
| | base-emitter saturation voltage TR1 | $I_C = -100\text{ mA}; I_B = -5\text{ mA}; \text{note 2}$ | – | –850 | – | mV |
| V_{BE} | base-emitter voltage | | | | | |
| | TR1 TR1 TR2 | $I_C = -2\text{ mA}; V_{CE} = -5\text{ V}; \text{note 3}$ $I_C = -10\text{ mA}; V_{CE} = -5\text{ V}; \text{note 3}$ $I_C = -2\text{ mA}; V_{CE} = -700\text{ mV}; \text{note 3}$ | –600 – – | –650 – –700 | –750 –820 – | mV mV mV |
| | collector capacitance TR1 | $I_E = I_E = 0; V_{CB} = -10\text{ V}; f = 1\text{ MHz}$ | – | 4 | – | pF |
| f_T | transition frequency TR1 | $I_C = -10\text{ mA}; V_{CE} = -5\text{ V};$ $f = 100\text{ MHz}$ | 100 | – | – | MHz |

Notes

1. Group selection will be done on TR1. Due to matched dies, h_{FE} values for TR2 are the same as for TR1.
2. V_{BEsat} decreases by approximately 1.7 mV/K with increasing temperature.
3. V_{BE} decreases by approximately –2 mV/K with increasing temperature.

PNP general purpose double transistor

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APPLICATION INFORMATION

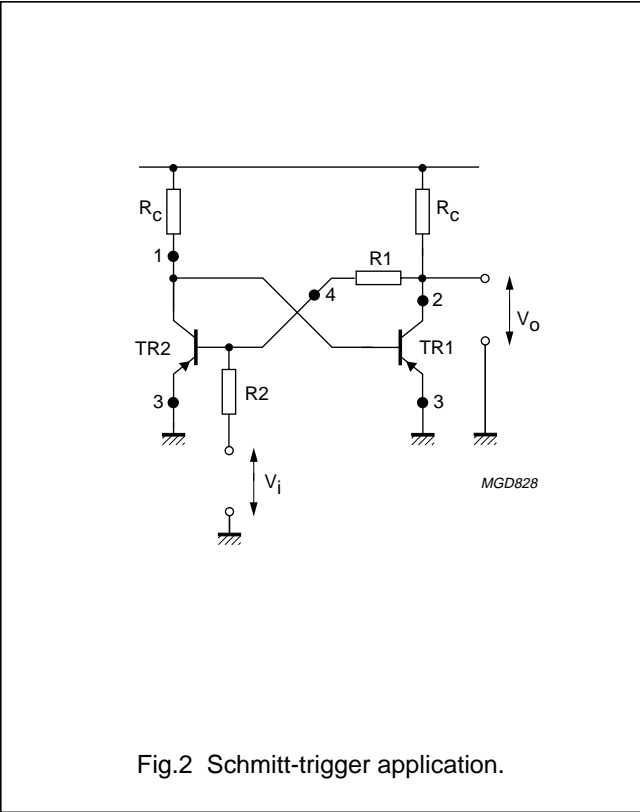


Fig.2 Schmitt-trigger application.

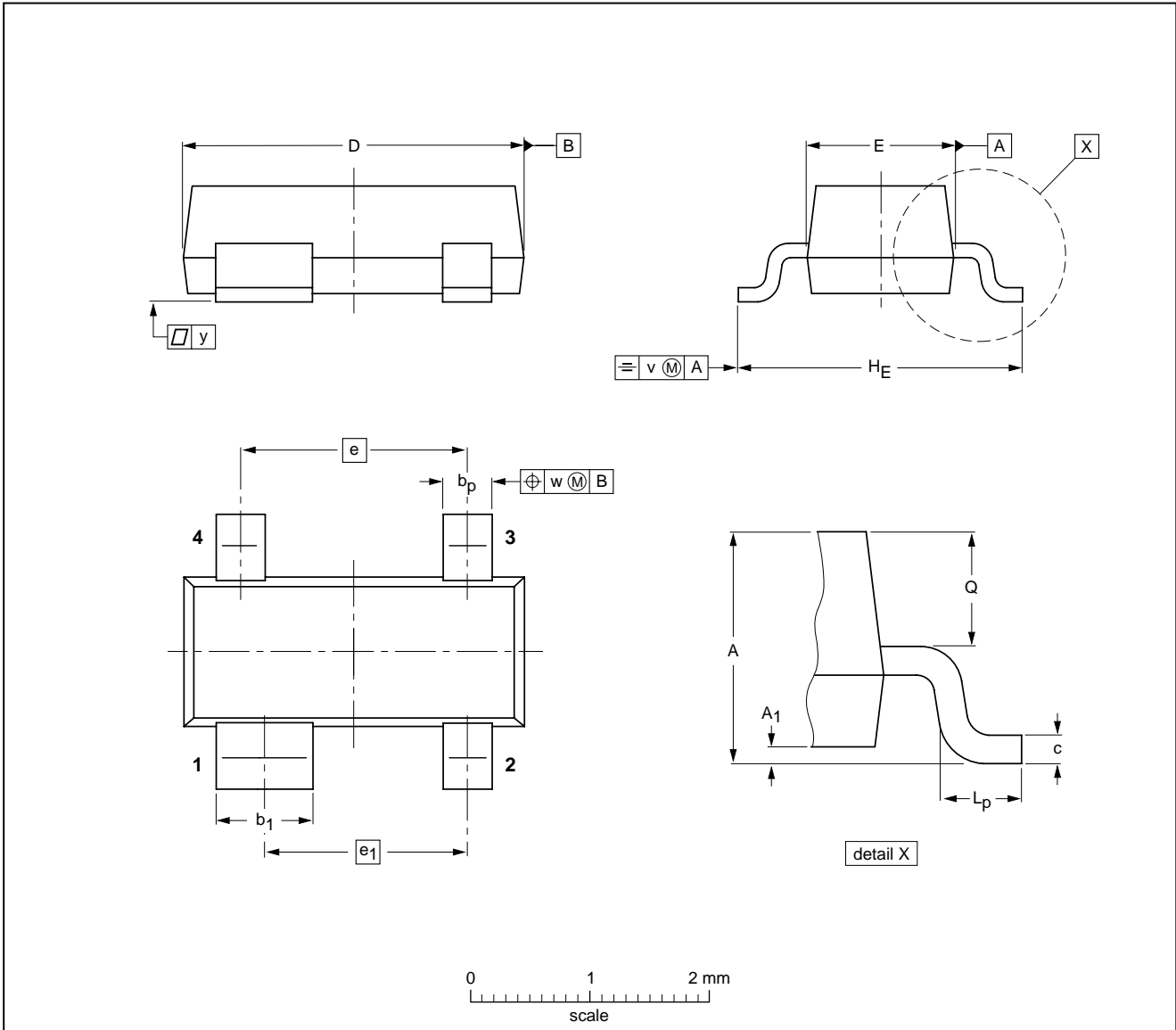
PNP general purpose double transistor

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PACKAGE OUTLINE

Plastic surface mounted package; 4 leads

SOT143B



DIMENSIONS (mm are the original dimensions)

| UNIT | A | A ₁ max | b _p | b ₁ | c | D | E | e | e ₁ | H _E | L _p | Q | v | w | y |
|------|------------|-----------------------|----------------|----------------|--------------|------------|------------|-----|----------------|----------------|----------------|--------------|-----|-----|-----|
| mm | 1.1 0.9 | 0.1 | 0.48 0.38 | 0.88 0.78 | 0.15 0.09 | 3.0 2.8 | 1.4 1.2 | 1.9 | 1.7 | 2.5 2.1 | 0.45 0.15 | 0.55 0.45 | 0.2 | 0.1 | 0.1 |

| OUTLINE VERSION | REFERENCES | | | | EUROPEAN PROJECTION | ISSUE DATE |
|--------------------|------------|-------|------|--|------------------------|------------|
| | IEC | JEDEC | EIAJ | | | |
| SOT143B | | | | | | 97-02-28 |

PNP general purpose double transistor

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DEFINITIONS

| | |
|---|---|
| Data Sheet Status | |
| Objective specification | This data sheet contains target or goal specifications for product development. |
| Preliminary specification | This data sheet contains preliminary data; supplementary data may be published later. |
| Product specification | This data sheet contains final product specifications. |
| Limiting values | |
| Limiting values given are in accordance with the Absolute Maximum Rating System (IEC 134). Stress above one or more of the limiting values may cause permanent damage to the device. These are stress ratings only and operation of the device at these or at any other conditions above those given in the Characteristics sections of the specification is not implied. Exposure to limiting values for extended periods may affect device reliability. | |
| Application information | |
| Where application information is given, it is advisory and does not form part of the specification. | |

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PNP general purpose double transistor

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