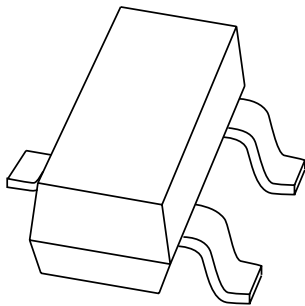


DATA SHEET



BSS63 PNP high-voltage transistor

Product specification
Supersedes data of September 1994
File under Discrete Semiconductors, SC04

1997 Jul 03

PNP high-voltage transistor

BSS63

FEATURES

- Low current (max. 100 mA)
- High voltage (max. 100 V).

APPLICATIONS

- High-voltage general purpose
- Switching applications.

DESCRIPTION

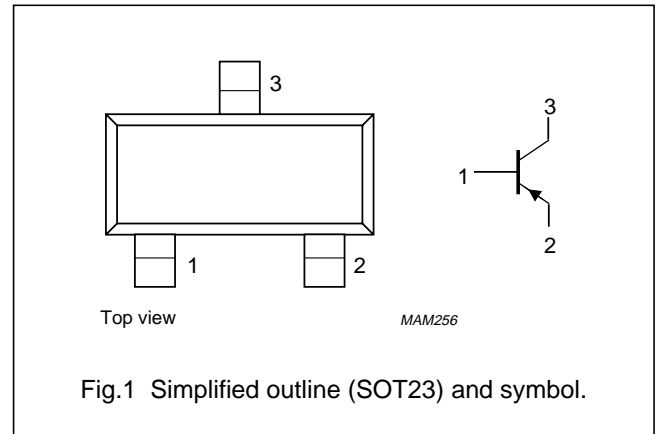
PNP high-voltage transistor in a SOT23 plastic package.
NPN complement: BSS64.

MARKING

| TYPE NUMBER | MARKING CODE |
|-------------|--------------|
| BSS63 | BMp |

PINNING

| PIN | DESCRIPTION |
|-----|-------------|
| 1 | base |
| 2 | emitter |
| 3 | collector |



QUICK REFERENCE DATA

| SYMBOL | PARAMETER | CONDITIONS | MIN. | TYP. | MAX. | UNIT |
|-----------|---------------------------|---|------|------|------|------|
| V_{CBO} | collector-base voltage | open emitter | – | – | –110 | V |
| V_{CEO} | collector-emitter voltage | open base | – | – | –100 | V |
| I_{CM} | peak collector current | | – | – | –100 | mA |
| P_{tot} | total power dissipation | $T_{amb} \leq 25\text{ }^\circ\text{C}$ | – | – | 250 | mW |
| h_{FE} | DC current gain | $I_C = -25\text{ mA}; V_{CE} = -5\text{ V}$ | 30 | – | – | |
| f_T | transition frequency | $I_C = -25\text{ mA}; V_{CE} = -5\text{ V}; f = 100\text{ MHz}$ | 50 | 85 | – | MHz |

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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 | – | –110 | V |
| V_{CEO} | collector-emitter voltage | open base | – | –100 | V |
| V_{EBO} | emitter-base voltage | open collector | – | –6 | V |
| I_C | collector current (DC) | | – | –100 | mA |
| I_{CM} | peak collector current | | – | –100 | mA |
| I_{BM} | peak base current | | – | –100 | mA |
| P_{tot} | total power dissipation | $T_{amb} \leq 25\text{ °C}$ | – | 250 | mW |
| T_{stg} | storage temperature | | –65 | +150 | °C |
| T_j | junction temperature | | – | 150 | °C |
| T_{amb} | operating ambient temperature | | –65 | +150 | °C |

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 an FR4 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 | $I_E = 0; V_{CB} = -90\text{ V}$ | – | – | –100 | nA |
| | | $I_E = 0; V_{CB} = -90\text{ V}; T_j = 150\text{ °C}$ | – | – | –50 | μA |
| I_{EBO} | emitter cut-off current | $I_C = 0; V_{EB} = -6\text{ V}$ | | | –100 | nA |
| h_{FE} | DC current gain | $I_C = -10\text{ mA}; V_{CE} = -1\text{ V}$ | 30 | – | – | |
| | | $I_C = -25\text{ mA}; V_{CE} = -1\text{ V}$ | 30 | – | – | |
| V_{CEsat} | collector-emitter saturation voltage | $I_C = -25\text{ mA}; I_B = -2.5\text{ mA}$ | – | – | –250 | mV |
| V_{BEsat} | base-emitter saturation voltage | $I_C = -25\text{ mA}; I_B = -2.5\text{ mA}$ | – | – | –900 | mV |
| C_c | collector capacitance | $I_E = I_e = 0; V_{CB} = -10\text{ V}; f = 1\text{ MHz}$ | – | 3 | – | pF |
| f_T | transition frequency | $I_C = -25\text{ mA}; V_{CE} = -5\text{ V}; f = 100\text{ MHz}$ | 50 | 85 | – | MHz |

PNP high-voltage transistor

BSS63

PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT23



DIMENSIONS (mm are the original dimensions)

| UNIT | A | A ₁ max. | b _p | c | D | E | e | e ₁ | H _E | L _p | Q | v | w |
|------|------------|------------------------|----------------|--------------|------------|------------|-----|----------------|----------------|----------------|--------------|-----|-----|
| mm | 1.1 0.9 | 0.1 | 0.48 0.38 | 0.15 0.09 | 3.0 2.8 | 1.4 1.2 | 1.9 | 0.95 | 2.5 2.1 | 0.45 0.15 | 0.55 0.45 | 0.2 | 0.1 |

| OUTLINE VERSION | REFERENCES | | | | EUROPEAN PROJECTION | ISSUE DATE |
|-----------------|------------|-------|------|--|---------------------|------------|
| | IEC | JEDEC | EIAJ | | | |
| SOT23 | | | | | | 97-02-28 |

PNP high-voltage 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. | |

LIFE SUPPORT APPLICATIONS

These products are not designed for use in life support appliances, devices, or systems where malfunction of these products can reasonably be expected to result in personal injury. Philips customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Philips for any damages resulting from such improper use or sale.

PNP high-voltage transistor

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NOTES

PNP high-voltage transistor

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NOTES

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