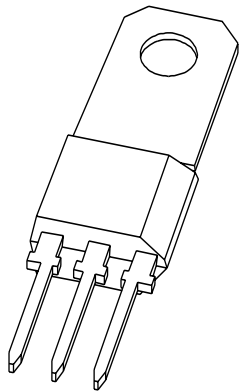


DATA SHEET



BF869; BF871 NPN high-voltage transistors

Product specification
Supersedes data of 1996 Dec 09

1999 Apr 12

NPN high-voltage transistors

BF869; BF871

FEATURES

- Low feedback capacitance.

APPLICATIONS

- For use in class-B video output stages in colour television receivers.

DESCRIPTION

NPN transistors in a TO-202 plastic package.
PNP complement: BF872.

PINNING

| PIN | DESCRIPTION |
|-----|---------------------------------------|
| 1 | emitter |
| 2 | collector, connected to mounting base |
| 3 | base |

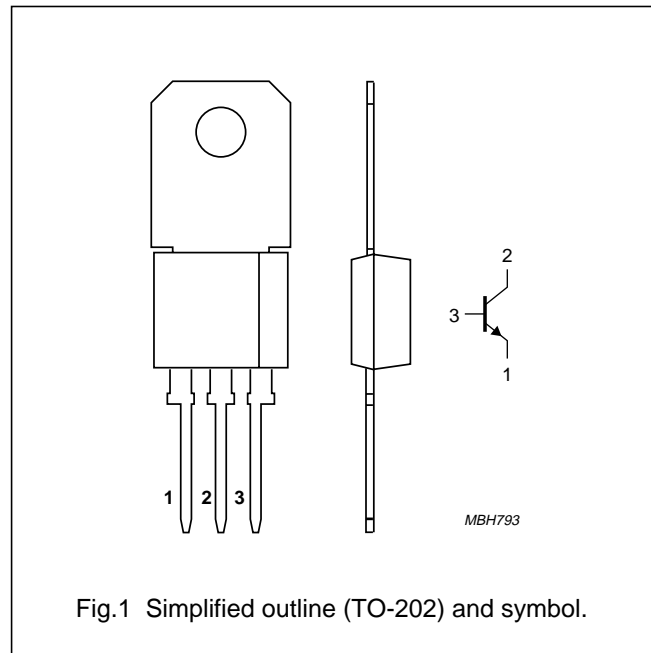


Fig.1 Simplified outline (TO-202) and symbol.

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 | | | |
| | BF869 | | – | 250 | V |
| | BF871 | | – | 300 | V |
| V _{CEO} | collector-emitter voltage | open base | | | |
| | BF869 | | – | 250 | V |
| | BF871 | | – | 300 | V |
| V _{EBO} | emitter-base voltage | open collector | – | 5 | V |
| I _C | collector current (DC) | | – | 50 | mA |
| I _{CM} | peak collector current | peak value | – | 100 | mA |
| I _{BM} | peak base current | | – | 50 | mA |
| P _{tot} | total power dissipation | T _{amb} ≤ 25 °C | – | 1.6 | W |
| | | T _{mb} ≤ 25 °C | – | 5 | W |
| T _{stg} | storage temperature | | –65 | +150 | °C |
| T _j | junction temperature | | – | 150 | °C |
| T _{amb} | operating ambient temperature | | –65 | +150 | °C |

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THERMAL CHARACTERISTICS

| SYMBOL | PARAMETER | VALUE | UNIT |
|----------------|---|-------|------|
| $R_{th\ j-a}$ | thermal resistance from junction to ambient | 78 | K/W |
| $R_{th\ j-mb}$ | thermal resistance from junction to mounting base | 25 | K/W |

CHARACTERISTICS

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

| SYMBOL | PARAMETER | CONDITIONS | MIN. | MAX. | UNIT |
|-------------|--------------------------------------|--|------|------|---------------|
| I_{CBO} | collector cut-off current | $I_E = 0; V_{CB} = 200\text{ V}$ | – | 10 | nA |
| | | $I_E = 0; V_{CB} = 200\text{ V}; T_j = 150\text{ °C}$ | | 10 | μA |
| I_{EBO} | emitter cut-off current | $I_C = 0; V_{EB} = 5\text{ V}$ | – | 50 | nA |
| h_{FE} | DC current gain | $I_C = 25\text{ mA}; V_{CE} = 20\text{ V}$ | 50 | – | |
| V_{CEsat} | collector-emitter saturation voltage | $I_C = 30\text{ mA}; I_B = 5\text{ mA}$ | – | 600 | mV |
| C_{re} | feedback capacitance | $I_C = i_c = 0; V_{CE} = 30\text{ V}; f = 1\text{ MHz}$ | – | 2 | pF |
| f_T | transition frequency | $I_C = 10\text{ mA}; V_{CE} = 10\text{ V}; f = 100\text{ MHz}$ | 60 | – | MHz |

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PACKAGE OUTLINE

Plastic single-ended leaded (through hole) package; with cooling fin, mountable to heatsink, 1 mounting hole; 3 leads (in-line)

SOT128B



DIMENSIONS (mm are the original dimensions)

| UNIT | A | b _p | c | c ₁ | D | E | E ₁ | e | e ₁ | H _E | L | L ₁ | L ₂ ⁽¹⁾ max | P | P ₁ | Q | w |
|------|------------|----------------|-------------|----------------|------------|-------------|----------------|------|----------------|----------------|--------------|----------------|--------------------------------------|------------|----------------|------------|------|
| mm | 4.6 4.4 | 0.8 0.6 | 0.65 0.5 | 0.56 0.46 | 8.6 8.4 | 10.1 9.9 | 10.4 10.0 | 5.08 | 2.54 | 24.2 23.8 | 13.3 12.2 | 2.4 2.0 | 2.5 | 3.8 3.6 | 3.9 3.7 | 1.7 1.5 | 0.25 |

Note

1. Plastic flash allowed within this zone

| OUTLINE VERSION | REFERENCES | | | | EUROPEAN PROJECTION | ISSUE DATE |
|-----------------|------------|--------|------|--|---------------------|------------|
| | IEC | JEDEC | EIAJ | | | |
| SOT128B | | TO-202 | | | | 97-02-28 |

NPN high-voltage transistors

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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.

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NOTES

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NOTES

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