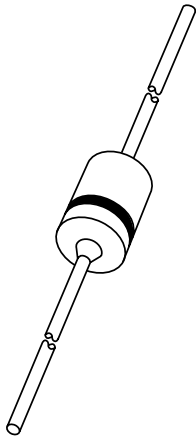


DATA SHEET



BZV86 series Low-voltage stabistors

Product specification
Supersedes data of April 1992

1996 Mar 21

Low-voltage stabistors

BZV86 series

FEATURES

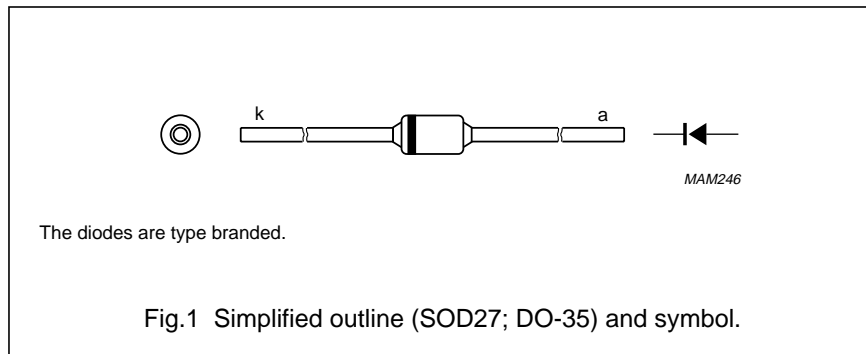
- Low-voltage stabilization
- Forward voltage range: 1.4 to 3.2 V
- Total power dissipation: max. 330 mW
- Differential resistance range: max. 20 to 35 Ω .

APPLICATIONS

- Power clipping
- Level shifting
- Low-voltage regulation
- Temperature stabilization.

DESCRIPTION

Low-voltage stabilization diode in a hermetically-sealed SOD27 (DO-35) glass package. The series consists of four types: BZV86-1V4 to BZV86-3V2.



LIMITING VALUES

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

| SYMBOL | PARAMETER | CONDITIONS | MIN. | MAX. | UNIT |
|-----------|----------------------------|--------------------------------------|------|------|------------------|
| V_R | continuous reverse voltage | | – | 10 | V |
| I_F | continuous forward current | | | | |
| | BZV86-1V4 | | – | 200 | mA |
| | BZV86-2V0 | | – | 150 | mA |
| | BZV86-2V6 | | – | 125 | mA |
| | BZV86-3V2 | | – | 100 | mA |
| P_{tot} | total power dissipation | $T_{amb} = 25\text{ }^\circ\text{C}$ | – | 330 | mW |
| T_{stg} | storage temperature | | –65 | +150 | $^\circ\text{C}$ |
| T_j | junction temperature | | – | 150 | $^\circ\text{C}$ |

Low-voltage stabistors

BZV86 series

ELECTRICAL CHARACTERISTICS

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

| SYMBOL | PARAMETER | CONDITIONS | MIN. | TYP. | MAX. | UNIT |
|-----------|-------------------------|---|------|-------|------|----------|
| V_F | forward voltage | $I_F = 5\text{ mA}$; see Fig.2 | | | | |
| | BZV86-1V4 | | 1.30 | – | 1.50 | V |
| | BZV86-2V0 | | 1.85 | – | 2.15 | V |
| | BZV86-2V6 | | 2.35 | – | 2.80 | V |
| | BZV86-3V2 | | 2.85 | – | 3.45 | V |
| I_R | reverse current | $V_R = 5\text{ V}$ | – | – | 200 | nA |
| r_{dif} | differential resistance | $I_F = 1\text{ mA}$; $f = 1\text{ kHz}$ | | | | |
| | BZV86-1V4 | | – | 55 | – | Ω |
| | BZV86-2V0 | | – | 80 | – | Ω |
| | BZV86-2V6 | | – | 90 | – | Ω |
| | BZV86-3V2 | | – | 100 | – | Ω |
| r_{dif} | differential resistance | $I_F = 5\text{ mA}$; $f = 1\text{ kHz}$ | | | | |
| | BZV86-1V4 | | – | 10 | 20 | Ω |
| | BZV86-2V0 | | – | 15 | 30 | Ω |
| | BZV86-2V6 | | – | 18 | 32.5 | Ω |
| | BZV86-3V2 | | – | 20 | 35 | Ω |
| r_{dif} | differential resistance | $I_F = 10\text{ mA}$; $f = 1\text{ kHz}$ | | | | |
| | BZV86-1V4 | | – | 6 | 10 | Ω |
| | BZV86-2V0 | | – | 8 | 15 | Ω |
| | BZV86-2V6 | | – | 9 | 17.5 | Ω |
| | BZV86-3V2 | | – | 10 | 20 | Ω |
| S_F | temperature coefficient | $I_F = 5\text{ mA}$ | | | | |
| | BZV86-1V4 | | – | –3.8 | – | mV/K |
| | BZV86-2V0 | | – | –6.0 | – | mV/K |
| | BZV86-2V6 | | – | –8.5 | – | mV/K |
| | BZV86-3V2 | | – | –11.5 | – | mV/K |
| C_d | diode capacitance | $V_R = 0\text{ V}$; $f = 1\text{ MHz}$ | – | 15 | 25 | pF |

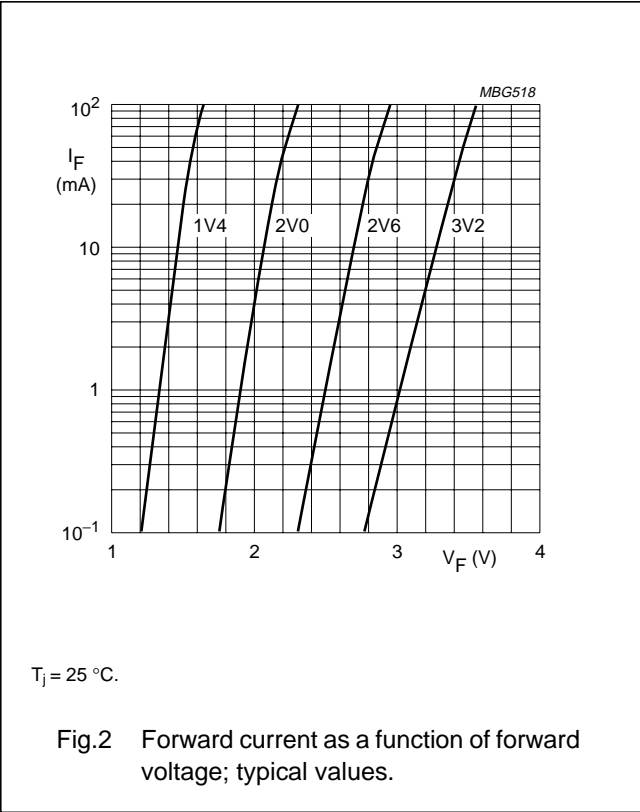
THERMAL CHARACTERISTICS

| SYMBOL | PARAMETER | CONDITIONS | VALUE | UNIT |
|----------------|---|--------------------|-------|------|
| $R_{th\ j-tp}$ | thermal resistance from junction to tie-point | 8 mm from the body | 300 | K/W |
| $R_{th\ j-a}$ | thermal resistance from junction to ambient | lead length 10 mm | 380 | K/W |

Low-voltage stabistors

BZV86 series

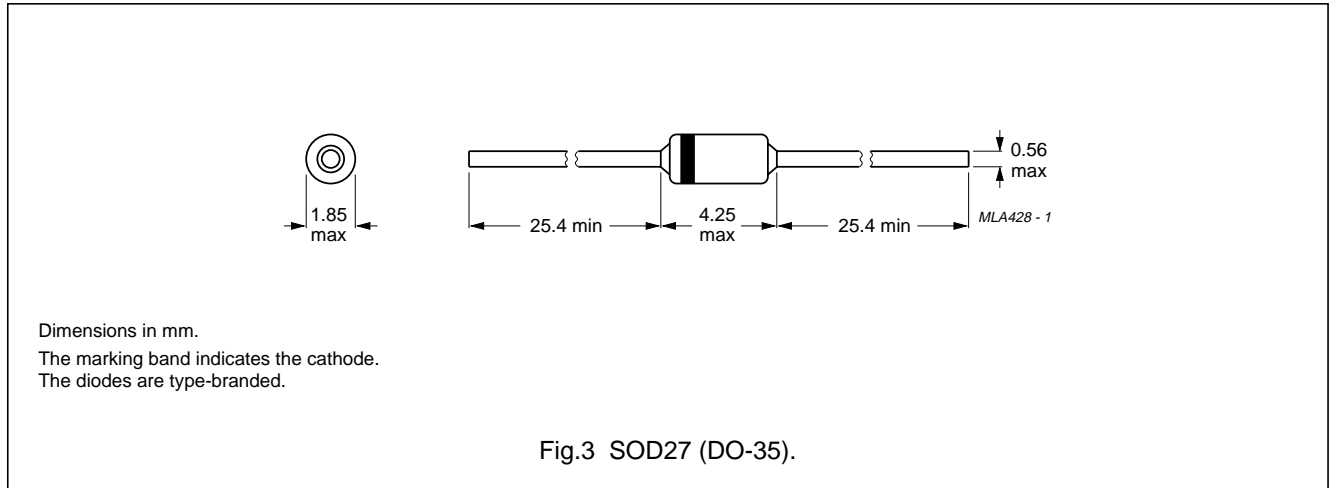
GRAPHICAL DATA



Low-voltage stabistors

BZV86 series

PACKAGE OUTLINE



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.