

# DATA SHEET



## **BZV87 series** Low-voltage stabistors

Product specification  
Supersedes data of April 1992

1996 Mar 21

# Low-voltage stabistors

# BZV87 series

### FEATURES

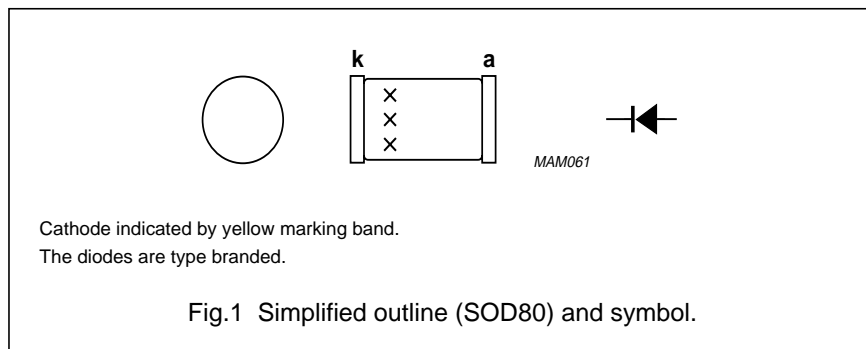
- Low-voltage stabilization
- Forward voltage range: 1.4 to 3.2 V
- Total power dissipation: max. 330 mW
- Differential resistance range: max. 20 to 35 Ω.

### APPLICATIONS

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

### DESCRIPTION

Low-voltage stabilization diode in a small glass SOD80 SMD package.  
The series consists of four types: BZV87-1V4 to BZV87-3V2.



### LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V <sub>R</sub>	continuous reverse voltage		–	10	V
I <sub>F</sub>	continuous forward current				
	BZV87-1V4		–	200	mA
	BZV87-2V0		–	150	mA
	BZV87-2V6		–	125	mA
	BZV87-3V2		–	100	mA
P <sub>tot</sub>	total power dissipation	T <sub>amb</sub> = 25 °C	–	330	mW
T <sub>stg</sub>	storage temperature		–65	+150	°C
T <sub>j</sub>	junction temperature		–	150	°C

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**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				
	BZV87-1V4		1.30	–	1.50	V
	BZV87-2V0		1.85	–	2.15	V
	BZV87-2V6		2.35	–	2.80	V
	BZV87-3V2		2.85	–	3.45	V
$I_R$	reverse current	$V_R = 5\text{ V}$	–	–	200	nA
$r_{dif}$	differential resistance	$I_F = 1\text{ mA}$ ; $f = 1\text{ kHz}$				
	BZV87-1V4		–	55	–	$\Omega$
	BZV87-2V0		–	80	–	$\Omega$
	BZV87-2V6		–	90	–	$\Omega$
	BZV87-3V2		–	100	–	$\Omega$
$r_{dif}$	differential resistance	$I_F = 5\text{ mA}$ ; $f = 1\text{ kHz}$				
	BZV87-1V4		–	10	20	$\Omega$
	BZV87-2V0		–	15	30	$\Omega$
	BZV87-2V6		–	18	32.5	$\Omega$
	BZV87-3V2		–	20	35	$\Omega$
$r_{dif}$	differential resistance	$I_F = 10\text{ mA}$ ; $f = 1\text{ kHz}$				
	BZV87-1V4		–	6	10	$\Omega$
	BZV87-2V0		–	8	15	$\Omega$
	BZV87-2V6		–	9	17.5	$\Omega$
	BZV87-3V2		–	10	20	$\Omega$
$S_F$	temperature coefficient	$I_F = 5\text{ mA}$				
	BZV87-1V4		–	–3.8	–	mV/K
	BZV87-2V0		–	–6.0	–	mV/K
	BZV87-2V6		–	–8.5	–	mV/K
	BZV87-3V2		–	–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		300	K/W
$R_{th\ j-a}$	thermal resistance from junction to ambient	note 1	380	K/W

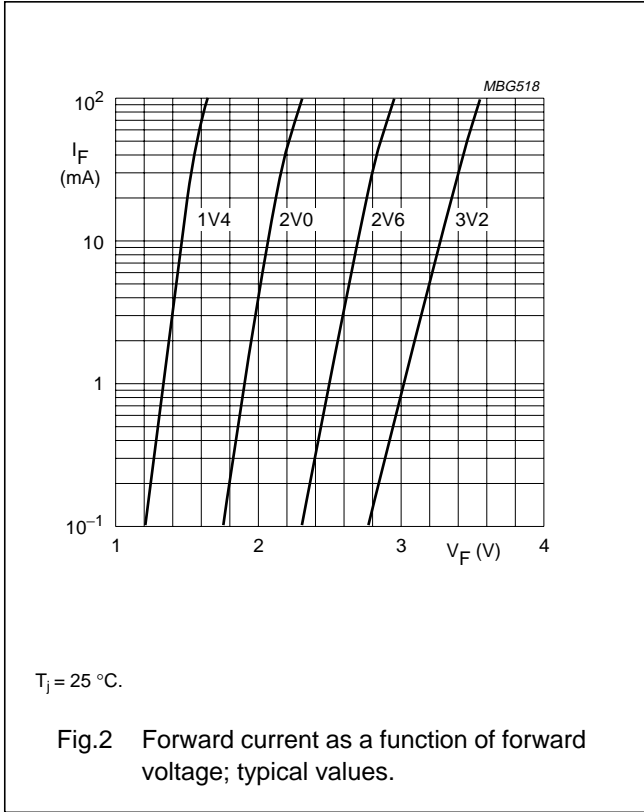
**Note**

1. Device mounted on a FR4 printed-circuit board.

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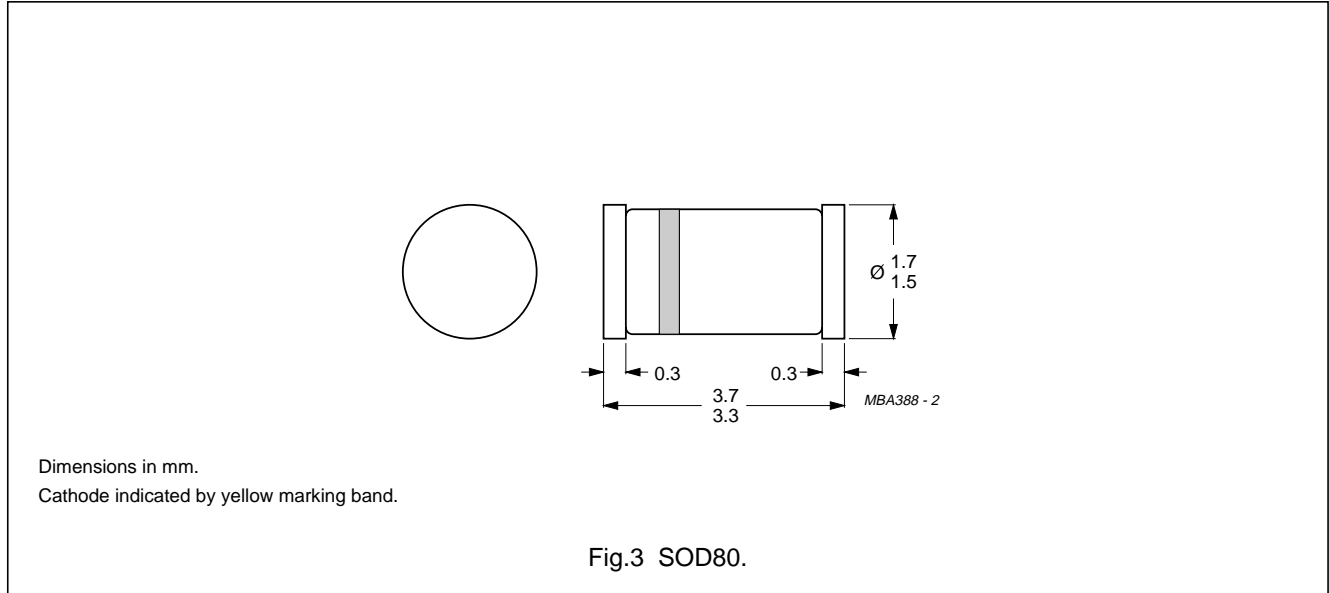
GRAPHICAL DATA



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PACKAGE OUTLINE



DEFINITIONS

<b>Data sheet status</b>	
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.
<b>Limiting values</b>	
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.	
<b>Application information</b>	
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.