

# DATA SHEET



## **BAS81; BAS82; BAS83** Schottky barrier diodes

Product specification  
Supersedes data of 1996 Sep 30

1998 Jun 24

# Schottky barrier diodes

# BAS81; BAS82; BAS83

### FEATURES

- Low forward voltage
- High breakdown voltage
- Guard ring protected
- Hermetically-sealed small SMD package
- Low diode capacitance.

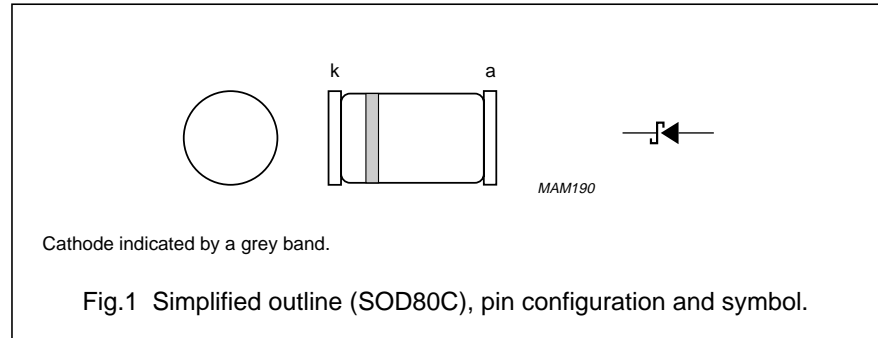
### APPLICATIONS

- Ultra high-speed switching
- Voltage clamping
- Protection circuits
- Blocking diodes.

### DESCRIPTION

Planar Schottky barrier diode with an integrated protection ring against static discharges. This surface mounted diode is encapsulated in a

hermetically sealed SOD80C glass SMD package with tin-plated metal discs at each end. It is suitable for "automatic placement" and as such it can withstand immersion soldering.



### 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				
	BAS81		–	40	V
	BAS82		–	50	V
	BAS83		–	60	V
I <sub>F</sub>	continuous forward current		–	30	mA
I <sub>FRM</sub>	repetitive peak forward current	t <sub>p</sub> ≤ 1 s; δ ≤ 0.5	–	150	mA
I <sub>FSM</sub>	non-repetitive peak forward current	t <sub>p</sub> = 1 s	–	500	mA
T <sub>stg</sub>	storage temperature		–65	+150	°C
T <sub>j</sub>	junction temperature		–	125	°C

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**ELECTRICAL CHARACTERISTICS**

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

SYMBOL	PARAMETER	CONDITIONS	MAX.	UNIT
$V_F$	forward voltage	see Fig.2 $I_F = 0.1\text{ mA}$ $I_F = 1\text{ mA}$ $I_F = 15\text{ mA}$	330 410 1	mV mV V
$I_R$	reverse current	$V_R = V_{Rmax}$ ; see Fig.3	200	nA
$C_d$	diode capacitance	$f = 1\text{ MHz}$ ; $V_R = 2\text{ V}$ ; see Fig.4	1.6	pF

**Note**

1. Pulsed test:  $t_p = 300\text{ }\mu\text{s}$ ;  $\delta = 0.02$ .

**THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j-a}$	thermal resistance from junction to ambient	note 1	320	K/W

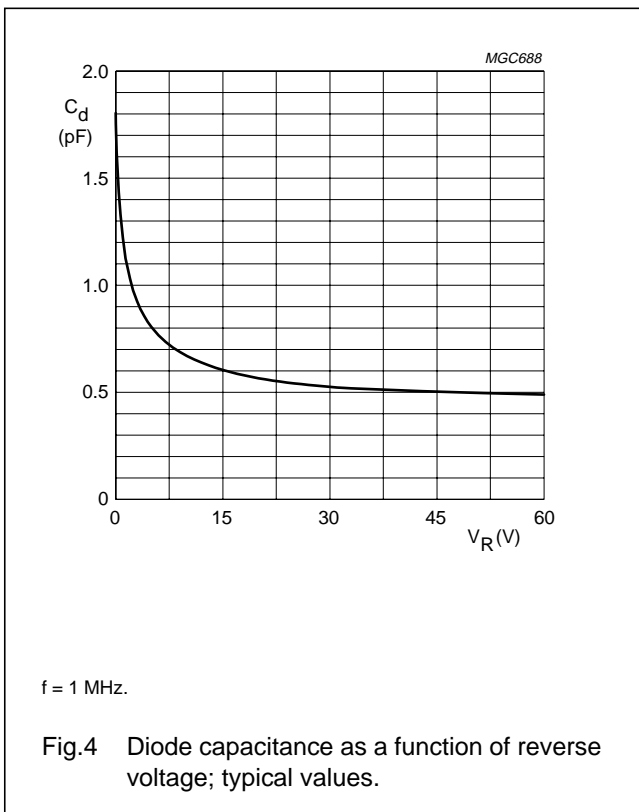
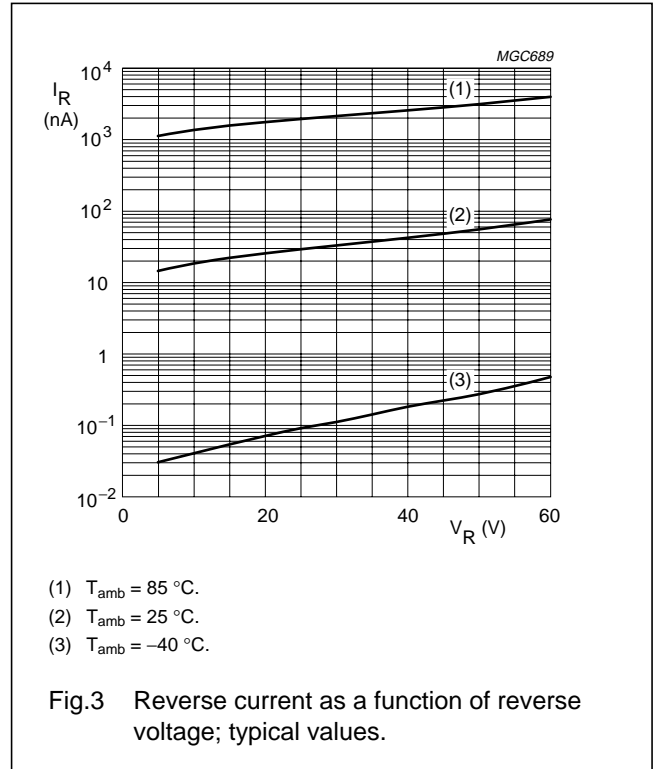
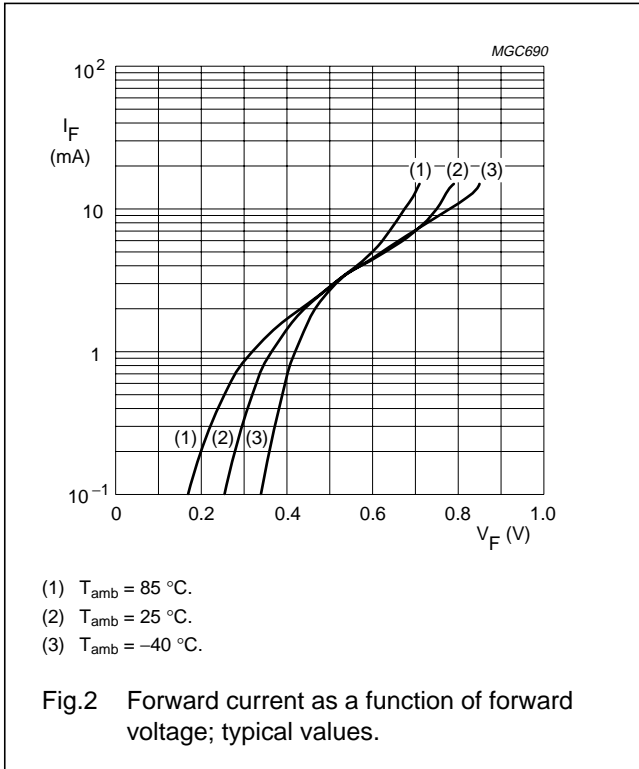
**Note**

1. Refer to SOD80 standard mounting conditions.

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GRAPHICAL DATA



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## PACKAGE OUTLINE

Hermetically sealed glass surface mounted package; 2 connectors

SOD80C

**DIMENSIONS (mm are the original dimensions)**

UNIT	D	H	L
mm	1.60 1.45	3.7 3.3	0.3

**Note**  
1. The marking band indicates the cathode.

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ			
SOD80C	100H01					97-06-20

## 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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