

# DATA SHEET



## **BAS86** Schottky barrier diode

Product specification  
Supersedes data of 1996 Mar 20

1996 Oct 01

# Schottky barrier diode

# BAS86

## FEATURES

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

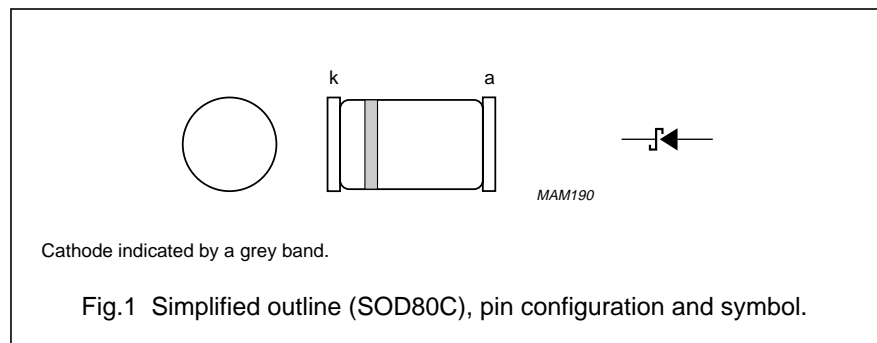
## APPLICATIONS

- 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
$V_R$	continuous reverse voltage		–	50	V
$I_F$	continuous forward current		–	200	mA
$I_{F(AV)}$	average forward current	see Fig.2	–	200	mA
$I_{FRM}$	repetitive peak forward current	$t_p \leq 1 \text{ sec.}; \delta \leq 0.5$	–	500	mA
$I_{FSM}$	non-repetitive peak forward current	$t_p = 10 \text{ ms}$		5	A
$T_{stg}$	storage temperature		–65	+150	°C
$T_j$	junction temperature		–	125	°C
$T_{amb}$	operating ambient temperature		–65	+125	°C

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**ELECTRICAL CHARACTERISTICS** $T_{amb} = 25\text{ °C}$  unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MAX.	UNIT
$V_F$	forward voltage	see Fig.3		
		$I_F = 0.1\text{ mA}$	300	mV
		$I_F = 1\text{ mA}$	380	mV
		$I_F = 10\text{ mA}$	450	mV
		$I_F = 30\text{ mA}$	600	mV
		$I_F = 100\text{ mA}$	900	mV
$I_R$	reverse current	$V_R = 40\text{ V}$ ; see Fig.4; note 1	5	$\mu\text{A}$
$t_{rr}$	reverse recovery time	when switched from $I_F = 10\text{ mA}$ to $I_R = 10\text{ mA}$ ; $R_L = 100\ \Omega$ ; measured at $I_R = 1\text{ mA}$ ; see Fig.6	4	ns
$C_d$	diode capacitance	$f = 1\text{ MHz}$ ; $V_R = 1\text{ V}$ ; see Fig.5	8	pF

**Note**

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

**THERMAL CHARACTERISTICS**

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

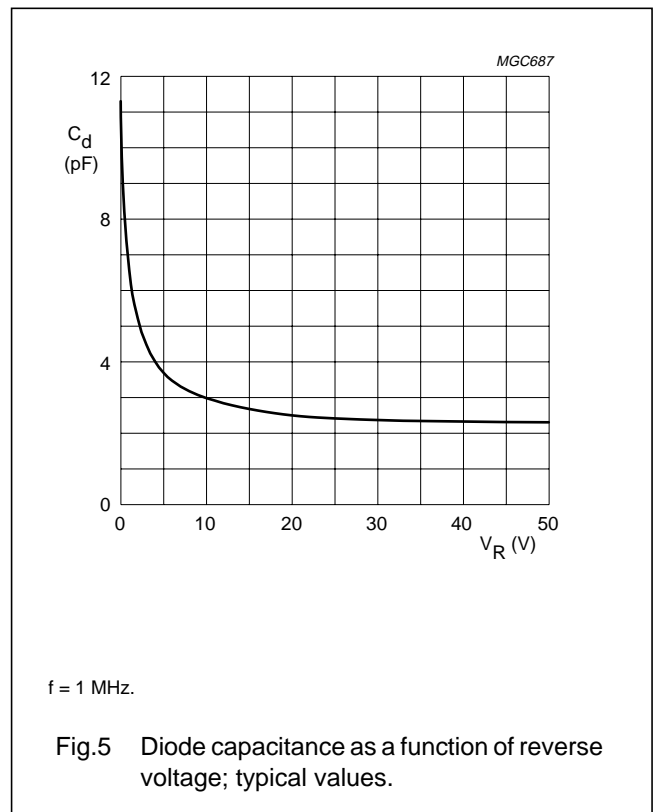
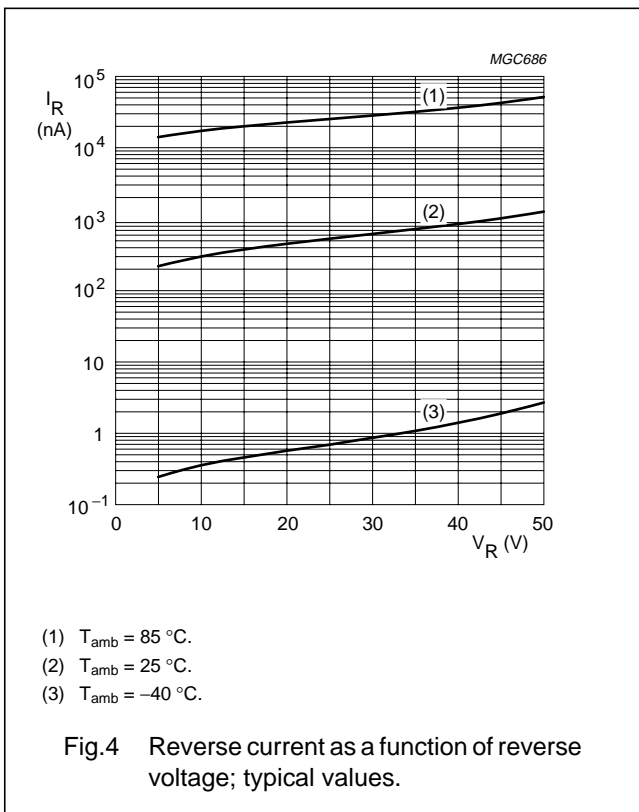
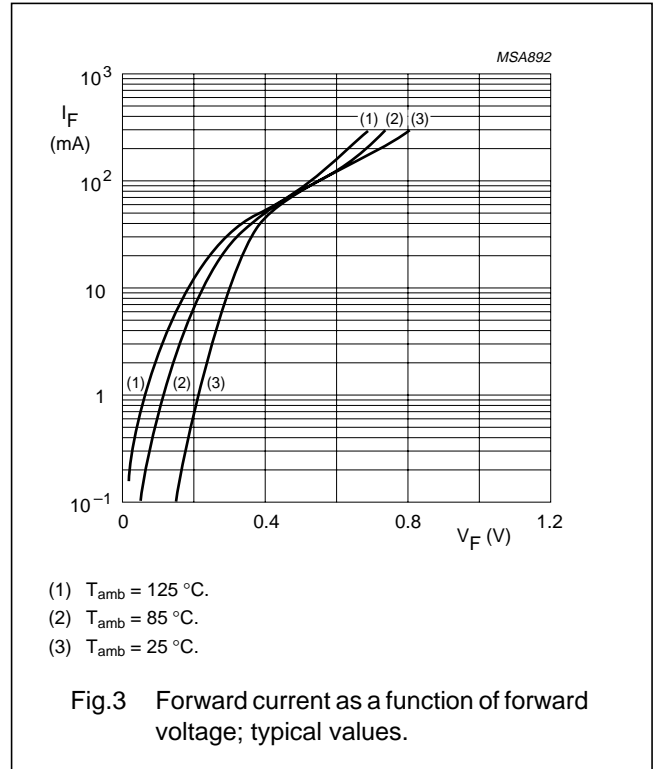
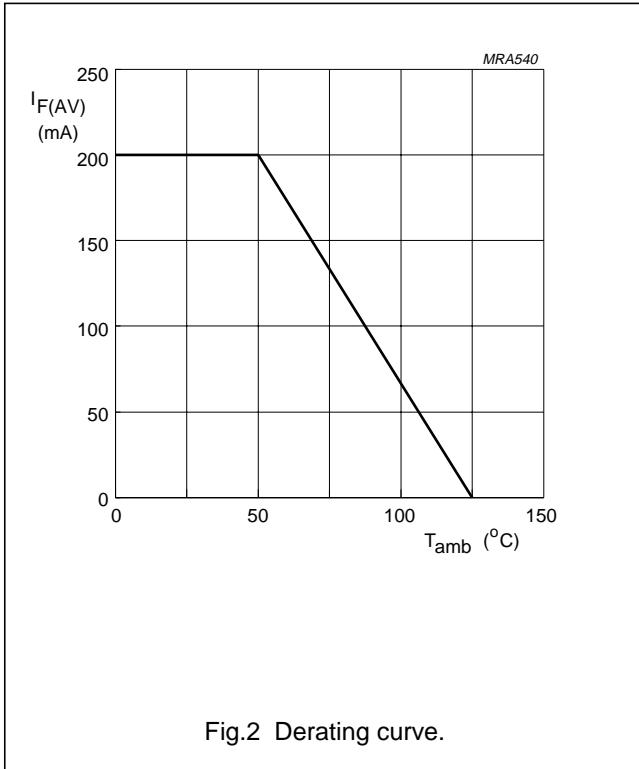
**Note**

1. Refer to SOD80 standard mounting conditions.

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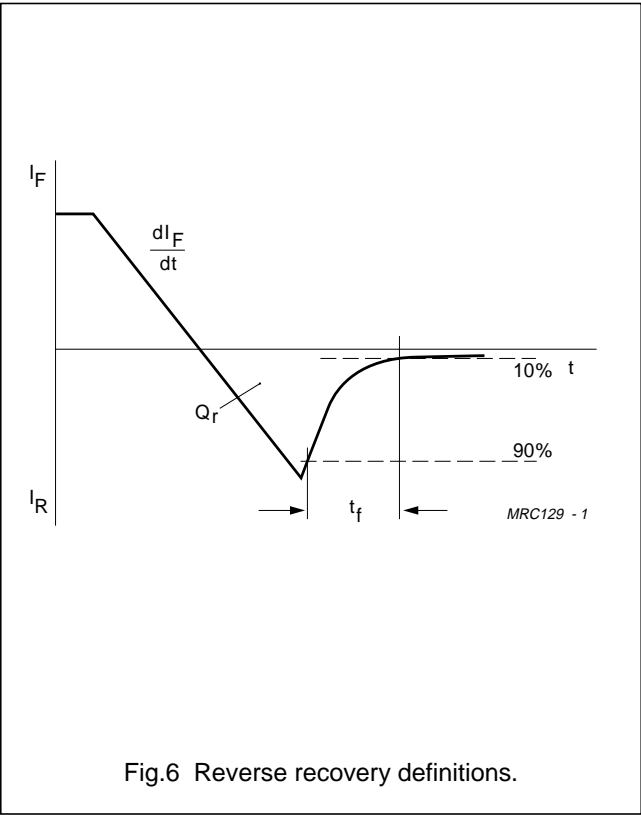
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GRAPHICAL DATA



Schottky barrier diode

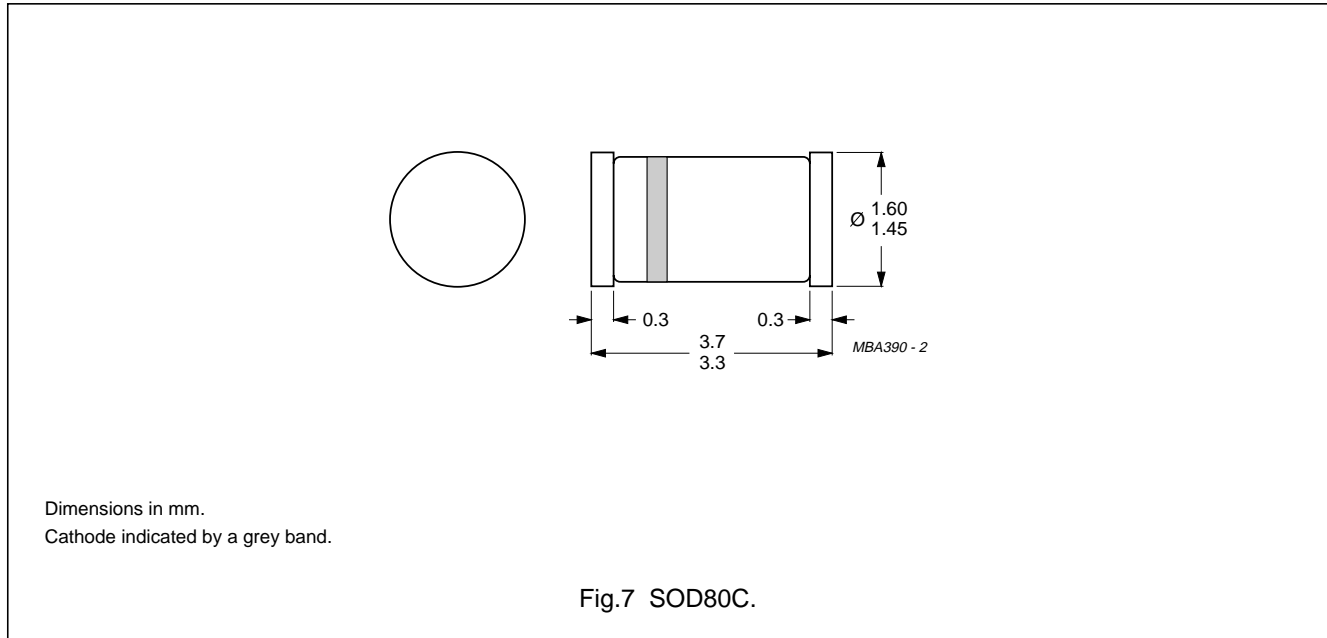
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PACKAGE OUTLINE



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

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