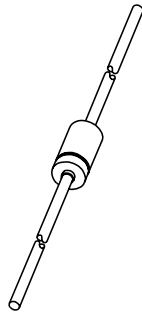


DATA SHEET



BAT86 Schottky barrier diode

Product data sheet
Supersedes data of 1996 Mar 20

2000 May 25

Schottky barrier diode

BAT86

FEATURES

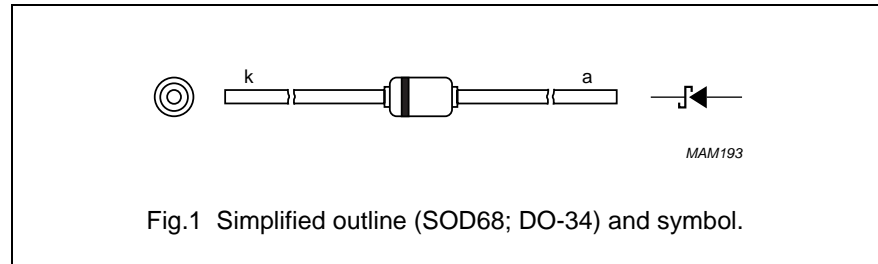
- Low forward voltage
- Guard ring protected
- Hermetically-sealed leaded glass package.

APPLICATIONS

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

DESCRIPTION

Planar Schottky barrier diode with an integrated protection ring against static discharges, encapsulated in a hermetically-sealed subminiature SOD68 (DO-34) package. The diode is suitable for mounting on a 2 E (5.08 mm) pitch.



LIMITING VALUES

In accordance with the Absolute Maximum Rating System (IEC 60134).

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	PCB mounting, lead length = 4 mm; $V_{RWM} = 25\text{ V}$; $a = 1.57$; $\delta = 0.5$; $T_{amb} = 50\text{ }^\circ\text{C}$; see Fig.2	–	200	mA
I_{FRM}	repetitive peak forward current	$t_p \leq 1\text{ s}$; $\delta \leq 0.5$	–	500	mA
I_{FSM}	non-repetitive peak forward current	$t_p \leq 10\text{ ms}$	–	5	A
T_{stg}	storage temperature		–65	+150	$^\circ\text{C}$
T_j	junction temperature		–	125	$^\circ\text{C}$
T_{amb}	operating ambient temperature		–65	+125	$^\circ\text{C}$

Schottky barrier diode

BAT86

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

SYMBOL	PARAMETER	CONDITIONS	MAX.	UNIT
V_F	forward voltage	see Fig.3 $I_F = 0.1\text{ mA}$ $I_F = 1\text{ mA}$ $I_F = 10\text{ mA}$ $I_F = 30\text{ mA}$ $I_F = 100\text{ mA}$	300 380 450 600 900	mV mV mV mV mV
I_R	reverse current	$V_R = 40\text{V}$; see Fig.4; note 1	5	μA
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

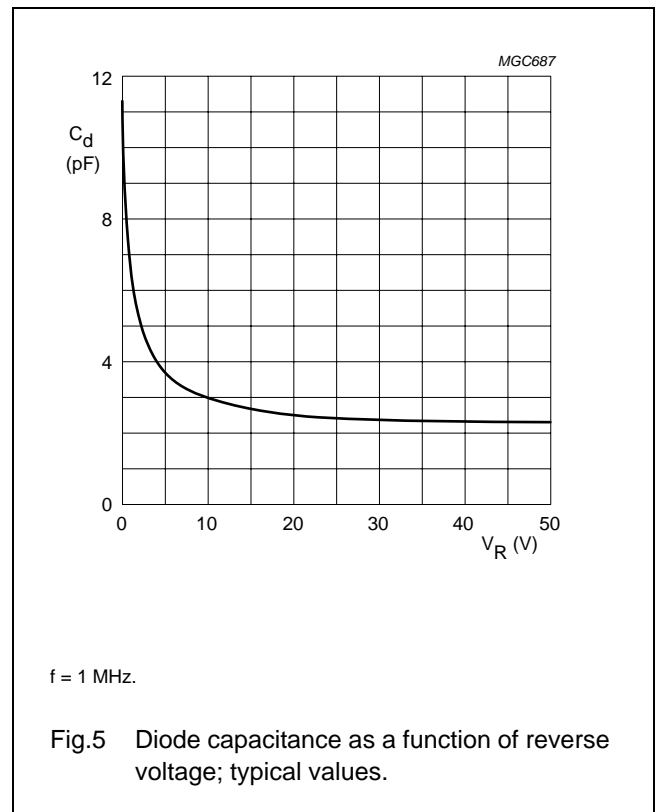
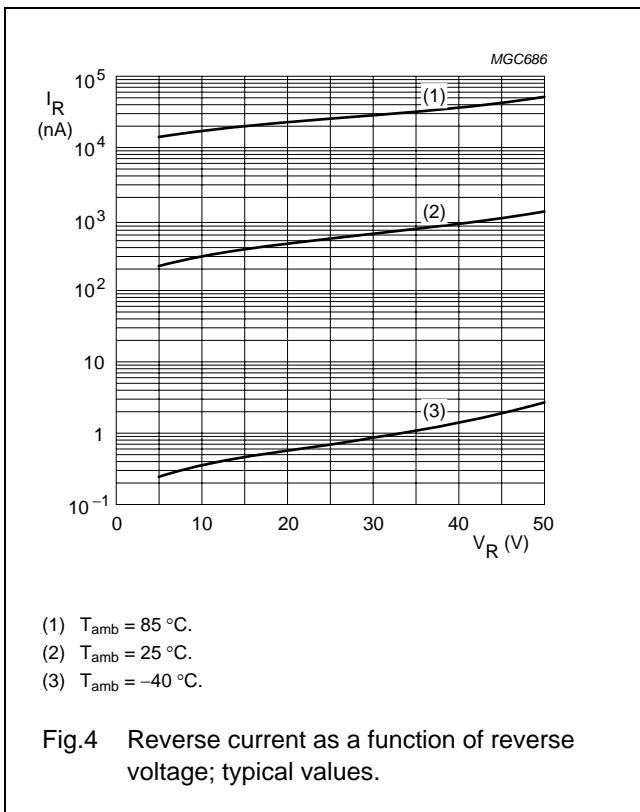
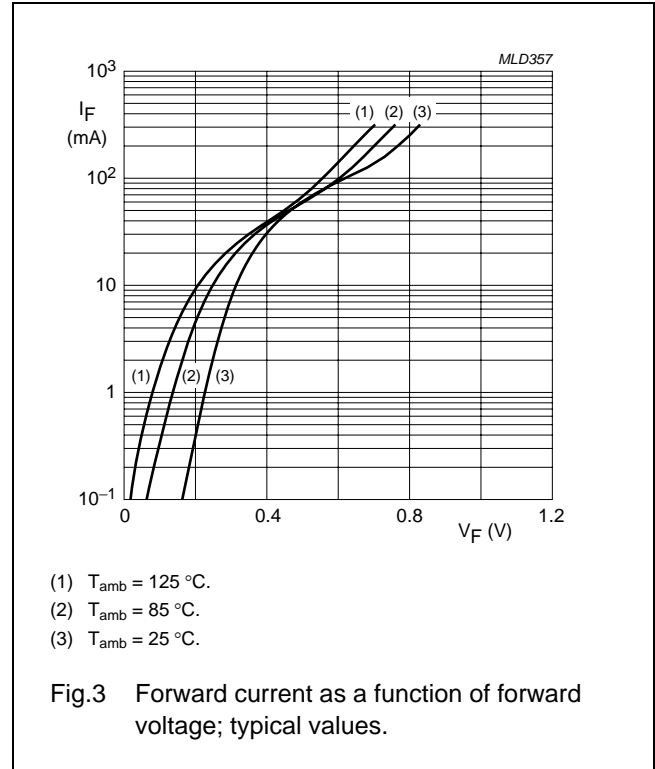
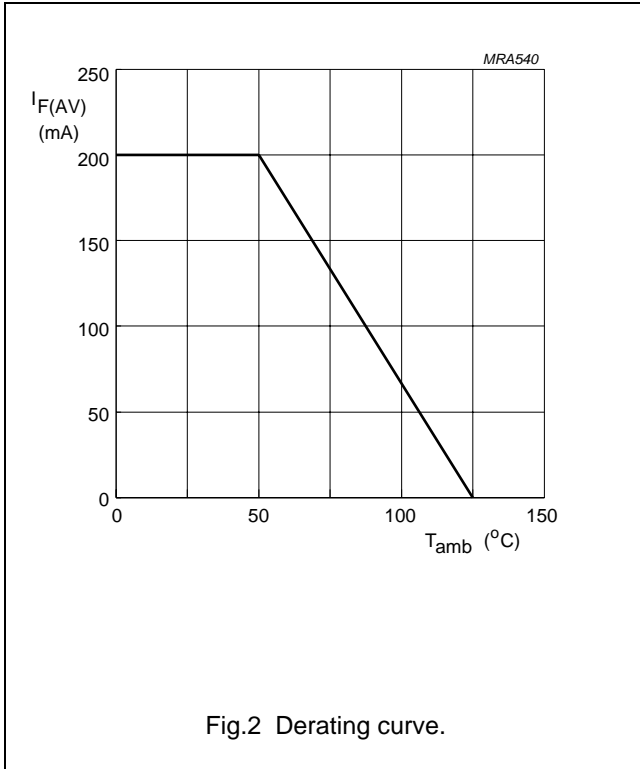
Note

1. Refer to SOD68 standard mounting conditions.

Schottky barrier diode

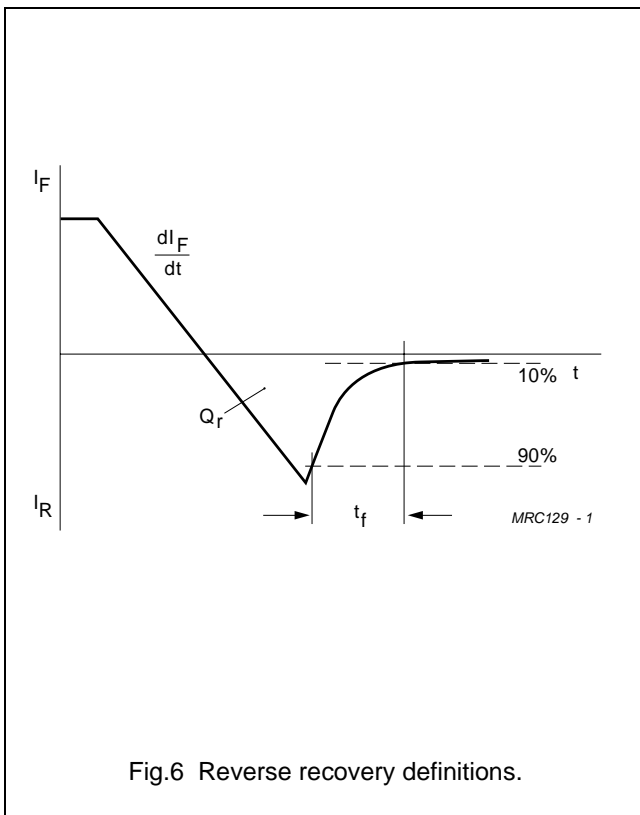
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GRAPHICAL DATA



Schottky barrier diode

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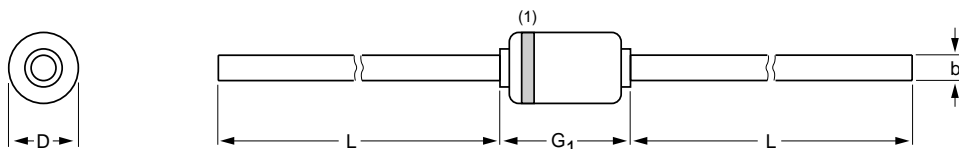
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PACKAGE OUTLINE

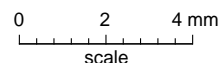
Hermetically sealed glass package; axial leaded; 2 leads

SOD68



DIMENSIONS (mm are the original dimensions)

UNIT	b max.	D max.	G ₁ max.	L min.
mm	0.55	1.6	3.04	25.4



Note

1. The marking band indicates the cathode.

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ			
SOD68		DO-34				97-06-09

Schottky barrier diode

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DATA SHEET STATUS

DOCUMENT STATUS ⁽¹⁾	PRODUCT STATUS ⁽²⁾	DEFINITION
Objective data sheet	Development	This document contains data from the objective specification for product development.
Preliminary data sheet	Qualification	This document contains data from the preliminary specification.
Product data sheet	Production	This document contains the product specification.

Notes

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2. The product status of device(s) described in this document may have changed since this document was published and may differ in case of multiple devices. The latest product status information is available on the Internet at URL <http://www.nxp.com>.

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For additional information please visit: **<http://www.nxp.com>**

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