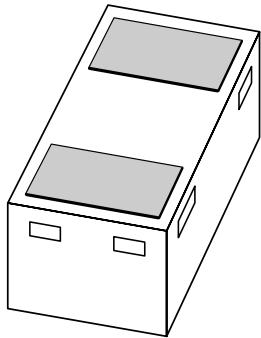


DATA SHEET



BAS40L Schottky barrier diode

Product specification

2003 May 20

Schottky barrier diode

BAS40L

FEATURES

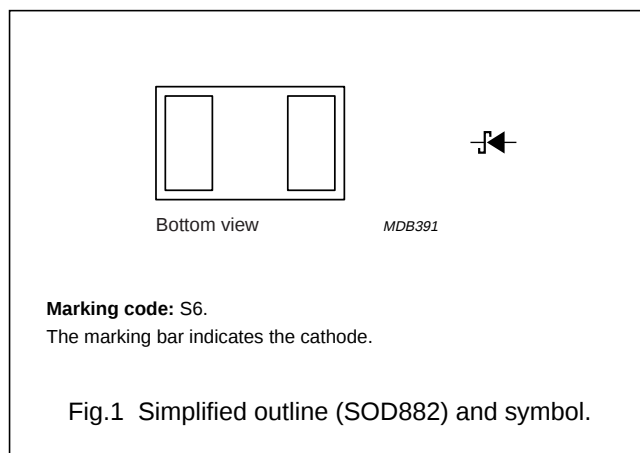
- Low diode capacitance
- Low forward voltage
- Guard ring protected
- High breakdown voltage
- Leadless ultra small plastic package (1 mm × 0.6 mm × 0.5 mm)
- Boardspace 1.17 mm² (approx. 10% of SOT23)
- Power dissipation comparable to SOT23.

APPLICATIONS

- Ultra high-speed switching
- Voltage clamping
- Protection circuits
- Mobile communication, digital (still) cameras, PDAs and PCMCIA cards.

DESCRIPTION

Planar Schottky barrier diode with an integrated guard ring for stress protection. Encapsulated in a SOD882 leadless ultra small plastic package.



LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
Per diode					
V_R	continuous reverse voltage		–	40	V
I_F	continuous forward current		–	120	mA
I_{FRM}	repetitive peak forward current	$t_p \leq 1s$; $\delta \leq 0.5$	–	120	mA
I_{FSM}	non-repetitive peak forward current	$t_p < 10\text{ ms}$	–	200	mA
T_{stg}	storage temperature		–65	+150	°C
T_j	junction temperature		–	150	°C

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ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MAX.	UNIT
V_F	continuous forward voltage	see Fig.2		
		$I_F = 1\text{ mA}$	380	mV
		$I_F = 10\text{ mA}$	500	mV
		$I_F = 40\text{ mA}$	1	V
I_R	continuous reverse current	$V_R = 30\text{ V}$; see Fig.3; note 1	1	μA
		$V_R = 40\text{ V}$; see Fig.3; note 1	10	μA
C_d	diode capacitance	$V_R = 0\text{ V}$; $f = 1\text{ MHz}$; see Fig.5	5	pF

Note

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

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{\text{th j-a}}$	thermal resistance from junction to ambient	note 1	500	K/W

Note

1. Refer to SOD882 standard mounting conditions (footprint), FR4 with $60\text{ }\mu\text{m}$ copper strip line.

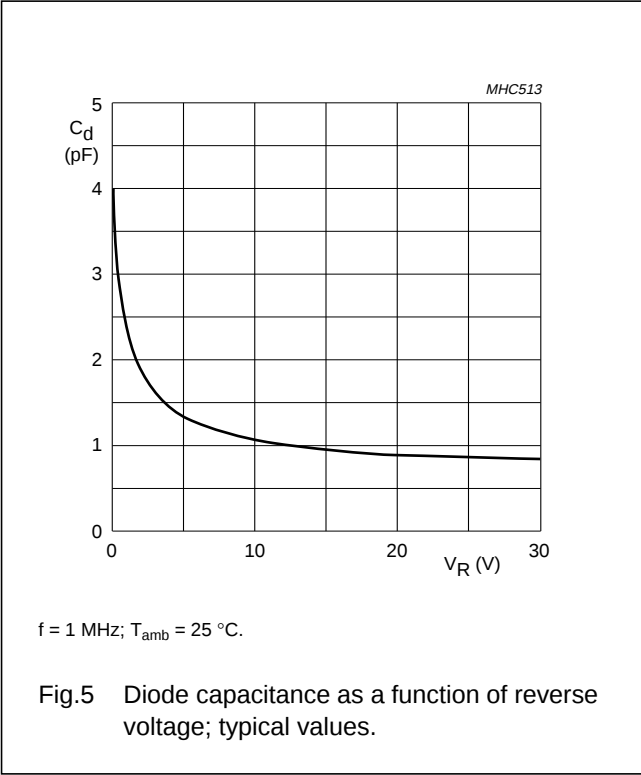
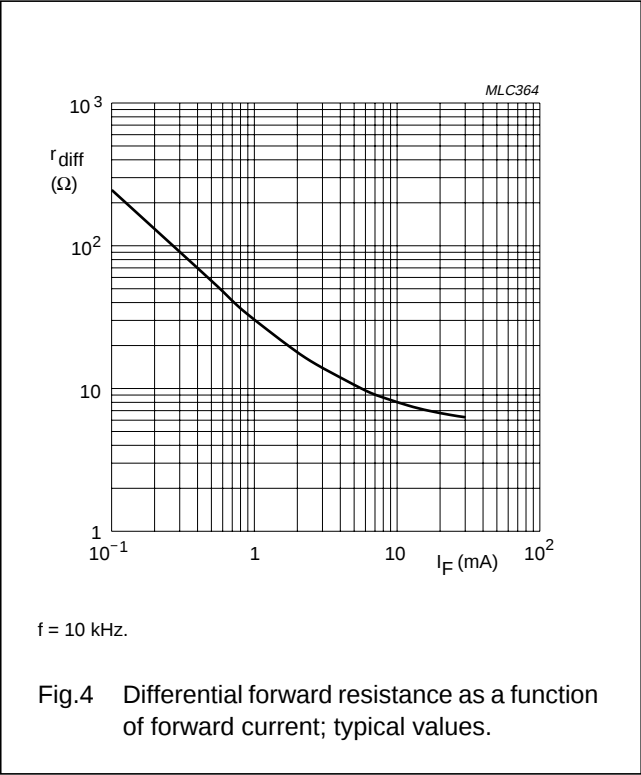
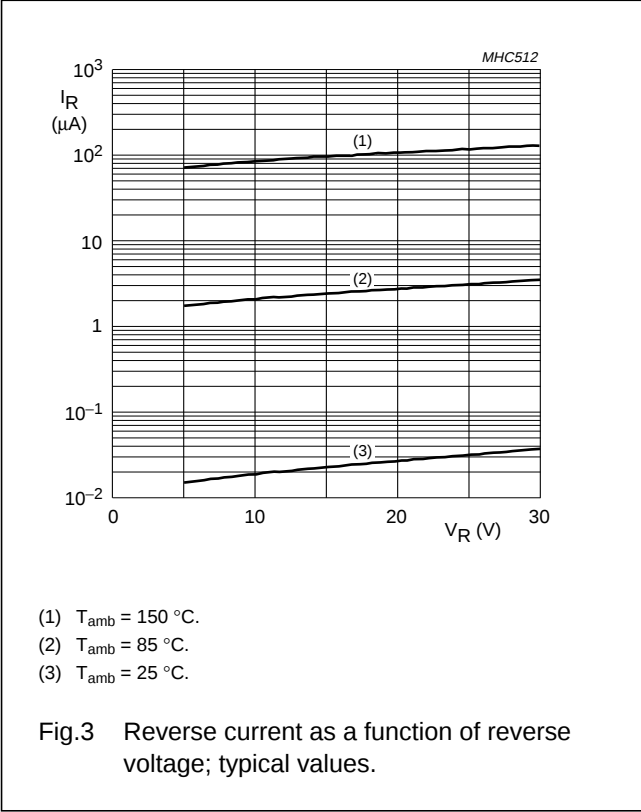
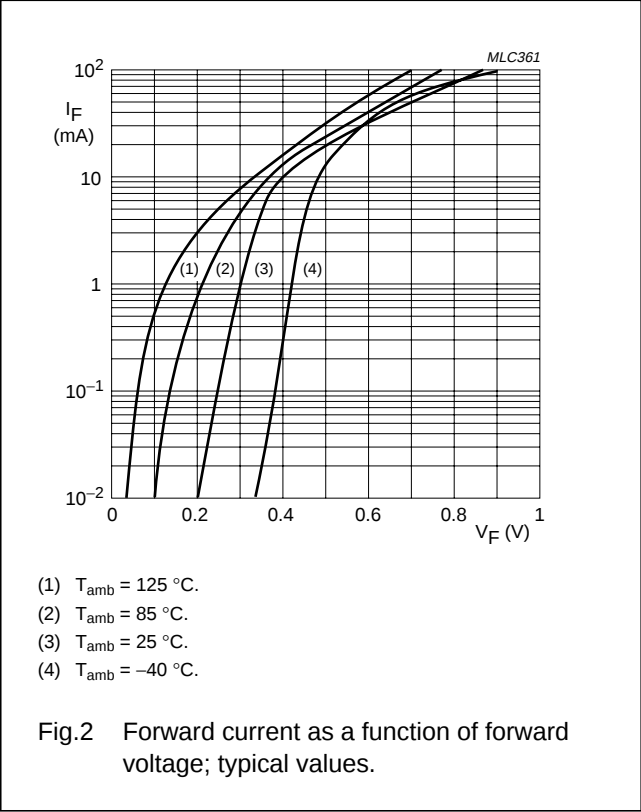
Soldering

Reflow soldering is the only recommended soldering method.

Schottky barrier diode

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GRAPHICAL DATA



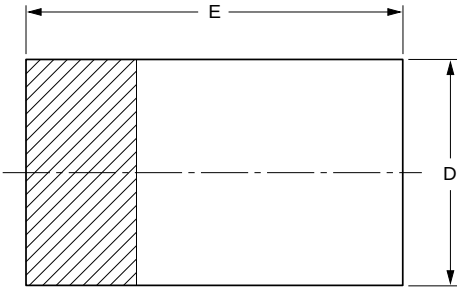
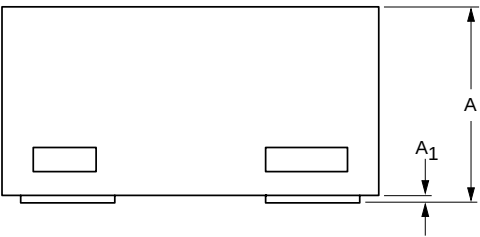
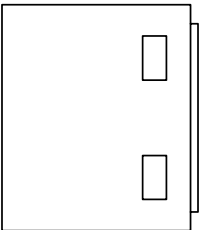
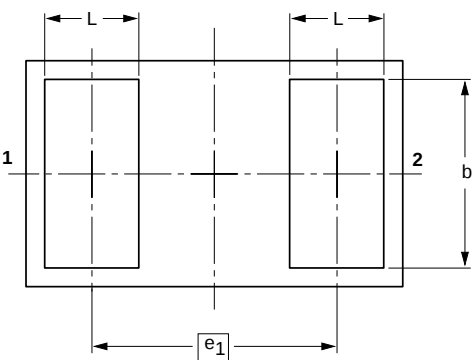
Schottky barrier diode

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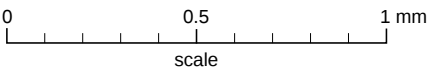
PACKAGE OUTLINE

Leadless ultra small plastic package; 2 terminals; body 1.0 x 0.6 x 0.5 mm

SOD882



(2)



DIMENSIONS (mm are the original dimensions)

UNIT	A ⁽¹⁾	A ₁ max.	b	D	E	e ₁	L
mm	0.50 0.46	0.03	0.55 0.47	0.62 0.55	1.02 0.95	0.65	0.30 0.22

Notes

- 1. Including plating thickness
- 2. The marking bar indicates the cathode

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	JEITA			
SOD882						03-04-16 03-04-17

Schottky barrier diode

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DATA SHEET STATUS

LEVEL	DATA SHEET STATUS ⁽¹⁾	PRODUCT STATUS ⁽²⁾⁽³⁾	DEFINITION
I	Objective data	Development	This data sheet contains data from the objective specification for product development. Philips Semiconductors reserves the right to change the specification in any manner without notice.
II	Preliminary data	Qualification	This data sheet contains data from the preliminary specification. Supplementary data will be published at a later date. Philips Semiconductors reserves the right to change the specification without notice, in order to improve the design and supply the best possible product.
III	Product data	Production	This data sheet contains data from the product specification. Philips Semiconductors reserves the right to make changes at any time in order to improve the design, manufacturing and supply. Relevant changes will be communicated via a Customer Product/Process Change Notification (CPCN).

Notes

1. Please consult the most recently issued data sheet before initiating or completing a design.
2. The product status of the device(s) described in this data sheet may have changed since this data sheet was published. The latest information is available on the Internet at URL <http://www.semiconductors.philips.com>.
3. For data sheets describing multiple type numbers, the highest-level product status determines the data sheet status.

DEFINITIONS

Short-form specification — The data in a short-form specification is extracted from a full data sheet with the same type number and title. For detailed information see the relevant data sheet or data handbook.

Limiting values definition — Limiting values given are in accordance with the Absolute Maximum Rating System (IEC 60134). 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.

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NOTES

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