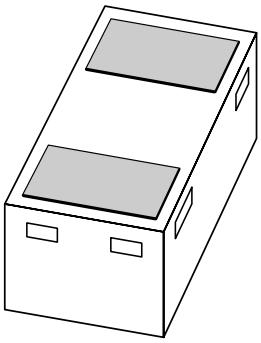
DATA SHEET



1PS10SB63
Schottky barrier diode

Product specification

2003 Aug 20

Philips
Semiconductors

PHILIPS

Schottky barrier diode 1PS10SB63

FEATURES

- Very low diode capacitance
- Low forward voltage
- Leadless ultra small plastic package (1.0 mm × 0.6 mm × 0.5 mm)
- Boardspace 1.17 mm^2 (approx. 10% of SOT23)
- Power dissipation comparable to SOT23.

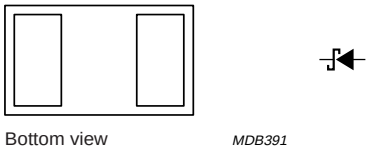
APPLICATIONS

- Ultra high-speed switching
- High frequency detection
- Zero bias detection
- Mobile communication, digital (still) cameras, PDA's and PCMCIA cards.

DESCRIPTION

An epitaxial Schottky barrier diode encapsulated in a SOD882 leadless ultra small plastic package.

ESD sensitive device, observe handling precautions.



Marking code: S4.
The marking bar indicates the cathode.

Fig.1 Simplified outline (SOD882), pin configuration and symbol.

LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V_R	continuous reverse voltage		–	5	V
I_F	continuous forward current		–	20	mA
I_{FRM}	repetitive peak forward current	$t_p \leq 1$ ms; $\delta = 0.25$	–	400	mA
I_{FSM}	non-repetitive peak forward current	t_p = 8.3 ms half sinewave; JEDEC method	–	550	mA
T_{stg}	storage temperature		−65	+150	°C
T_j	junction temperature		–	150	°C

ELECTRICAL CHARACTERISTICS

T_{amb} = 25 °C unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	TYP.	MAX.	UNIT
V_F	forward voltage	see Fig.2			
		I_F = 0.1 mA	160	200	mV
		I_F = 1 mA	240	300	mV
I_R	continuous reverse current	see Fig.3			
		V_R = 1 V	0.4	1	μA
		V_R = 5 V; note 1	–	50	μA
C_d	diode capacitance	V_R = 0 V; f = 1 MHz; see Fig.4	0.35	0.5	pF
L_S	series inductance		0.6	–	nH

Note

1. Pulse test: pulse width = 300 μs; δ = 0.02.

THERMAL CHARACTERISTICS

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

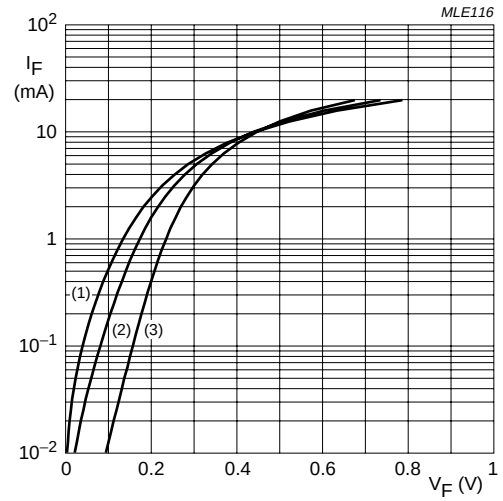
Note

1. Refer to SOD882 standard mounting conditions (footprint), FR4 with 60 μm copper strip line.

Soldering

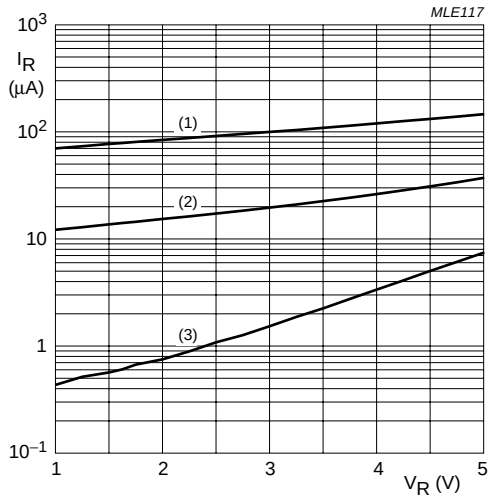
Reflow soldering is the only recommended soldering method.

GRAPHICAL DATA



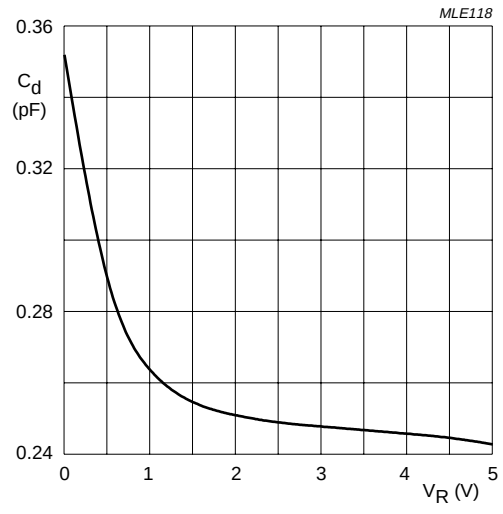
(1) T_{amb} = 125 °C.
(2) T_{amb} = 85 °C.
(3) T_{amb} = 25 °C.

Fig.2 Forward current as a function of forward voltage; typical values.



(1) T_{amb} = 125 °C.
(2) T_{amb} = 85 °C.
(3) T_{amb} = 25 °C.

Fig.3 Reverse current as a function of reverse voltage; typical values.

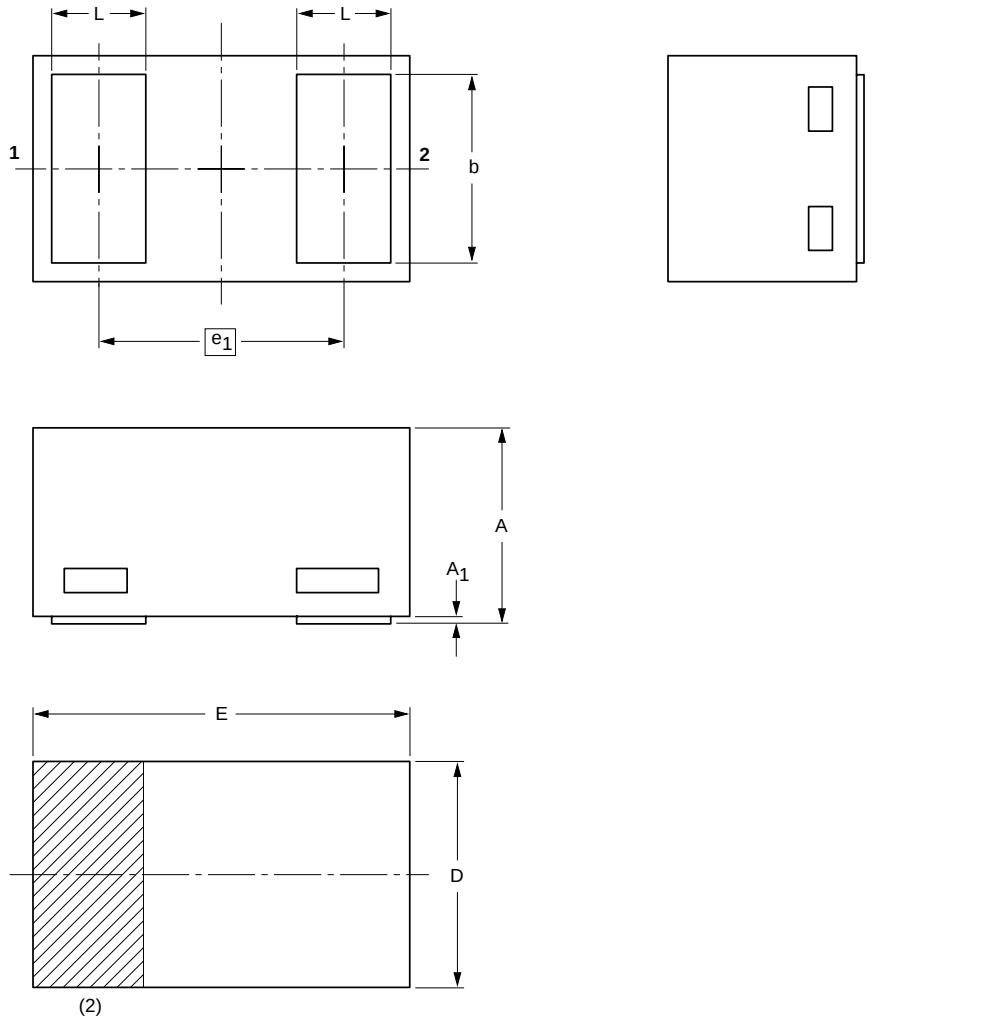


f = 1 MHz; T_{amb} = 25 °C.

Fig.4 Diode capacitance as a function of reverse voltage; typical values.

PACKAGE OUTLINE

Leadless ultra small plastic package; 2 terminals; body 1.0 x 0.6 x 0.5 mm **SOD882**



DIMENSIONS (mm are the original dimensions)

UNIT	A(1)	A1 max.	b	D	E	e1	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

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.

Application information — Applications that are described herein for any of these products are for illustrative purposes only. Philips Semiconductors make no representation or warranty that such applications will be suitable for the specified use without further testing or modification.

DISCLAIMERS

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 Semiconductors customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Philips Semiconductors for any damages resulting from such application.

Right to make changes — Philips Semiconductors reserves the right to make changes in the products - including circuits, standard cells, and/or software - described or contained herein in order to improve design and/or performance. When the product is in full production (status ‘Production’), relevant changes will be communicated via a Customer Product/Process Change Notification (CPCN). Philips Semiconductors assumes no responsibility or liability for the use of any of these products, conveys no licence or title under any patent, copyright, or mask work right to these products, and makes no representations or warranties that these products are free from patent, copyright, or mask work right infringement, unless otherwise specified.

Philips Semiconductors – a worldwide company

Contact information

For additional information please visit **http://www.semiconductors.philips.com**. Fax: **+31 40 27 24825**
For sales offices addresses send e-mail to: **sales.addresses@www.semiconductors.philips.com**.

Printed in The Netherlands 613514/01/pp7 Date of release: 2003 Aug 20 Document order number: 9397 750 11308

Let's make things better.

Philips
Semiconductors

PHILIPS