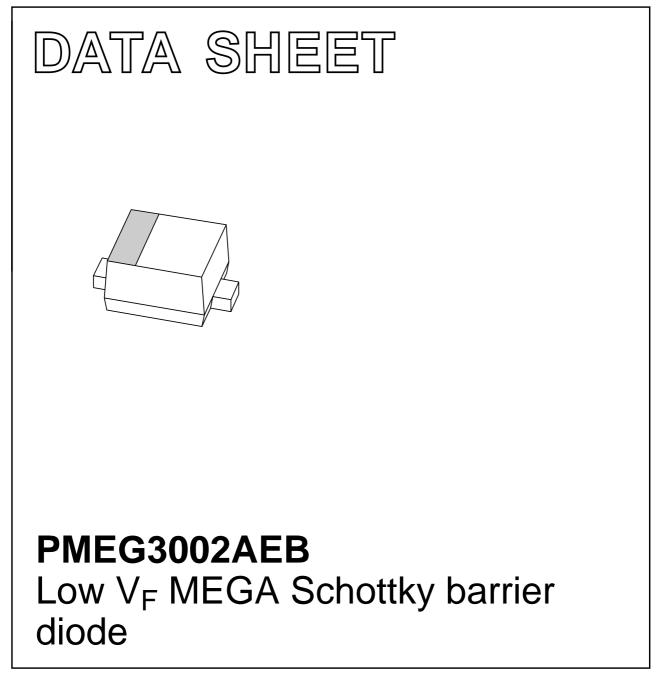
DISCRETE SEMICONDUCTORS



Product specification

2002 May 06



Low V_F MEGA Schottky barrier diode

FEATURES

- Forward current: 0.2 A
- Reverse voltage: 30 V
- Very low forward voltage
- Ultra small SMD package.

APPLICATIONS

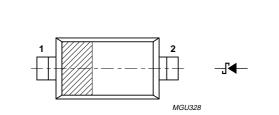
- Ultra high-speed switching
- High efficiency DC/DC conversion
- Voltage clamping
- Inverse-polarity protection
- Low voltage rectification
- Low power consumption applications.

DESCRIPTION

Planar Maximum Efficiency General Application (MEGA) Schottky barrier diode with an integrated guard ring for stress protection, encapsulated in a SOD523 (SC-79) ultra small SMD plastic package.

PINNING

PIN	DESCRIPTION	
1	cathode	
2	anode	



Marking code: B1. The marking bar indicates the cathode.

Fig.1 Simplified outline (SOD523; SC-79) 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		-	30	V
I _F	continuous forward current		-	200	mA
I _{FRM}	repetitive peak forward current	$t_p \le 1 \text{ s}; \delta \le 0.5$	-	300	mA
I _{FSM}	non-repetitive peak forward current	t _p = 8.3 ms half sinewave; JEDEC method	_	1	A
T _{stg}	storage temperature		-65	+150	°C
Tj	junction temperature		-	125	°C
T _{amb}	operating ambient temperature		-65	+125	°C

PMEG3002AEB

Low V_F MEGA Schottky barrier diode

PMEG3002AEB

ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	TYP.	MAX.	UNIT
V _F	continuous forward voltage	see Fig.2			
		I _F = 0.1 mA	130	190	mV
		I _F = 1 mA	190	250	mV
		I _F = 10 mA	255	300	mV
		I _F = 100 mA	355	400	mV
		I _F = 200 mA	420	480	mV
I _R	continuous reverse current	V _R = 10 V; see Fig.3; note 1	2.5	10	μA
C _d	diode capacitance	V _R = 1 V; f = 1 MHz; see Fig.4	20	25	pF

Note

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

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
R _{th j-a}	thermal resistance from junction to ambient	note 1	450	K/W

Note

1. Refer to SOD523 (SC-79) standard mounting conditions.

Low V_F MEGA Schottky barrier diode

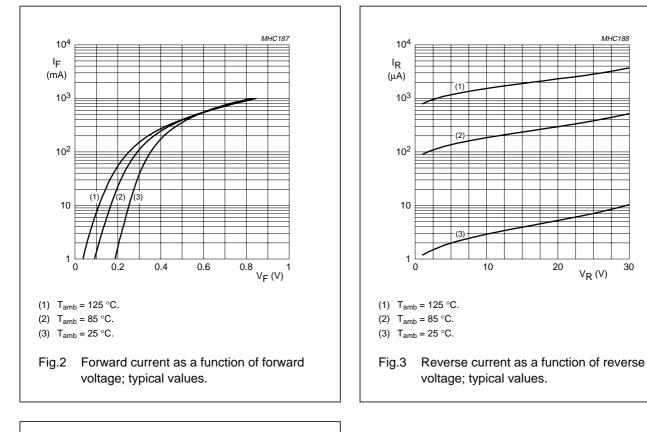
PMEG3002AEB

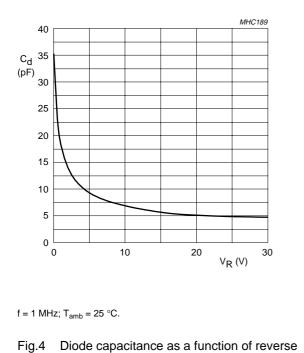
MHC188

30

V_R (V)

GRAPHICAL DATA





voltage; typical values.

Product specification

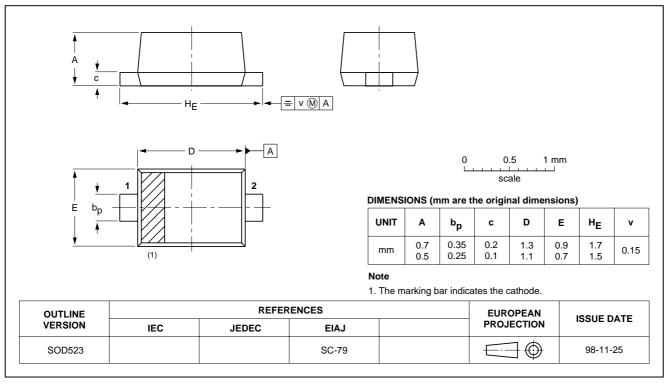
SOD523

Low V_F MEGA Schottky barrier diode

PMEG3002AEB

PACKAGE OUTLINE

Plastic surface mounted package; 2 leads



Low V_F MEGA Schottky barrier diode

PMEG3002AEB

DATA SHEET STATUS

DATA SHEET STATUS ⁽¹⁾	PRODUCT STATUS ⁽²⁾	DEFINITIONS
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.
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.
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. Changes will be communicated according to the Customer Product/Process Change Notification (CPCN) procedure SNW-SQ-650A.

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.

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, without notice, in the products, including circuits, standard cells, and/or software, described or contained herein in order to improve design and/or performance. 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.

Low V_{F} MEGA Schottky barrier diode

PMEG3002AEB

NOTES

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.

© Koninklijke Philips Electronics N.V. 2002

All rights are reserved. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner.

The information presented in this document does not form part of any quotation or contract, is believed to be accurate and reliable and may be changed without notice. No liability will be accepted by the publisher for any consequence of its use. Publication thereof does not convey nor imply any license under patent- or other industrial or intellectual property rights.

Printed in The Netherlands

613514/01/pp**8**

Date of release: 2002 May 06

Document order number: 9397 750 09622

SCA74

Let's make things better.





Philips Semiconductors