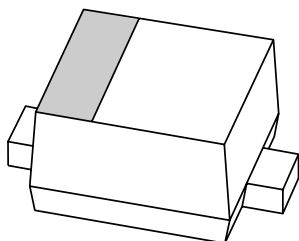


DATA SHEET



PMEG2010AEB

20 V, 1 A ultra low V_F MEGA
Schottky barrier rectifier in
SOD523 package

Product specification

2003 Dec 03

20 V, 1 A ultra low V_F MEGA Schottky barrier rectifier in SOD523 package

PMEG2010AEB

FEATURES

- Forward current: 1.0 A
- Reverse voltage: 20 V
- Ultra low forward voltage
- Ultra small SMD package.

APPLICATIONS

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

DESCRIPTION

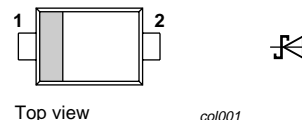
Planar Maximum Efficiency General Application (MEGA) Schottky barrier rectifier with an integrated guard ring for stress protection, encapsulated in a SOD523 (SC-79) ultra small plastic SMD package.

QUICK REFERENCE DATA

SYMBOL	PARAMETER	MAX.	UNIT
I_F	forward current	1	A
V_R	reverse voltage	20	V

PINNING

PIN	DESCRIPTION
1	cathode
2	anode



Marking code: L6.

The marking bar indicates the cathode.

Fig.1 Simplified outline (SOD523; SC-79) and symbol.

ORDERING INFORMATION

TYPE NUMBER	PACKAGE		
	NAME	DESCRIPTION	VERSION
PMEG2010AEB	–	plastic surface mounted package; 2 leads	SOD523

RELATED PRODUCTS

TYPE	DESCRIPTION	FEATURE
PMEG2005EB	0.5 A; 20 V very low V_F MEGA Schottky rectifier	Lower I_R in same package
PMEG2010EA	1 A; 20 V very low V_F MEGA Schottky rectifier	Lower forward current, lower I_R SOD323 (SC76)

20 V, 1 A ultra low V_F MEGA Schottky barrier rectifier in SOD523 package

PMEG2010AEB

LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V_R	continuous reverse voltage		–	20	V
I_F	continuous forward current	$T_s \leq 55\text{ }^\circ\text{C}$	–	1.0	A
I_{FRM}	repetitive peak forward current	$t_p \leq 1\text{ ms}$; $\delta \leq 0.5$	–	3.5	A
I_{FSM}	non-repetitive peak forward current	$t = 8\text{ ms}$ square wave	–	6	A
T_{stg}	storage temperature		–65	+150	$^\circ\text{C}$
T_j	junction temperature	note 1	–	150	$^\circ\text{C}$
T_{amb}	operating ambient temperature	note 1	–65	+150	$^\circ\text{C}$

Note

- For Schottky barrier rectifiers, thermal run-away has to be considered, as in some applications the reverse power losses P_R are a significant part of the total power losses. Nomograms for determination of the reverse power losses P_R and $I_{F(AV)}$ rating will be available on request.

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th(j-a)}$	thermal resistance from junction to ambient	in free air; notes 1 and 2	400	K/W
$R_{th(j-s)}$	thermal resistance from junction to soldering point	notes 2 and 3	75	K/W

Notes

- Refer to SOD523 (SC-79) standard mounting conditions.
- For Schottky barrier rectifiers, thermal run-away has to be considered, as in some applications the reverse power losses P_R are a significant part of the total power losses. Nomograms for determination of the reverse power losses P_R and $I_{F(AV)}$ rating will be available on request.
- Solder point of cathode tab.

20 V, 1 A ultra low V_F MEGA Schottky barrier rectifier in SOD523 package

PMEG2010AEB

CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	TYP.	MAX.	UNIT
V_F	forward voltage	$I_F = 0.1\text{ mA}$	30	60	mV
		$I_F = 1\text{ mA}$	80	110	mV
		$I_F = 10\text{ mA}$	140	190	mV
		$I_F = 100\text{ mA}$	230	290	mV
		$I_F = 1000\text{ mA}$	510	620	mV
I_R	continuous reverse current	$V_R = 10\text{ V}$; note 1	0.17	0.6	mA
		$V_R = 20\text{ V}$; note 1	0.32	1.5	mA
C_d	diode capacitance	$V_R = 1\text{ V}$; $f = 1\text{ MHz}$	19	25	pF

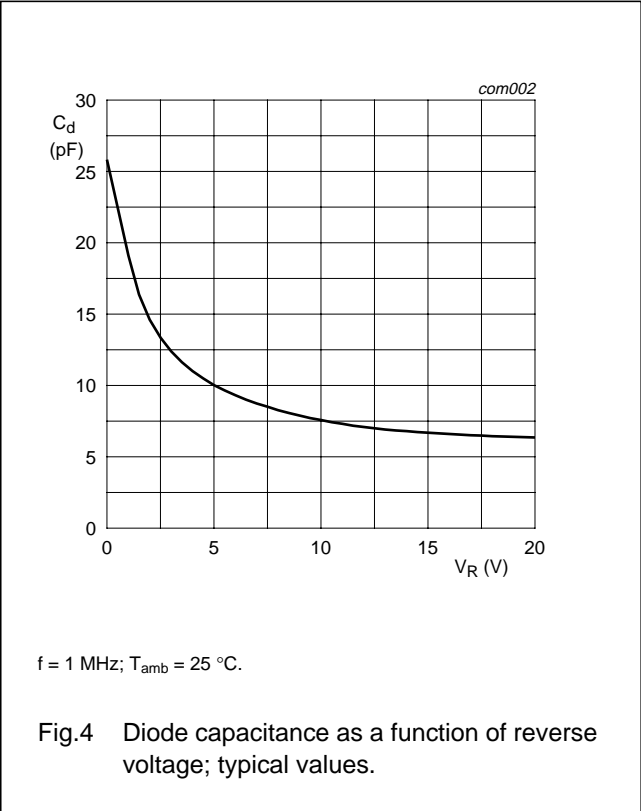
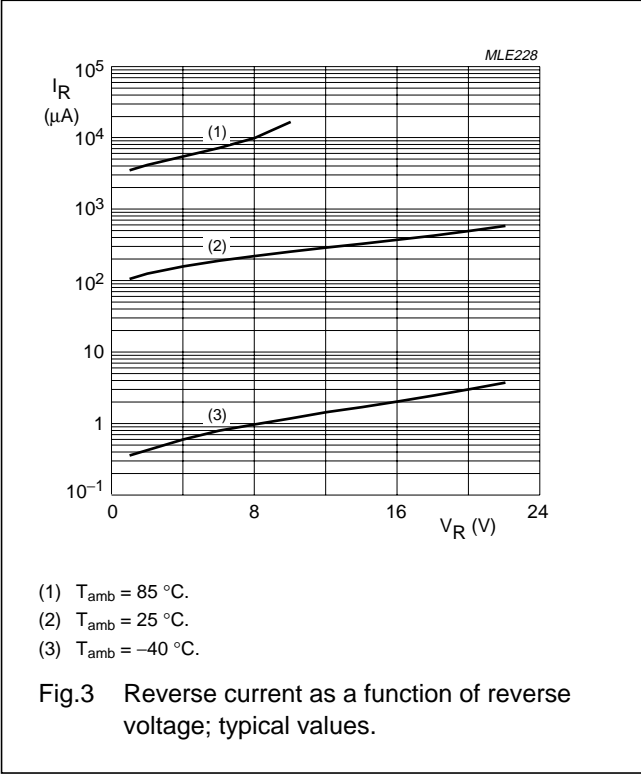
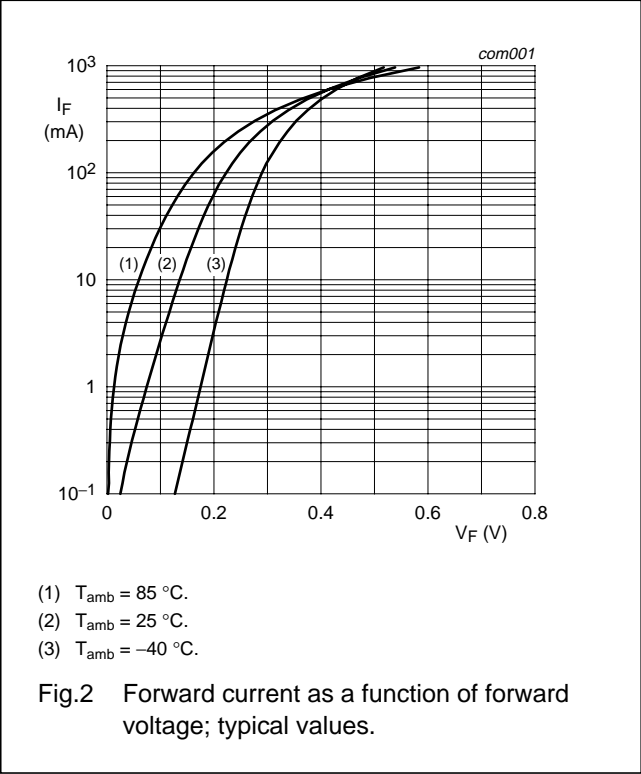
Note

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

20 V, 1 A ultra low V_F MEGA Schottky
barrier rectifier in SOD523 package

PMEG2010AEB

GRAPHICAL DATA



20 V, 1 A ultra low V_F MEGA Schottky
barrier rectifier in SOD523 package

PMEG2010AEB

PACKAGE OUTLINE

Plastic surface mounted package; 2 leads

SOD523V

0 0.5 1 mm
scale

DIMENSIONS (mm are the original dimensions)

UNIT	A	b _p	c	D	E	H _E	v
mm	0.65 0.58	0.34 0.26	0.17 0.11	1.25 1.15	0.85 0.75	1.65 1.55	0.1

Note
1. The marking bar indicates the cathode.

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	JEITA			
SOD523V			SC-79			00-12-07- 02-04-19

20 V, 1 A ultra low V_F MEGA Schottky barrier rectifier in SOD523 package

PMEG2010AEB

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

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3. For data sheets describing multiple type numbers, the highest-level product status determines the data sheet status.

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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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