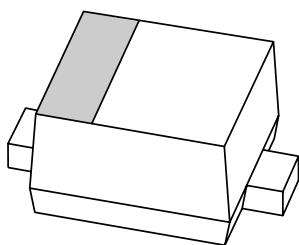


DATA SHEET



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

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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

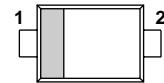
Planar Maximum Efficiency General Application (MEGA) Schottky barrier rectifier with an integrated guard ring for stress protection, encapsulated in a SOD523 (SC-79) ultra small plastic SMD package.

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



Top view



col001

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

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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	$T_s \leq 55^\circ\text{C}$	–	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

1. 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

1. Refer to SOD523 (SC-79) standard mounting conditions.
2. 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.
3. Solder point of cathode tab.

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

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CHARACTERISTICS $T_{amb} = 25^\circ\text{C}$ 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

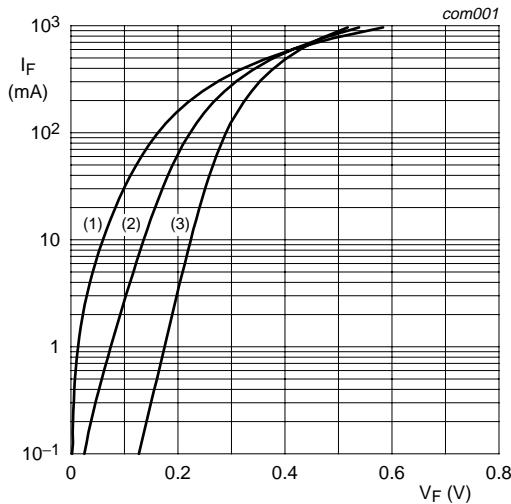
Note

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

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

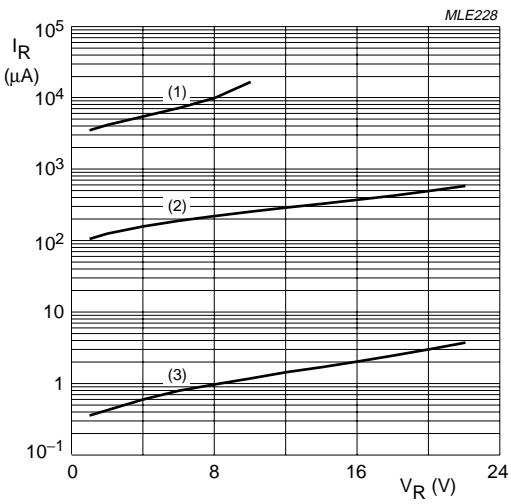
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GRAPHICAL DATA



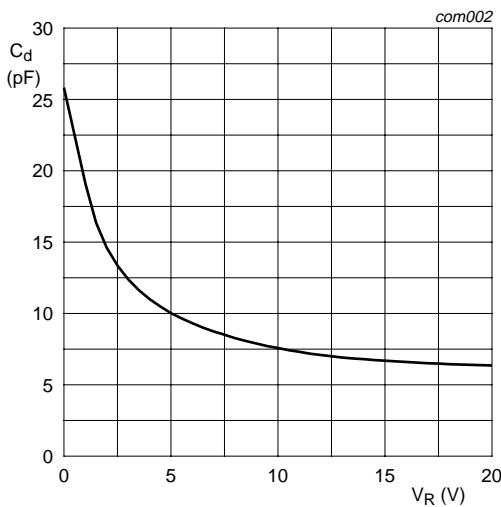
- (1) $T_{amb} = 85$ °C.
- (2) $T_{amb} = 25$ °C.
- (3) $T_{amb} = -40$ °C.

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



- (1) $T_{amb} = 85$ °C.
- (2) $T_{amb} = 25$ °C.
- (3) $T_{amb} = -40$ °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.

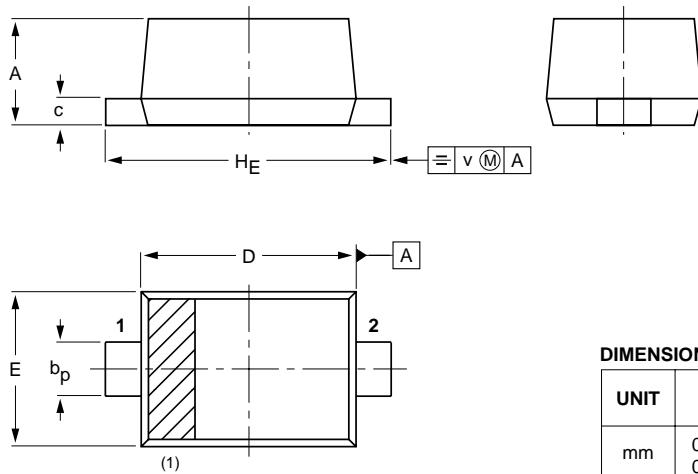
20 V, 1 A ultra low V_F MEGA Schottky
barrier rectifier in SOD523 package

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PACKAGE OUTLINE

Plastic surface mounted package; 2 leads

SOD523V



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

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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.
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Notes

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