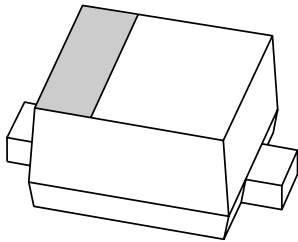


# DATA SHEET



## **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

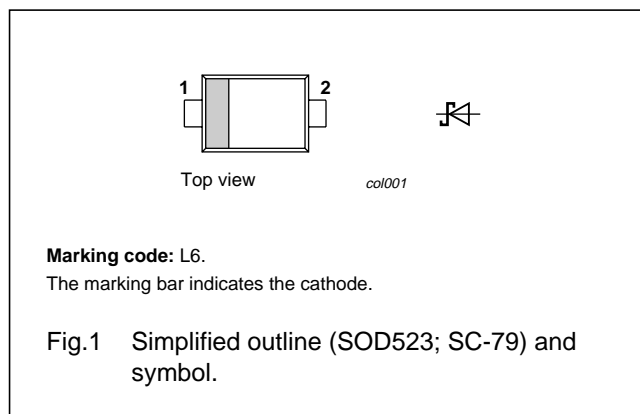
Planar Maximum Efficiency General Application (MEGA) Schottky barrier rectifier with an integrated guard ring for stress protection, encapsulated in a SOD523 (SC-79) ultra small plastic SMD package.

#### 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



#### 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	$T_s \leq 55\text{ °C}$	–	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	°C
$T_j$	junction temperature	note 1	–	150	°C
$T_{amb}$	operating ambient temperature	note 1	–65	+150	°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**

$T_{amb} = 25\text{ °C}$  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

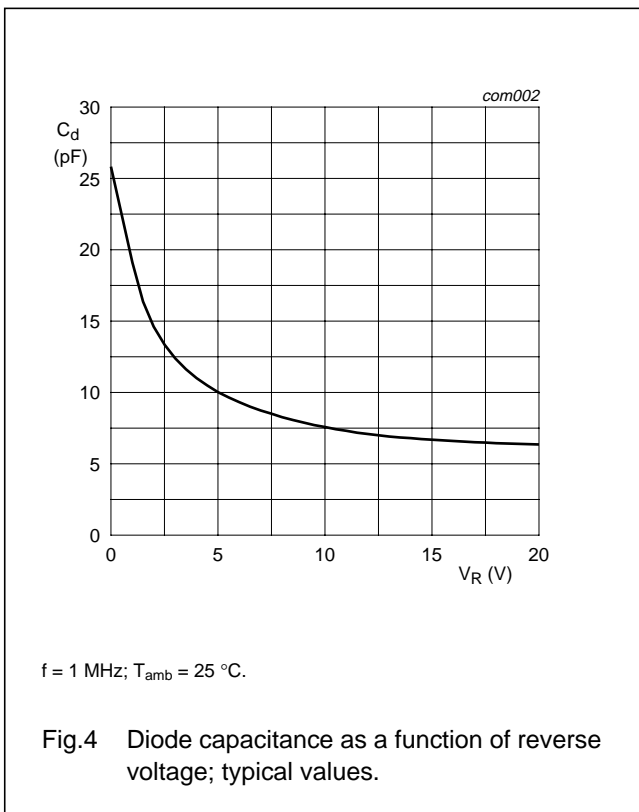
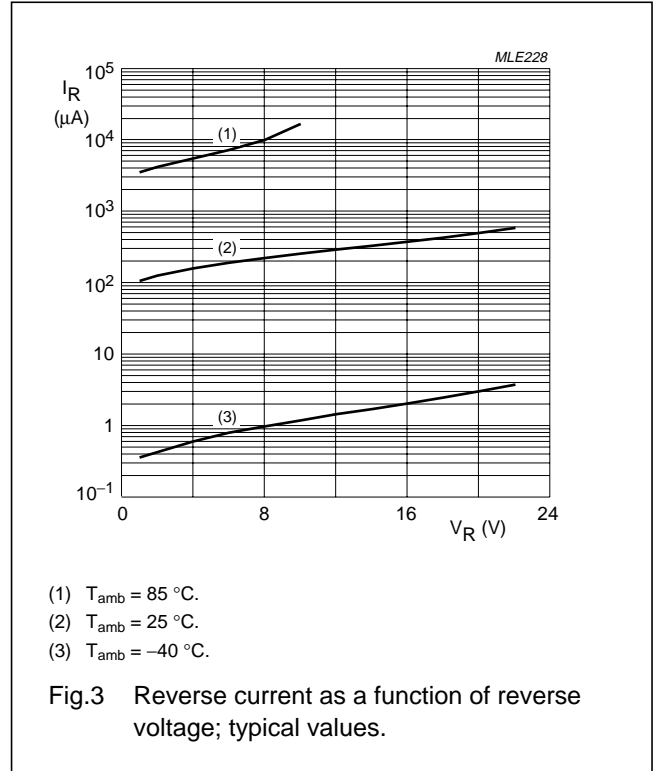
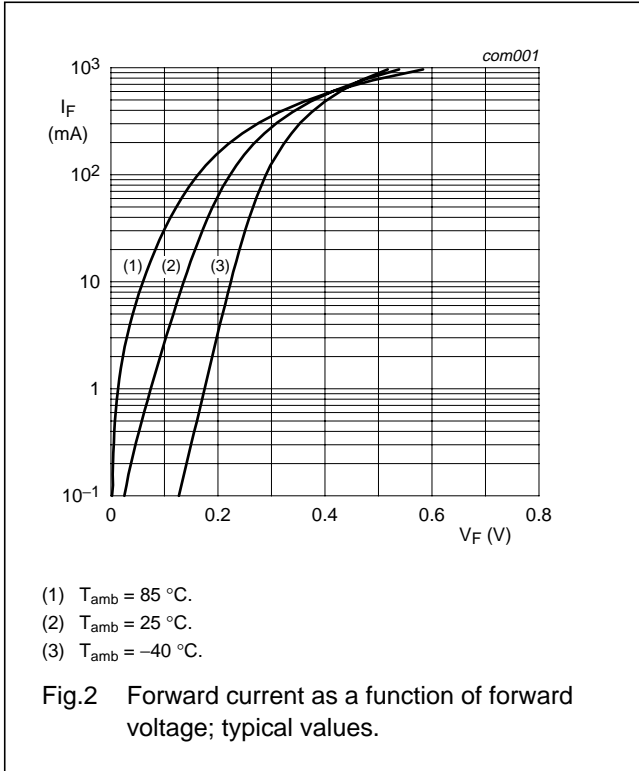
**Note**

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

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GRAPHICAL DATA



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 <sup>(1)</sup>	PRODUCT STATUS <sup>(2)(3)</sup>	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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