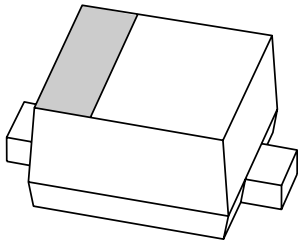


# DATA SHEET



## **PMEG2010AEB**

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

## 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

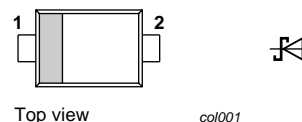
Planar Maximum Efficiency General Application (MEGA) Schottky barrier rectifier with an integrated guard ring for stress protection, encapsulated in a SOD523 (SC-79) ultra small plastic SMD package.

#### 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

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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

- 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

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## 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

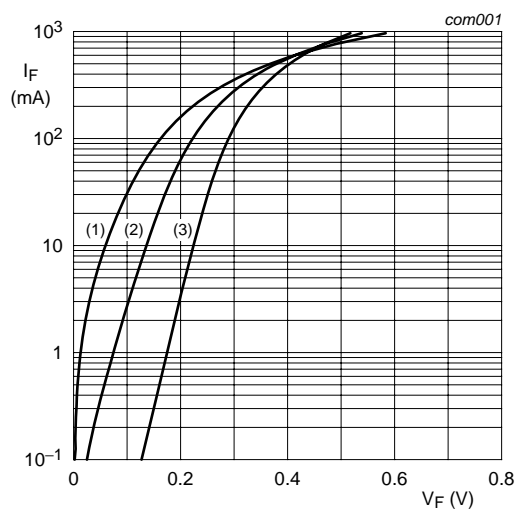
### Note

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

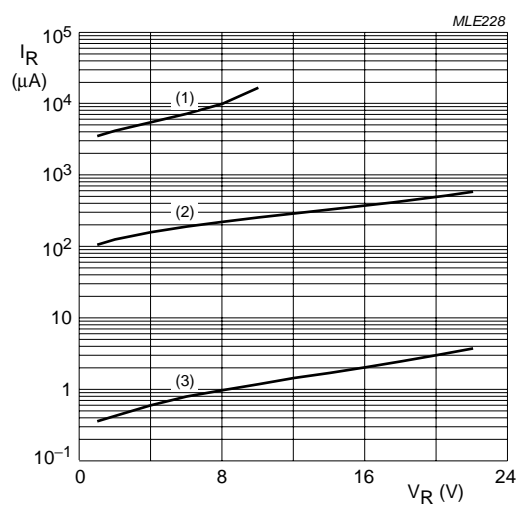
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### GRAPHICAL DATA



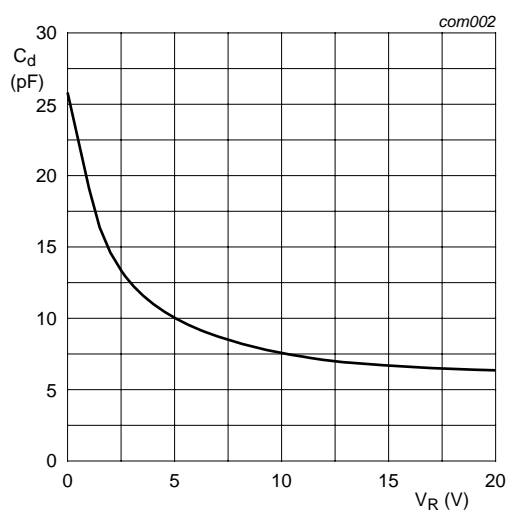
- (1)  $T_{amb} = 85^\circ\text{C}$ .  
 (2)  $T_{amb} = 25^\circ\text{C}$ .  
 (3)  $T_{amb} = -40^\circ\text{C}$ .

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



- (1)  $T_{amb} = 85^\circ\text{C}$ .  
 (2)  $T_{amb} = 25^\circ\text{C}$ .  
 (3)  $T_{amb} = -40^\circ\text{C}$ .

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



$f = 1\text{ MHz}$ ;  $T_{amb} = 25^\circ\text{C}$ .

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

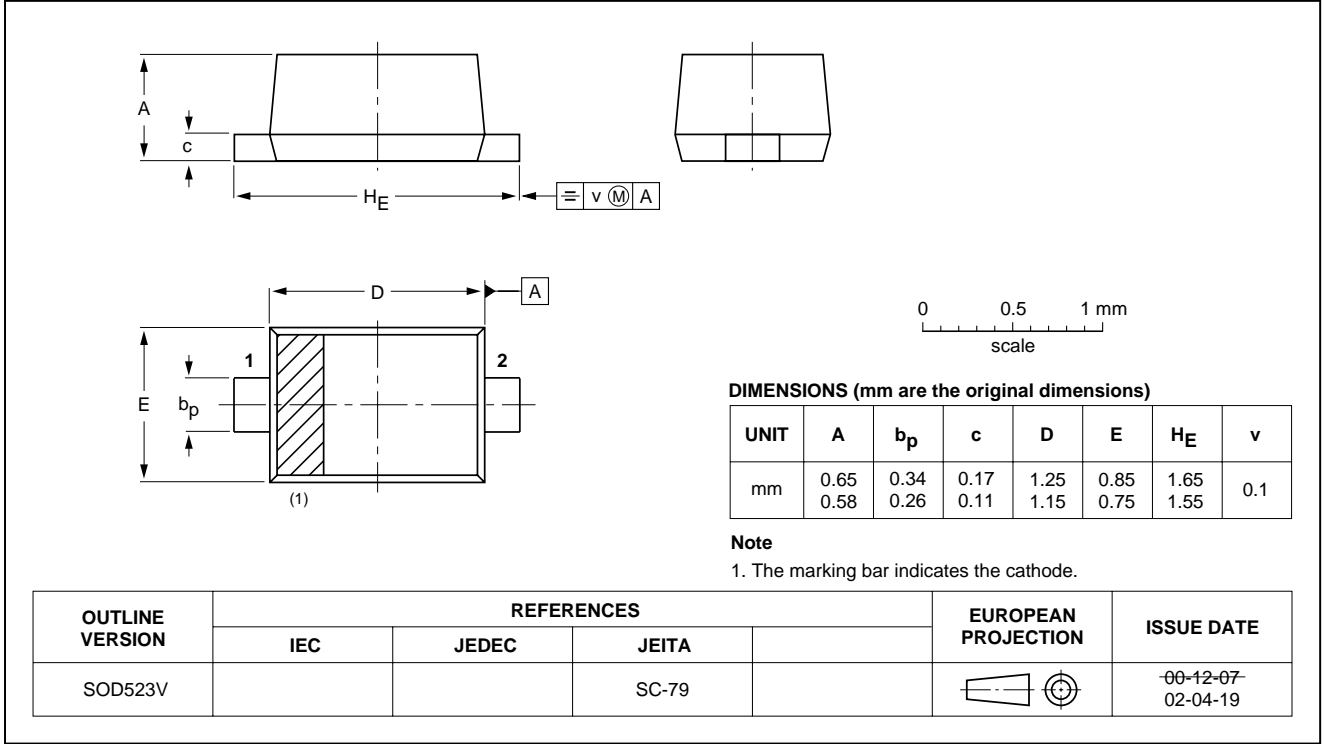
20 V, 1 A ultra low  $V_F$  MEGA Schottky  
barrier rectifier in SOD523 package

PMEG2010AEB

PACKAGE OUTLINE

Plastic surface mounted package; 2 leads

SOD523V



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

PMEG2010AEB

## DATA SHEET STATUS

DOCUMENT STATUS <sup>(1)</sup>	PRODUCT STATUS <sup>(2)</sup>	DEFINITION
Objective data sheet	Development	This document contains data from the objective specification for product development.
Preliminary data sheet	Qualification	This document contains data from the preliminary specification.
Product data sheet	Production	This document contains the product specification.

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