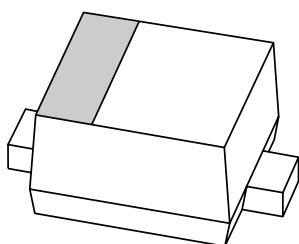


# DATA SHEET



## **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

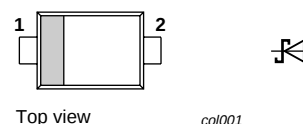
Planar Maximum Efficiency General Application (MEGA) Schottky barrier rectifier with an integrated guard ring for stress protection, encapsulated in a SOD523 (SC-79) ultra small plastic SMD package.

#### 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

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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          | $T_s \leq 55\text{ }^\circ\text{C}$        | –    | 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

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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   |

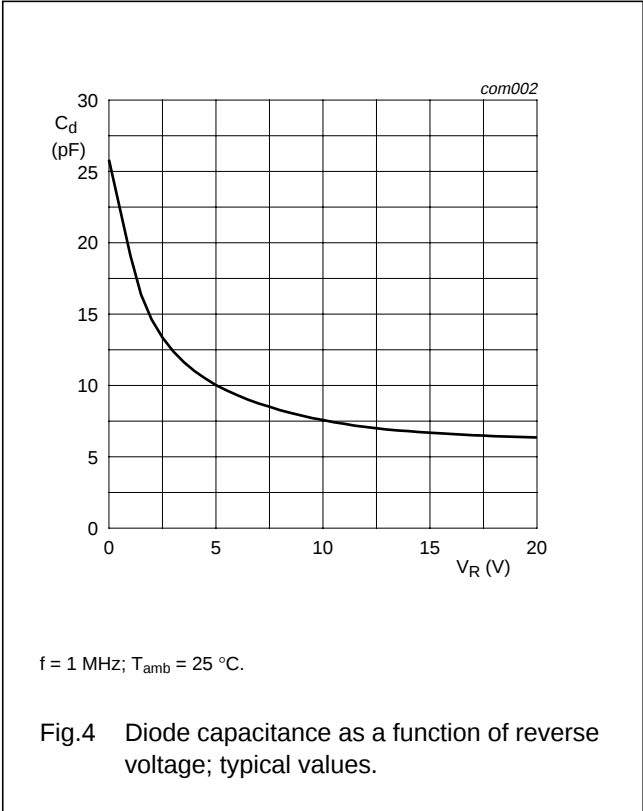
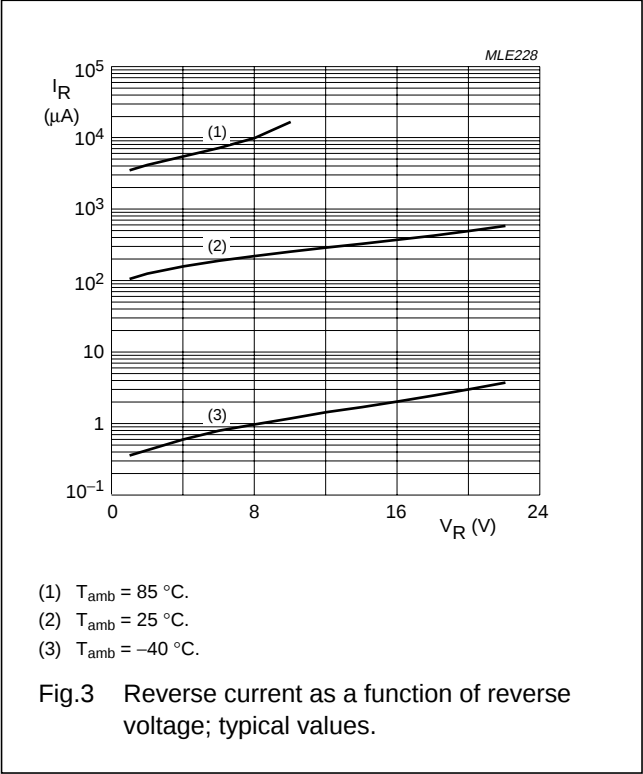
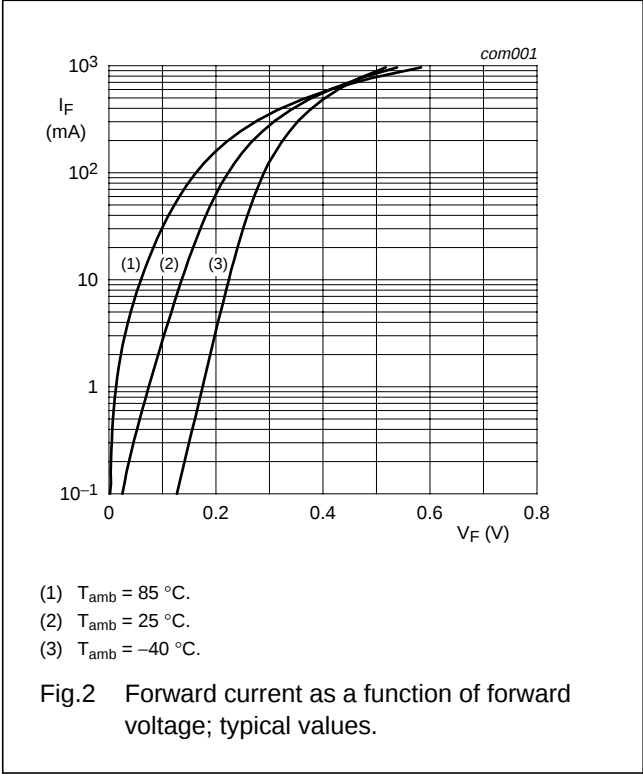
### Note

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



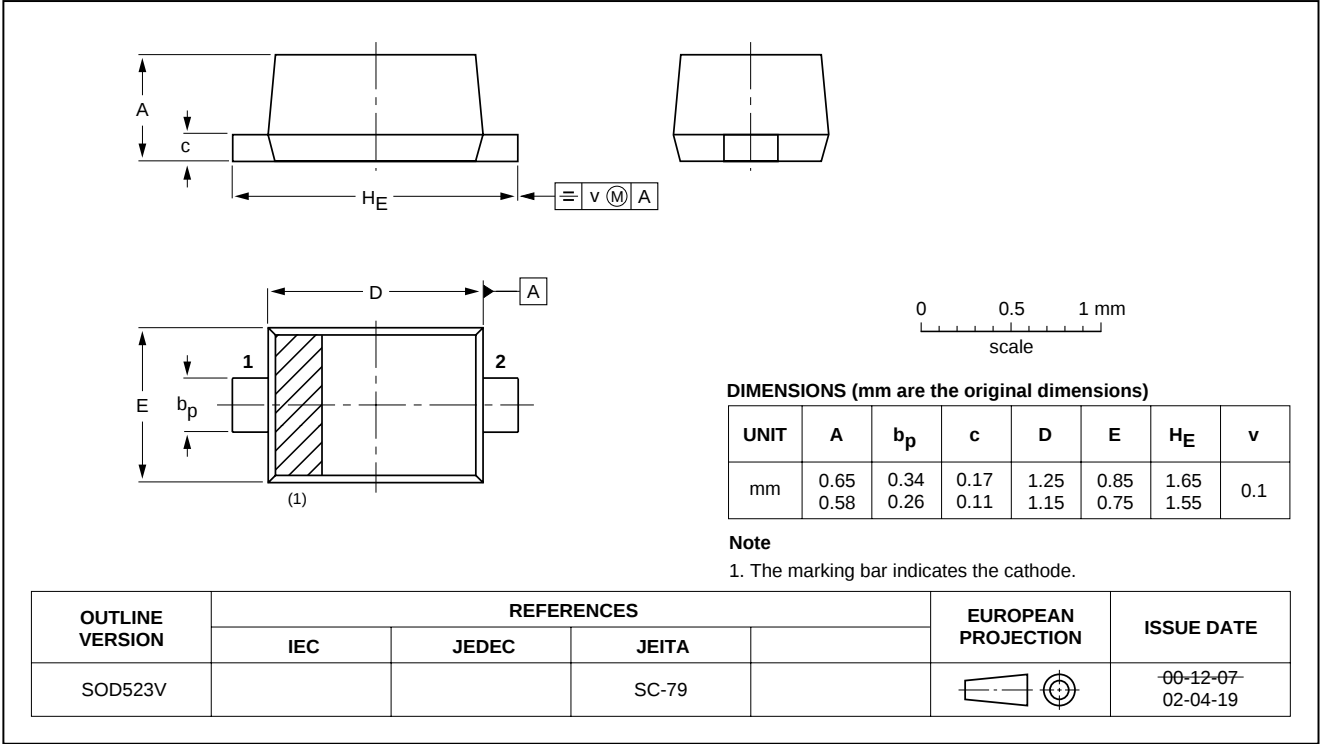
20 V, 1 A ultra low  $V_F$  MEGA Schottky  
barrier rectifier in SOD523 package

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PACKAGE OUTLINE

Plastic surface mounted package; 2 leads

SOD523V



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

PMEG2010AEB

### DATA SHEET STATUS

| LEVEL | DATA SHEET STATUS <sup>(1)</sup> | PRODUCT STATUS <sup>(2)(3)</sup> | DEFINITION                                                                                                                                                                                                                                                                                     |
|-------|----------------------------------|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
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