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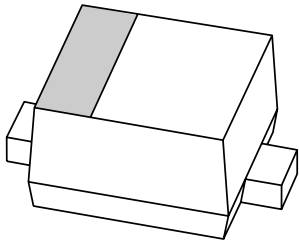
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Kind regards,

Team Nexperia

DATA SHEET



PMEG2010AEB

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

Product data sheet

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 |

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

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 | $T_s \leq 55\text{ °C}$ | – | 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

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 |

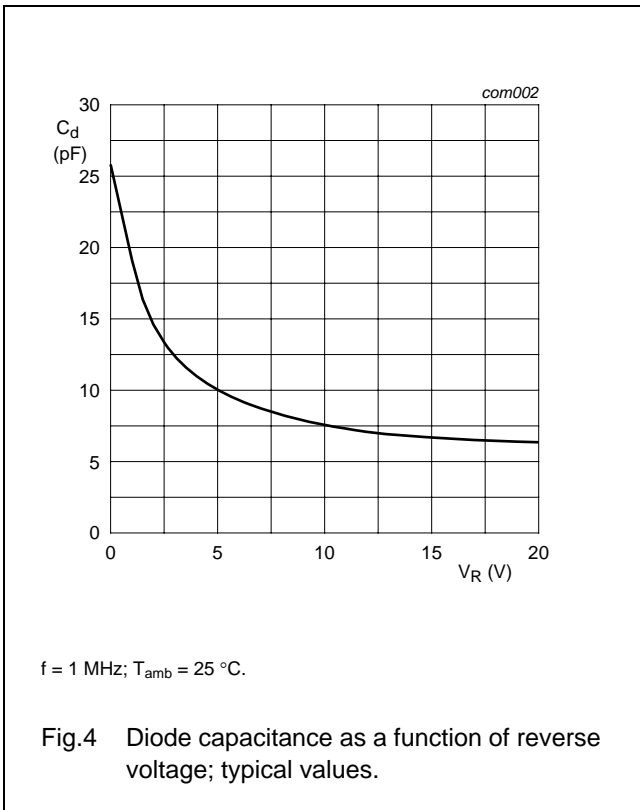
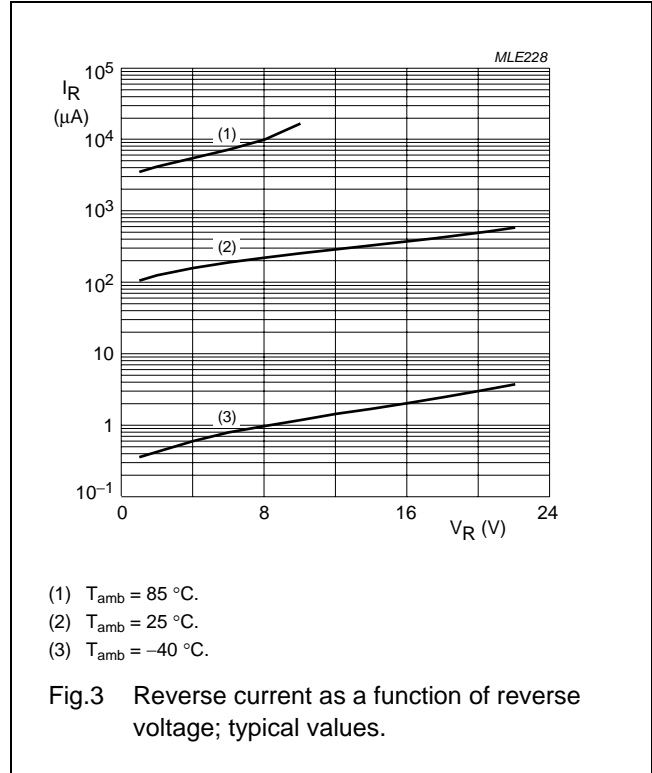
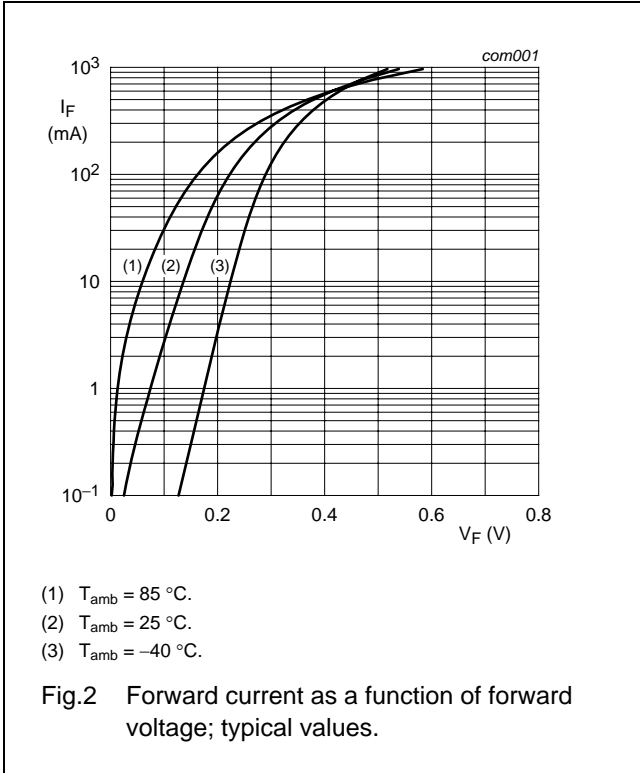
Note

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

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GRAPHICAL DATA



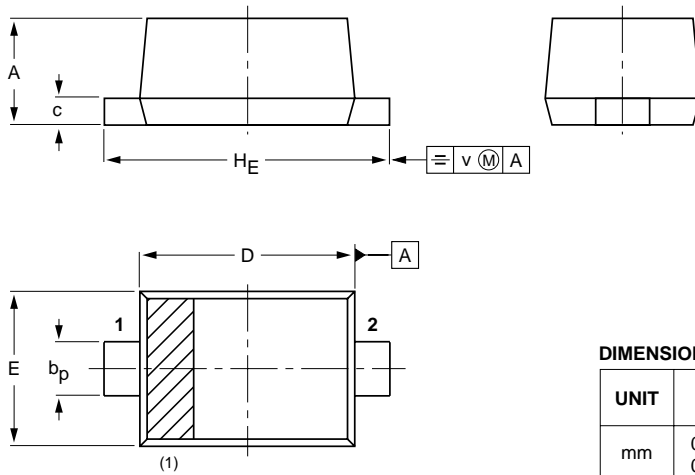
20 V, 1 A ultra low V_F MEGA Schottky barrier rectifier in SOD523 package

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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

PMEG2010AEB

DATA SHEET STATUS

| DOCUMENT STATUS ⁽¹⁾ | PRODUCT STATUS ⁽²⁾ | 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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NXP Semiconductors

Customer notification

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Contact information

For additional information please visit: <http://www.nxp.com>

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