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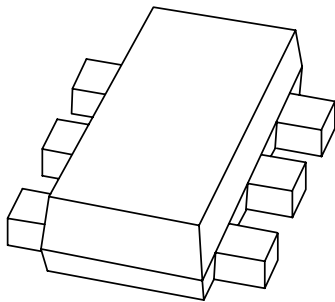
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Kind regards,

Team Nexperia

DATA SHEET



PMEG1020EV

Ultra low V_F MEGA Schottky barrier
rectifier

Product data sheet

2003 Jul 15

Ultra low V_F MEGA Schottky barrier rectifier

PMEG1020EV

FEATURES

- Forward current: 2 A
- Reverse voltage: 10 V
- Ultra low forward voltage
- Ultra small plastic SMD package.

APPLICATIONS

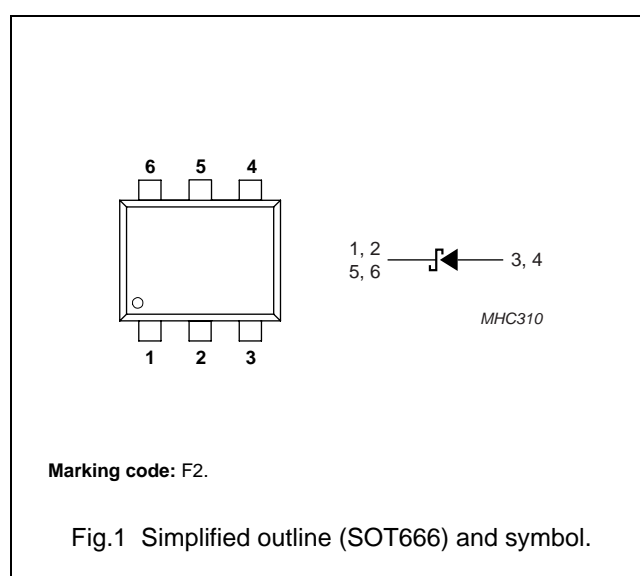
- Low voltage rectification
- High efficiency DC/DC conversion
- Switch mode power supply
- Inverse polarity protection
- Low power consumption applications.

DESCRIPTION

Planar Maximum Efficiency General Application (MEGA) Schottky barrier rectifier with an integrated guard ring for stress protection encapsulated in a SOT666 ultra small plastic SMD package.

PINNING

| PIN | DESCRIPTION |
|-----|-------------|
| 1 | cathode |
| 2 | cathode |
| 3 | anode |
| 4 | anode |
| 5 | cathode |
| 6 | cathode |



LIMITING VALUES

In accordance with the Absolute Maximum Rating System (IEC 60134).

| SYMBOL | PARAMETER | CONDITIONS | MIN. | MAX. | UNIT |
|-----------|-------------------------------------|---|------|------|------------------|
| V_R | continuous reverse voltage | | — | 10 | V |
| I_F | continuous forward current | $T_{sp} \leq 55^\circ\text{C}$; note 1 | — | 2 | A |
| I_{FRM} | repetitive peak forward current | $t_p \leq 1\text{ ms}$; $\delta \leq 0.5$; note 1 | — | 3.2 | A |
| I_{FSM} | non-repetitive peak forward current | $t_p = 8\text{ ms}$ square wave; note 1 | — | 9 | A |
| T_{stg} | storage temperature | | -65 | +150 | $^\circ\text{C}$ |
| T_j | junction temperature | | — | 150 | $^\circ\text{C}$ |
| T_{amb} | operating ambient temperature | | -65 | +150 | $^\circ\text{C}$ |

Note

1. Only valid if pins 3 and 4 are connected in parallel.

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ELECTRICAL CHARACTERISTICS

$T_{amb} = 25\text{ }^{\circ}\text{C}$ unless otherwise specified.

| SYMBOL | PARAMETER | CONDITIONS | TYP. | MAX. | UNIT |
|--------|-------------------|--|--------------------------|--------------------------|----------------------|
| V_F | forward voltage | see Fig.2; note 1 $I_F = 0.01\text{ A}$ $I_F = 0.1\text{ A}$ $I_F = 1\text{ A}$ $I_F = 2\text{ A}$ | 100 164 255 306 | 130 200 350 460 | mV mV mV mV |
| I_R | reverse current | see Fig.3 note 2 $V_R = 5\text{ V}$ $V_R = 8\text{ V}$ $V_R = 10\text{ V}$ | 0.7 1 1.2 | 2 2.5 3 | mA mA mA |
| C_d | diode capacitance | $V_R = 5\text{ V}$; $f = 1\text{ MHz}$; see Fig.4 | 37 | 45 | pF |

Notes

1. Pulse test: $t_p = 300\text{ }\mu\text{s}$; $\delta = 0.02$.
2. For Schottky barrier rectifiers thermal runaway has to be considered, as in some applications the reverse power losses (P_R) are a significant part of the total power losses.

THERMAL CHARACTERISTICS

| SYMBOL | PARAMETER | CONDITIONS | VALUE | UNIT |
|---------------|--|------------|-------|------|
| $R_{th\ j-a}$ | thermal resistance from junction to ambient | note 1 | 405 | K/W |
| | | note 2 | 215 | K/W |
| $R_{th\ j-s}$ | thermal resistance from junction to solder point | note 3 | 80 | K/W |

Notes

1. Refer to SOT666 standard mounting conditions.
2. Device mounted on a printed-circuit board, single-sided copper, tinplated, mounting pad for cathode 1 cm^2 .
3. Solder point of cathode tabs.

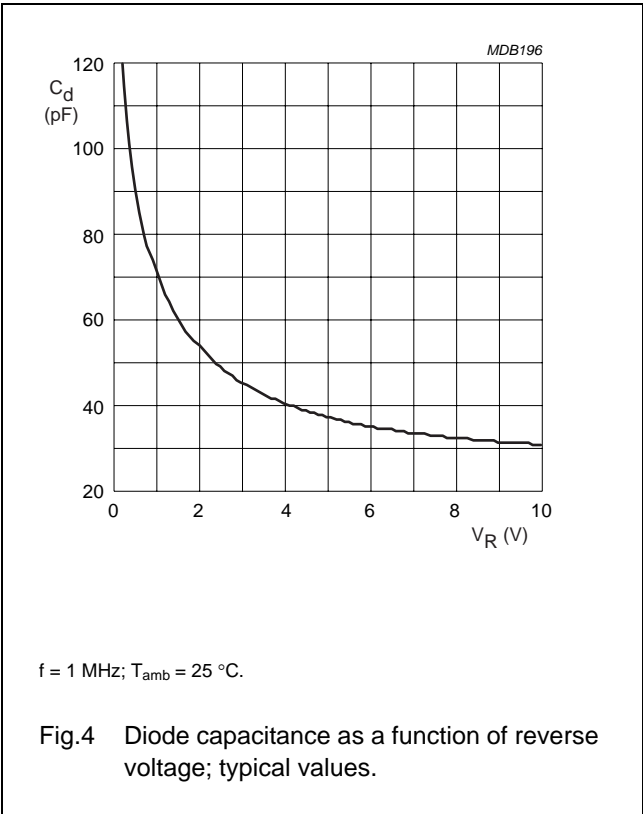
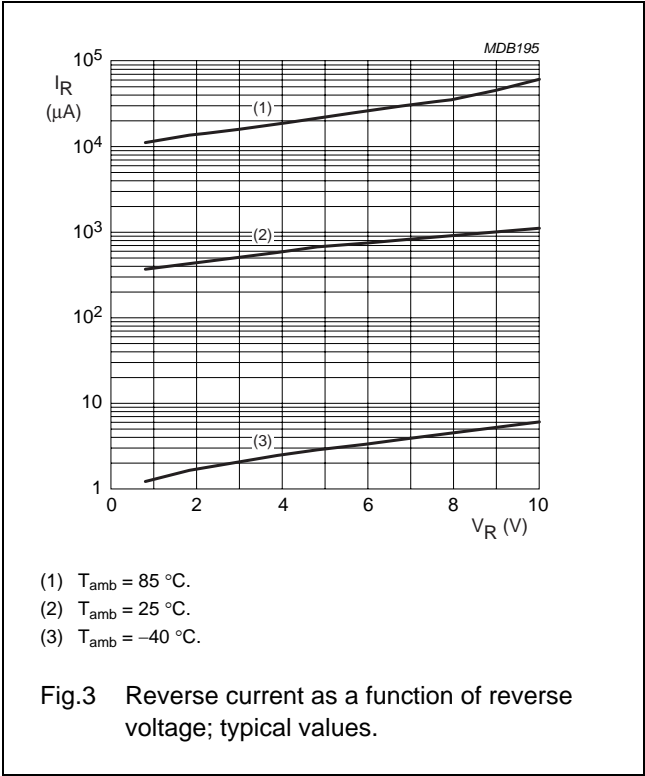
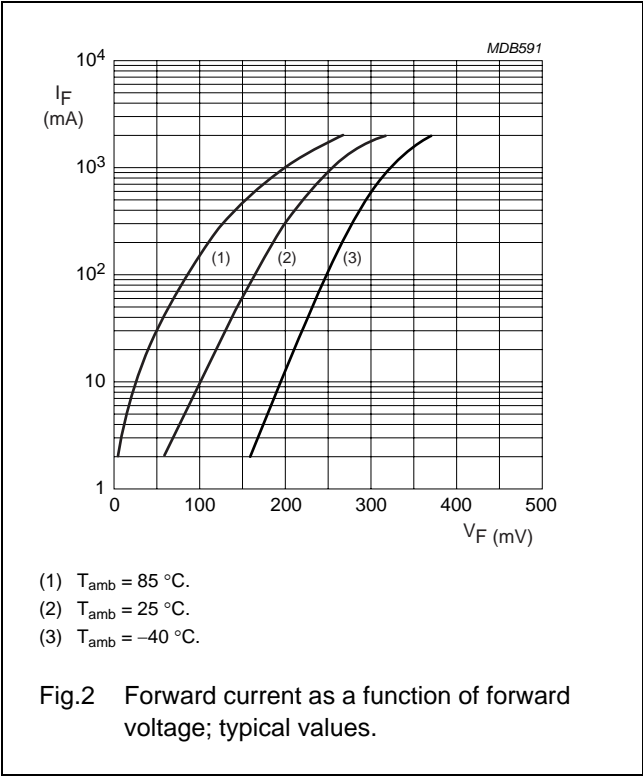
Soldering

Reflow soldering is the only recommended soldering method.

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GRAPHICAL DATA



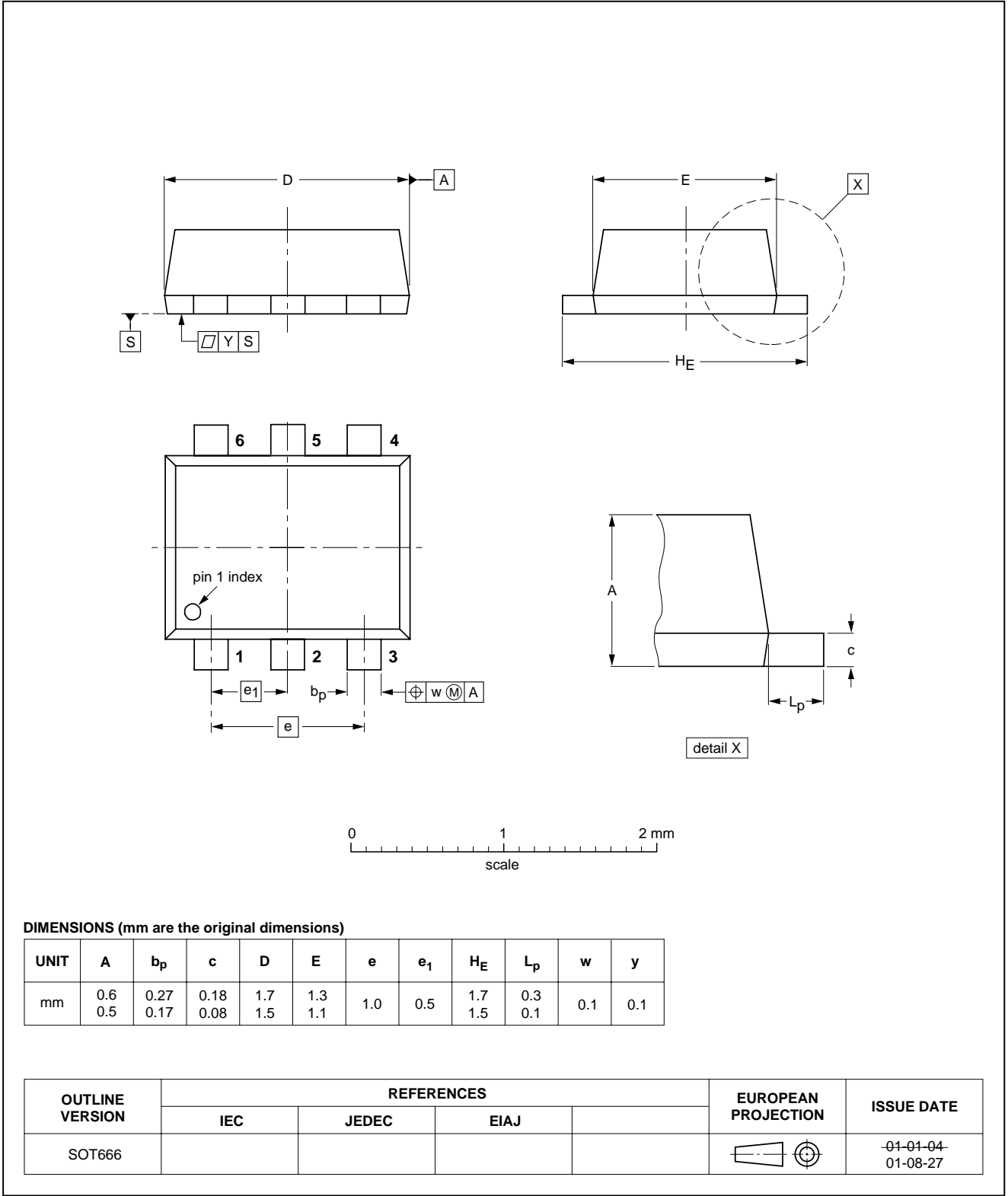
Ultra low V_F MEGA Schottky barrier rectifier

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PACKAGE OUTLINE

Plastic surface mounted package; 6 leads

SOT666



Ultra low V_F MEGA Schottky barrier rectifier

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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. |

Notes

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2. The product status of device(s) described in this document may have changed since this document was published and may differ in case of multiple devices. The latest product status information is available on the Internet at URL <http://www.nxp.com>.

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NXP Semiconductors

Customer notification

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Contact information

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

For sales offices addresses send e-mail to: **salesaddresses@nxp.com**

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