

DATA SHEET



PMEG1020EV

Ultra low V_F MEGA Schottky barrier
rectifier

Product specification

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

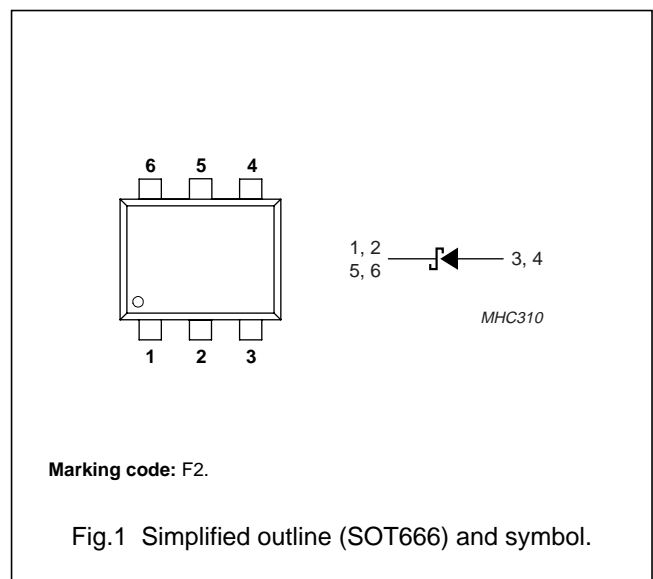
- Low voltage rectification
- High efficiency DC/DC conversion
- Switch mode power supply
- Inverse polarity protection
- Low power consumption applications.

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	$T_{sp} \leq 55\text{ }^\circ\text{C}$; 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			
		$I_F = 0.01\text{ A}$	100	130	mV
		$I_F = 0.1\text{ A}$	164	200	mV
		$I_F = 1\text{ A}$	255	350	mV
		$I_F = 2\text{ A}$	306	460	mV
I_R	reverse current	see Fig.3 note 2			
		$V_R = 5\text{ V}$	0.7	2	mA
		$V_R = 8\text{ V}$	1	2.5	mA
		$V_R = 10\text{ V}$	1.2	3	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.

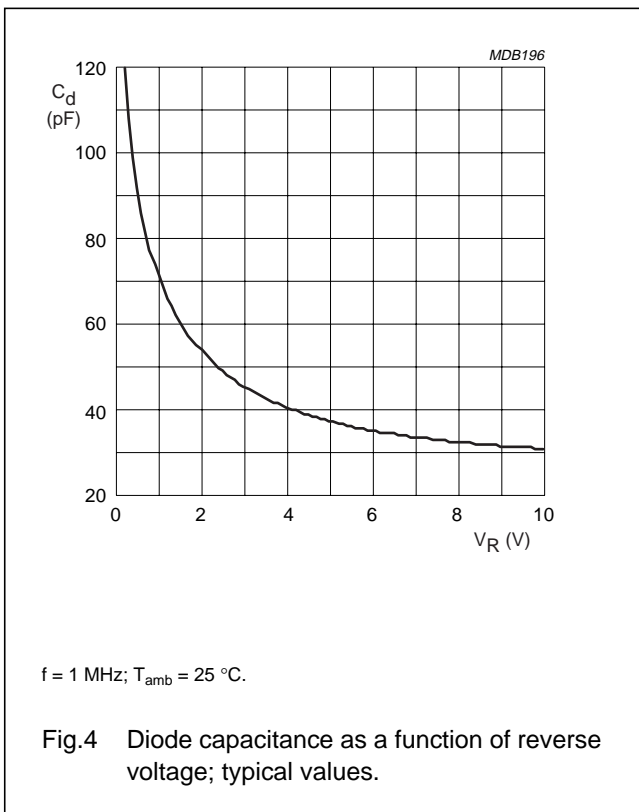
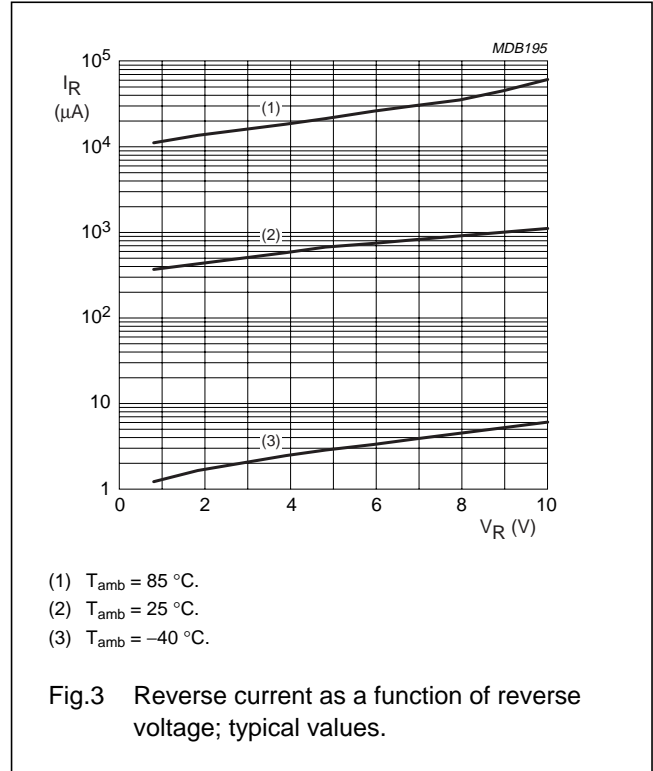
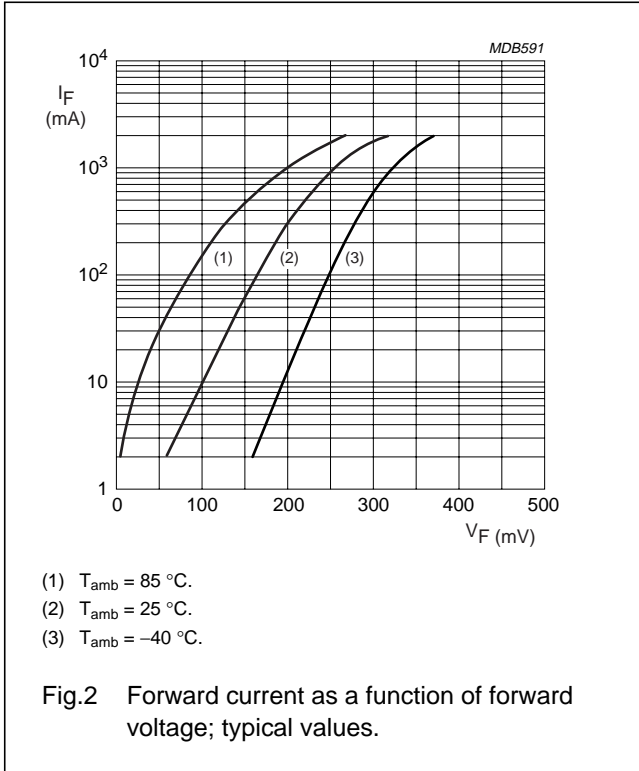
Soldering

Reflow soldering is the only recommended soldering method.

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GRAPHICAL DATA



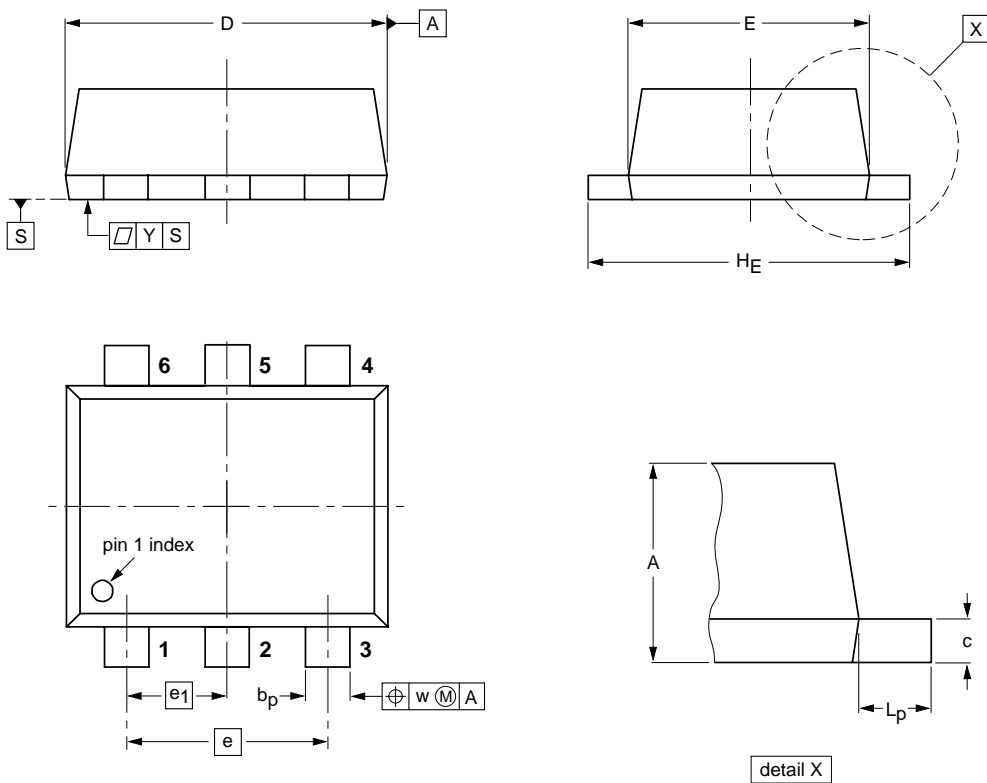
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PACKAGE OUTLINE

Plastic surface mounted package; 6 leads

SOT666



DIMENSIONS (mm are the original dimensions)

UNIT	A	b_p	c	D	E	e	e_1	H_E	L_p	w	y
mm	0.6 0.5	0.27 0.17	0.18 0.08	1.7 1.5	1.3 1.1	1.0	0.5	1.7 1.5	0.3 0.1	0.1	0.1

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ			
SOT666						01-01-04 01-08-27

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Contact information

For additional information please visit <http://www.semiconductors.philips.com>. Fax: +31 40 27 24825

For sales offices addresses send e-mail to: sales.addresses@www.semiconductors.philips.com.

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