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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

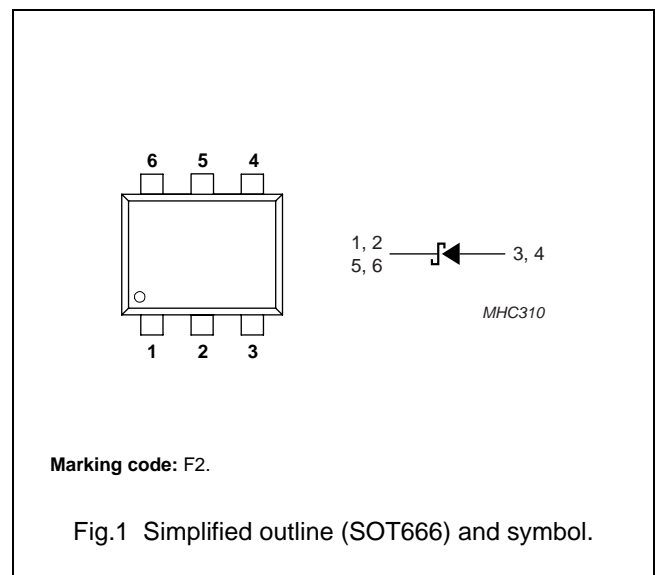
- Low voltage rectification
- High efficiency DC/DC conversion
- Switch mode power supply
- Inverse polarity protection
- Low power consumption applications.

### 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	$T_{sp} \leq 55\text{ }^\circ\text{C}$ ; 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.

# Ultra low $V_F$ MEGA Schottky barrier rectifier

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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
$I_R$	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  $1\text{ cm}^2$ .
3. Solder point of cathode tabs.

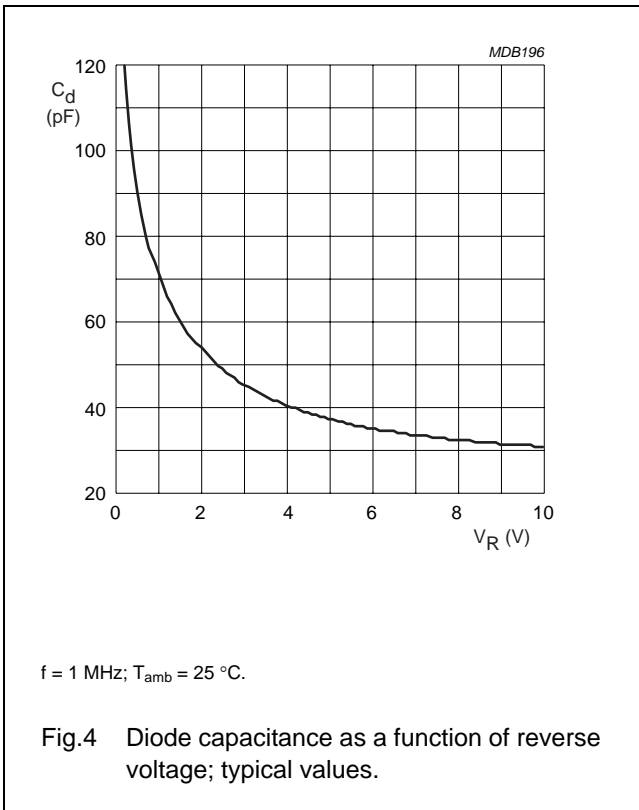
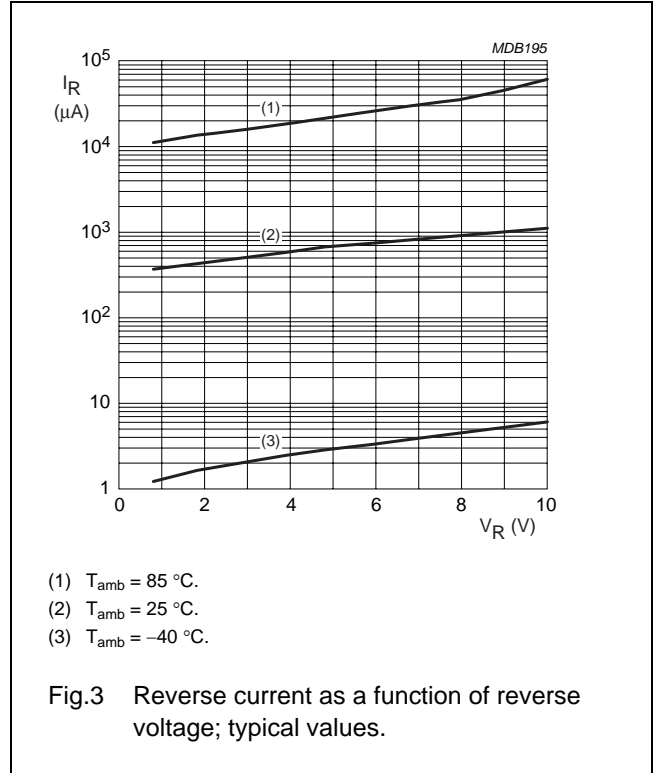
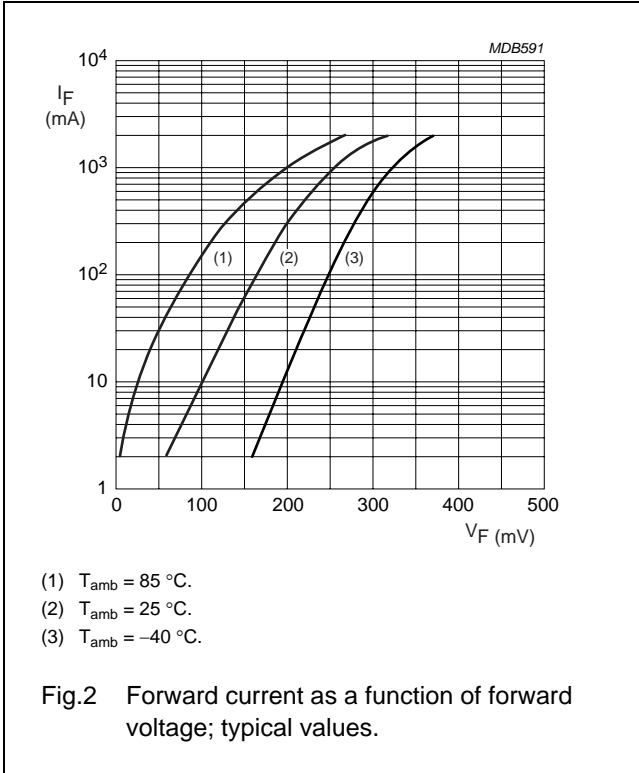
### Soldering

Reflow soldering is the only recommended soldering method.

Ultra low  $V_F$  MEGA Schottky barrier rectifier

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GRAPHICAL DATA



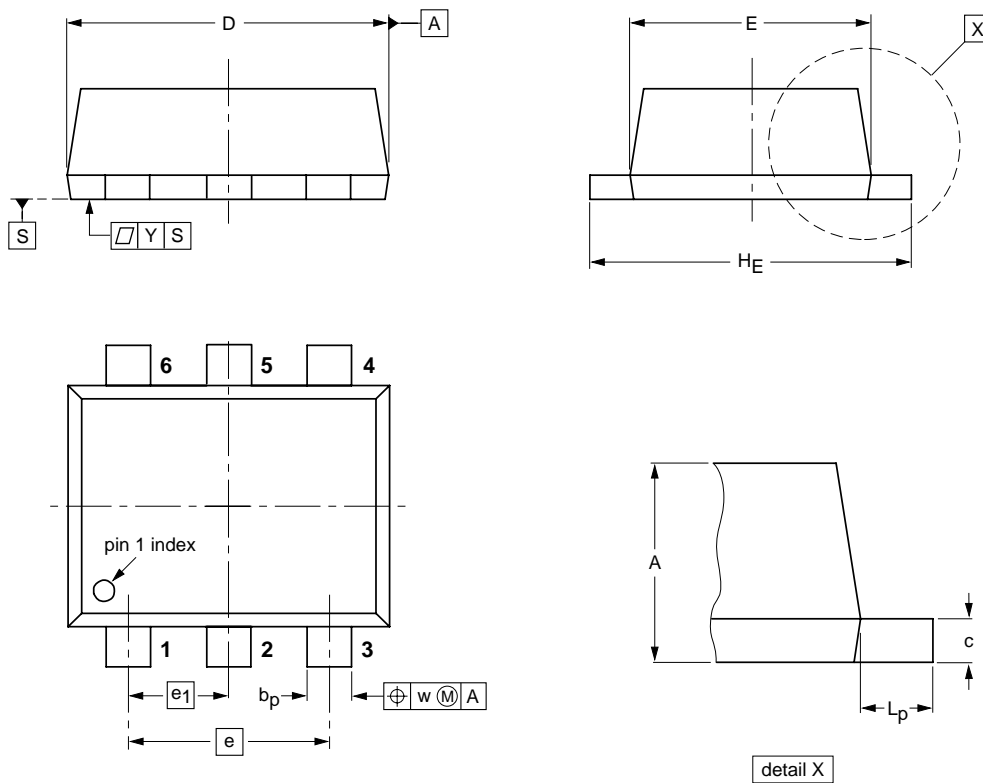
# Ultra low $V_F$ MEGA Schottky barrier rectifier

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## PACKAGE OUTLINE

Plastic surface mounted package; 6 leads

SOT666



**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

Ultra low  $V_F$  MEGA Schottky barrier rectifier

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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.

Notes

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# ***NXP Semiconductors***

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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](mailto:salesaddresses@nxp.com)

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