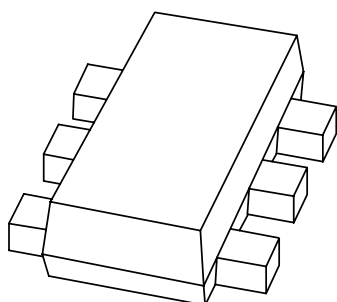


DATA SHEET



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

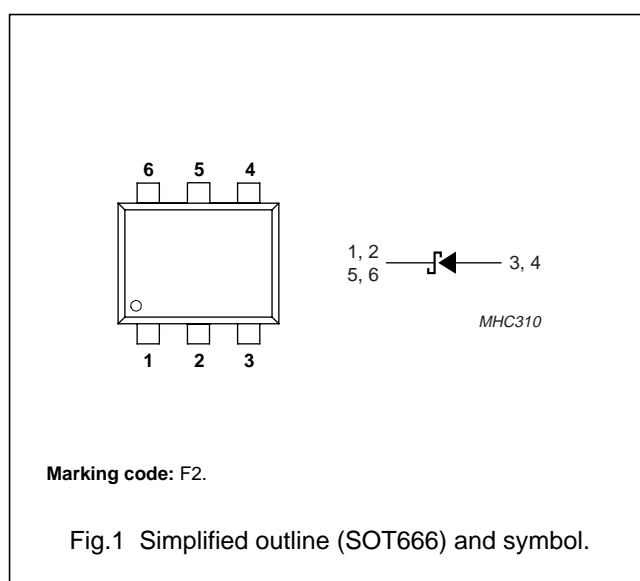
- Low voltage rectification
- High efficiency DC/DC conversion
- Switch mode power supply
- Inverse polarity protection
- Low power consumption applications.

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

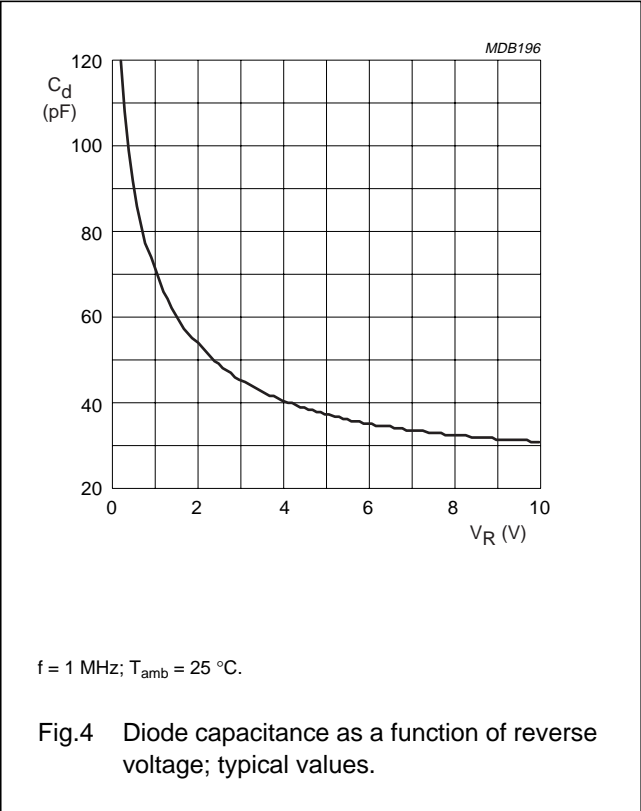
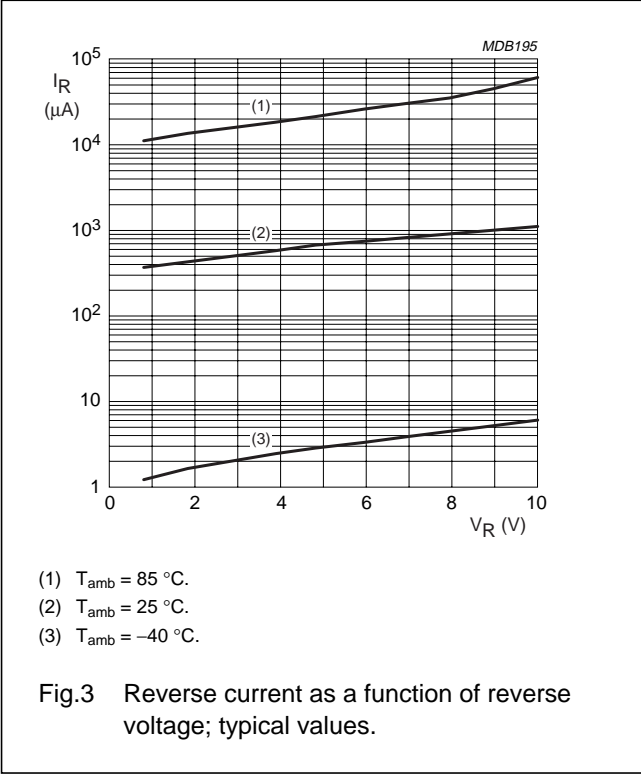
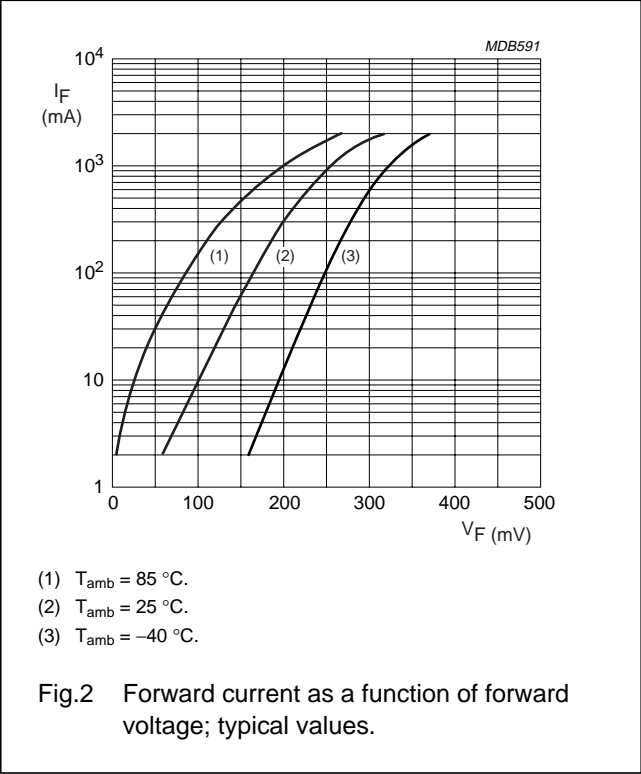
Soldering

Reflow soldering is the only recommended soldering method.

Ultra low V_F MEGA Schottky barrier rectifier

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GRAPHICAL DATA



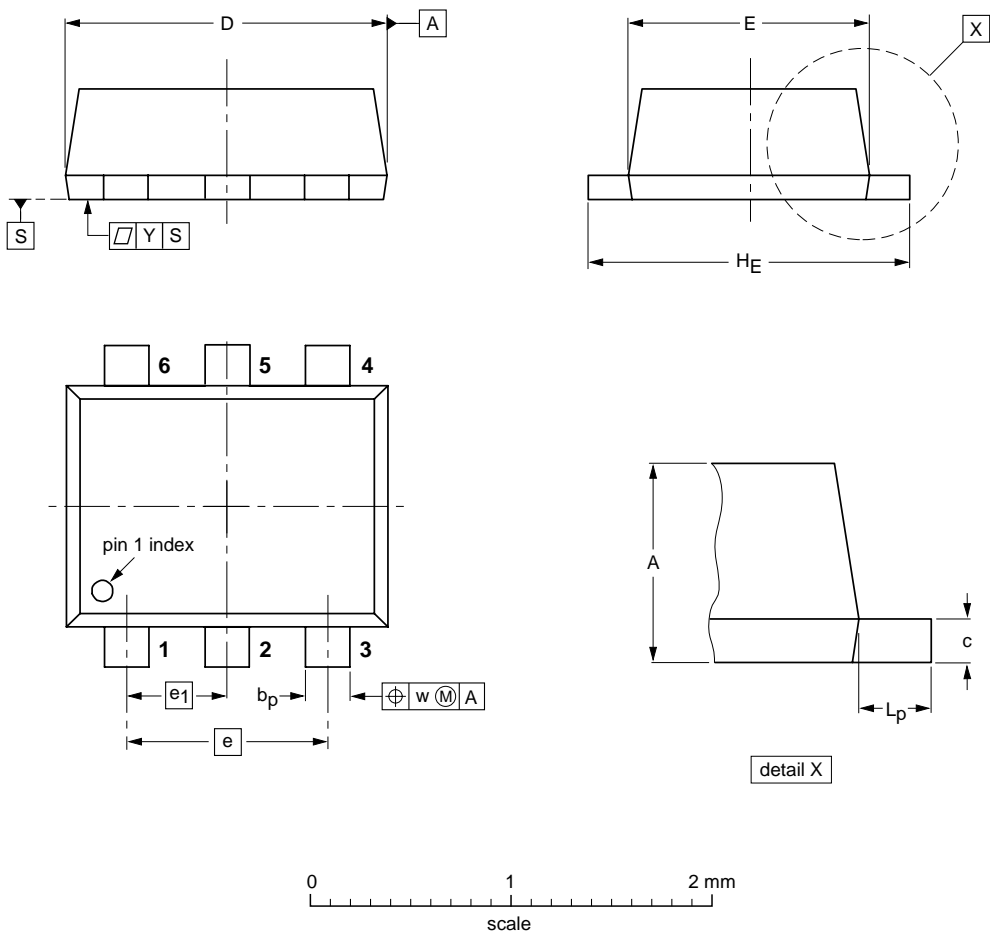
Ultra low V_F MEGA Schottky barrier rectifier

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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

LEVEL	DATA SHEET STATUS ⁽¹⁾	PRODUCT STATUS ⁽²⁾⁽³⁾	DEFINITION
I	Objective data	Development	This data sheet contains data from the objective specification for product development. Philips Semiconductors reserves the right to change the specification in any manner without notice.
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Limiting values definition — Limiting values given are in accordance with the Absolute Maximum Rating System (IEC 60134). Stress above one or more of the limiting values may cause permanent damage to the device. These are stress ratings only and operation of the device at these or at any other conditions above those given in the Characteristics sections of the specification is not implied. Exposure to limiting values for extended periods may affect device reliability.

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