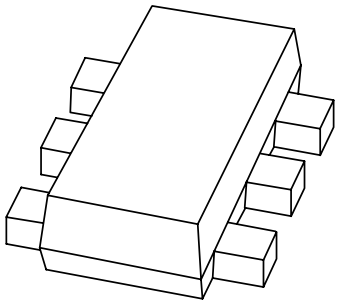
DATA SHEET



PMEG2010EV

Low V_F MEGA Schottky barrier diode

Product specification
Supersedes data of 2002 Jun 24

2003 Aug 20

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Low V_F MEGA Schottky barrier diode PMEG2010EV

FEATURES

- Forward current: 1 A
- Reverse voltage: 20 V
- Very low forward voltage
- Ultra small SMD package
- Flat leads: excellent coplanarity and improved thermal behaviour.

APPLICATIONS

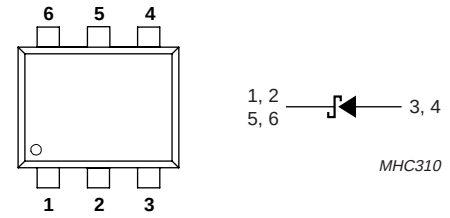
- Low voltage rectification
- High efficiency DC/DC conversion
- Switch mode power supply
- Inverse polarity protection
- Low power consumption applications.

DESCRIPTION

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

PINNING

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



Marking code: F1.

Fig.1 Simplified outline (SOT666) and symbol.

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		–	1	A
I_{FSM}	non-repetitive peak forward current	t = 8.3 ms half sinewave; JEDEC method; note 1	–	8	A
T_{stg}	storage temperature		–65	+150	°C
T_j	junction temperature		–	125	°C
T_{amb}	operating ambient temperature		–65	+125	°C

Note

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

THERMAL CHARACTERISTICS

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

Notes

1. Refer to SOT666 standard mounting conditions.
2. Mounted on printed circuit-board, 1 cm^2 copper area.

Soldering

The only recommended soldering method is reflow soldering.

ELECTRICAL CHARACTERISTICS

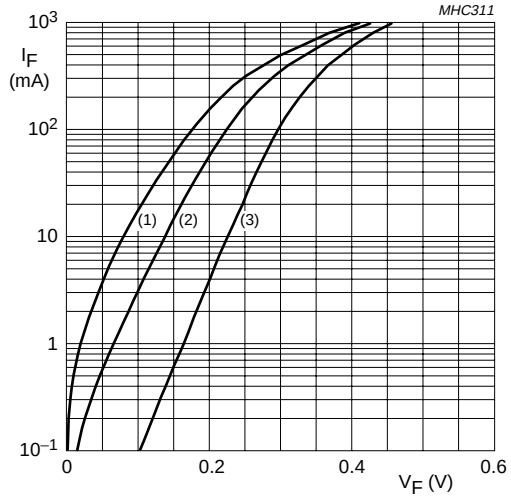
T_{amb} = 25 °C unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	TYP.	MAX.	UNIT
V_F	continuous forward voltage	I_F = 10 mA	240	270	mV
		I_F = 100 mA	300	350	mV
		I_F = 1000 mA; note 1; see Fig.2	480	550	mV
I_R	reverse current	V_R = 5 V; note 2	5	10	µA
		V_R = 8 V; note 2	7	20	µA
		V_R = 15 V; note 2; see Fig.3	10	50	µA
C_d	diode capacitance	V_R = 5 V; f = 1 MHz; see Fig.4	19	25	pF

Notes

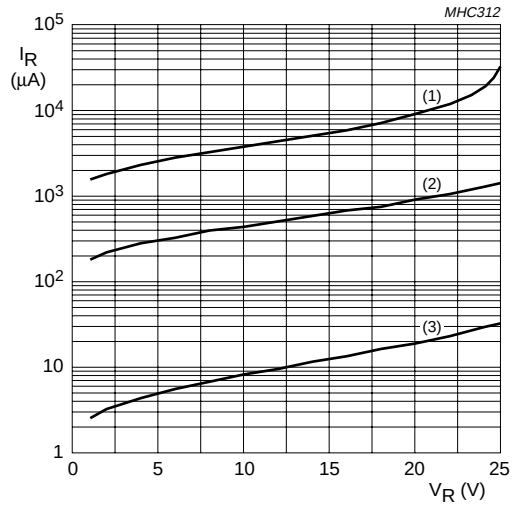
1. Only valid if pins 1, 2, 5 and 6 are soldered on a 1 cm^2 copper solder land.
2. Pulse test: t_p = 300 µs; δ = 0.02.

GRAPHICAL DATA



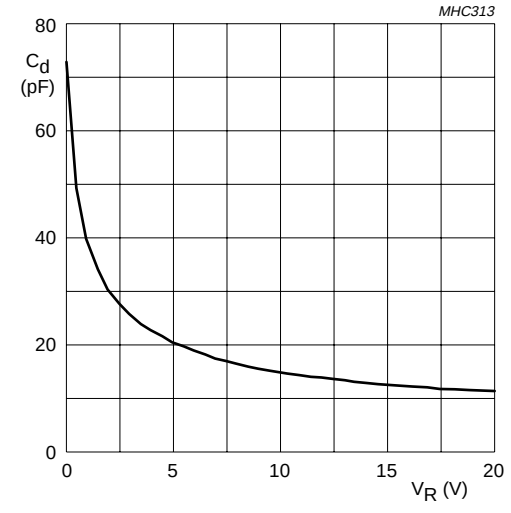
(1) T_{amb} = 125 °C.
(2) T_{amb} = 85 °C.
(3) T_{amb} = 25 °C.

Fig.2 Forward current as a function of forward voltage; typical values.



(1) T_{amb} = 125 °C.
(2) T_{amb} = 85 °C.
(3) T_{amb} = 25 °C.

Fig.3 Reverse current as a function of reverse voltage; typical values.

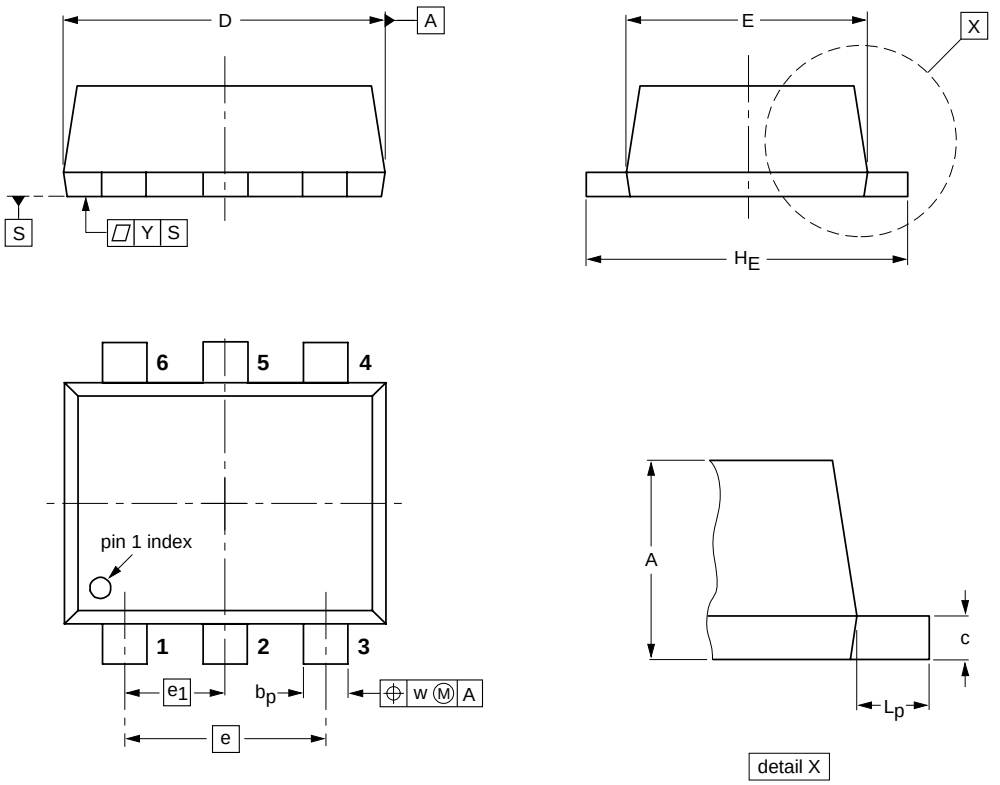


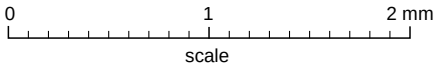
f = 1 MHz; T_{amb} = 25 °C.

Fig.4 Diode capacitance as a function of reverse voltage; typical values.

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

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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3. For data sheets describing multiple type numbers, the highest-level product status determines the data sheet status.

DEFINITIONS

Short-form specification — The data in a short-form specification is extracted from a full data sheet with the same type number and title. For detailed information see the relevant data sheet or data handbook.

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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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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