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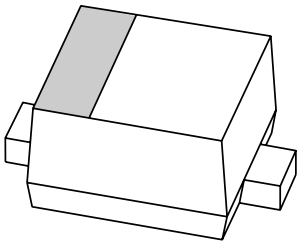
Team Nexperia

DATA SHEET



PMEG3002AEB

Low V_F MEGA Schottky barrier diode

Product data sheet

2002 May 06

Low V_F MEGA Schottky barrier diode PMEG3002AEB

FEATURES

- Forward current: 0.2 A
- Reverse voltage: 30 V
- Very low forward voltage
- Ultra small SMD package.

APPLICATIONS

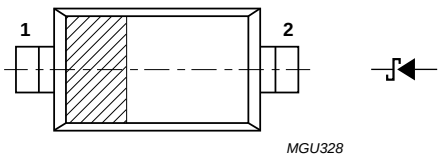
- Ultra high-speed switching
- High efficiency DC/DC conversion
- Voltage clamping
- Inverse-polarity protection
- Low voltage rectification
- Low power consumption applications.

DESCRIPTION

Planar Maximum Efficiency General Application (MEGA) Schottky barrier diode with an integrated guard ring for stress protection, encapsulated in a SOD523 (SC-79) ultra small SMD plastic package.

PINNING

PIN	DESCRIPTION
1	cathode
2	anode



Marking code: B1.
The marking bar indicates the cathode.

Fig.1 Simplified outline (SOD523; SC-79) 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		–	30	V
I_F	continuous forward current		–	200	mA
I_{FRM}	repetitive peak forward current	$t_p \leq 1$ s; $\delta \leq 0.5$	–	300	mA
I_{FSM}	non-repetitive peak forward current	t_p = 8.3 ms half sinewave; JEDEC method	–	1	A
T_{stg}	storage temperature		−65	+150	°C
T_j	junction temperature		–	125	°C
T_{amb}	operating ambient temperature		−65	+125	°C

ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	TYP.	MAX.	UNIT
V_F	continuous forward voltage	see Fig.2			
		I_F = 0.1 mA	130	190	mV
		I_F = 1 mA	190	250	mV
		I_F = 10 mA	255	300	mV
		I_F = 100 mA	355	400	mV
		I_F = 200 mA	420	480	mV
I_R	continuous reverse current	V_R = 10 V; see Fig.3; note 1	2.5	10	μA
C_d	diode capacitance	V_R = 1 V; f = 1 MHz; see Fig.4	20	25	pF

Note

1. Pulsed test: t_p = 300 μs; δ = 0.02.

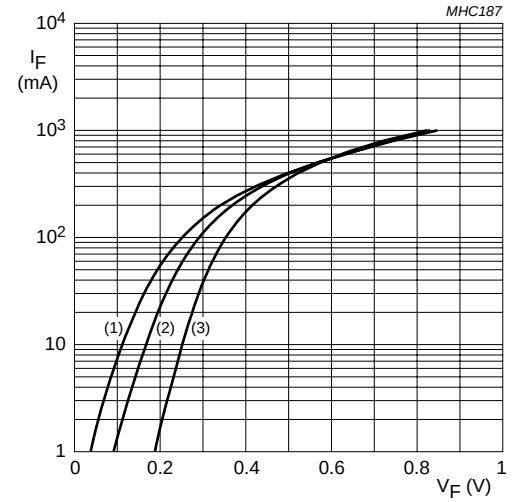
THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j\text{-}a}$	thermal resistance from junction to ambient	note 1	450	K/W

Note

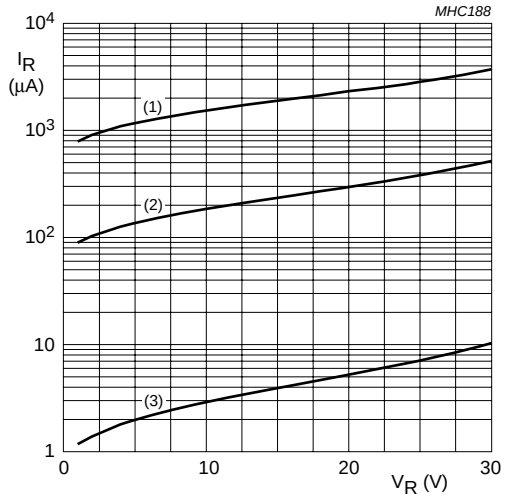
1. Refer to SOD523 (SC-79) standard mounting conditions.

GRAPHICAL DATA



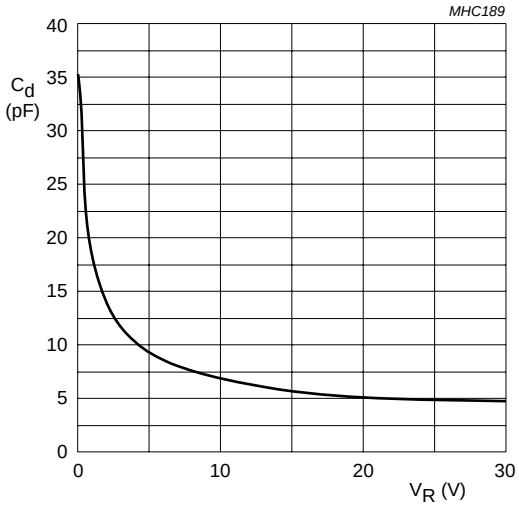
(1) T_{amb} = 125 °C.
(2) T_{amb} = 85 °C.
(3) T_{amb} = 25 °C.

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.

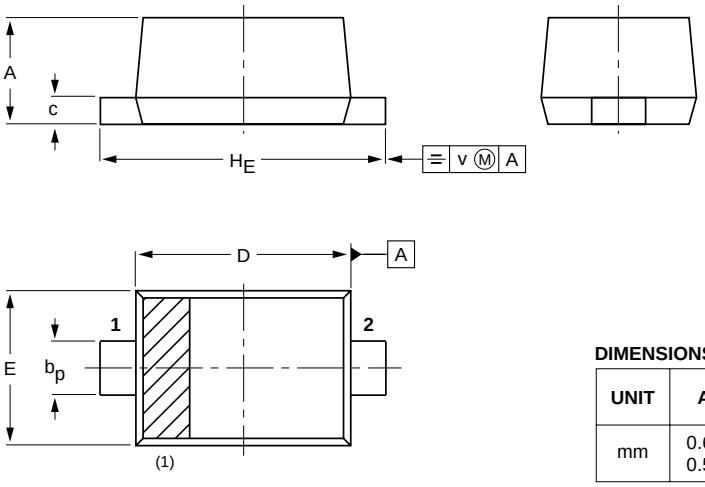


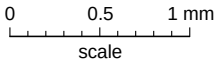
f = 1 MHz; T_{amb} = 25 °C.

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

PACKAGE OUTLINE

Plastic surface mounted package; 2 leads **SOD523**





DIMENSIONS (mm are the original dimensions)

UNIT	A	b_p	c	D	E	H_E	v
mm	0.65 0.58	0.34 0.26	0.17 0.11	1.25 1.15	0.85 0.75	1.65 1.55	0.1

Note

1. The marking bar indicates the cathode.

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	JEITA			
SOD523			SC-79			~~98-11-25~~ 02-12-13

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.

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NXP Semiconductors

Customer notification

This data sheet was changed to reflect the new company name NXP Semiconductors, including new legal definitions and disclaimers. No changes were made to the technical content, except for package outline drawings which were updated to the latest version.

Contact information

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