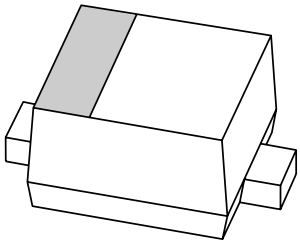
DATA SHEET



PMEG2010AEB

20 V, 1 A ultra low V_F MEGA Schottky barrier rectifier in SOD523 package

Product data sheet

2003 Dec 03

20 V, 1 A ultra low V_F MEGA Schottky barrier rectifier in SOD523 package

PMEG2010AEB

FEATURES

- Forward current: 1.0 A
- Reverse voltage: 20 V
- Ultra low forward voltage
- Ultra small SMD package.

APPLICATIONS

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

DESCRIPTION

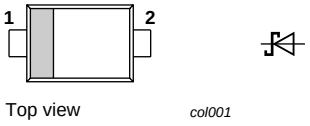
Planar Maximum Efficiency General Application (MEGA) Schottky barrier rectifier with an integrated guard ring for stress protection, encapsulated in a SOD523 (SC-79) ultra small plastic SMD package.

QUICK REFERENCE DATA

SYMBOL	PARAMETER	MAX.	UNIT
I_F	forward current	1	A
V_R	reverse voltage	20	V

PINNING

PIN	DESCRIPTION
1	cathode
2	anode



Marking code: L6.
The marking bar indicates the cathode.

Fig.1 Simplified outline (SOD523; SC-79) and symbol.

ORDERING INFORMATION

TYPE NUMBER	PACKAGE		
	NAME	DESCRIPTION	VERSION
PMEG2010AEB	–	plastic surface mounted package; 2 leads	SOD523

RELATED PRODUCTS

TYPE	DESCRIPTION	FEATURE
PMEG2005EB	0.5 A; 20 V very low V_F MEGA Schottky rectifier	Lower I_R in same package
PMEG2010EA	1 A; 20 V very low V_F MEGA Schottky rectifier	Lower forward current, lower I_R SOD323 (SC76)

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	$T_s \leq 55$ °C	–	1.0	A
I_{FRM}	repetitive peak forward current	$t_p \leq 1$ ms; $\delta \leq 0.5$	–	3.5	A
I_{FSM}	non-repetitive peak forward current	t = 8 ms square wave	–	6	A
T_{stg}	storage temperature		−65	+150	°C
T_j	junction temperature	note 1	–	150	°C
T_{amb}	operating ambient temperature	note 1	−65	+150	°C

Note

1. For Schottky barrier rectifiers, thermal run-away has to be considered, as in some applications the reverse power losses P_R are a significant part of the total power losses. Nomograms for determination of the reverse power losses P_R and $I_{F(AV)}$ rating will be available on request.

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th(j-a)}$	thermal resistance from junction to ambient	in free air; notes 1 and 2	400	K/W
$R_{th(j-s)}$	thermal resistance from junction to soldering point	notes 2 and 3	75	K/W

Notes

1. Refer to SOD523 (SC-79) standard mounting conditions.
2. For Schottky barrier rectifiers, thermal run-away has to be considered, as in some applications the reverse power losses P_R are a significant part of the total power losses. Nomograms for determination of the reverse power losses P_R and $I_{F(AV)}$ rating will be available on request.
3. Solder point of cathode tab.

CHARACTERISTICS

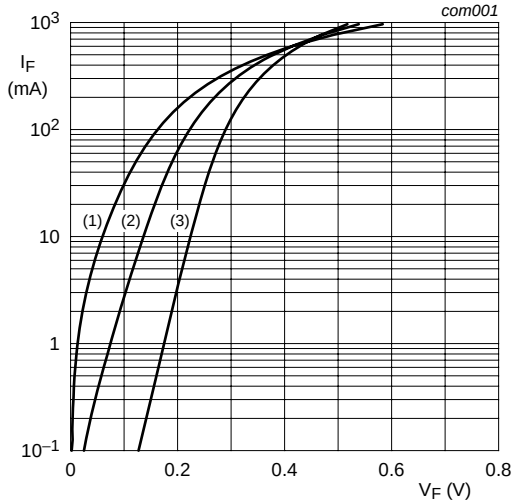
T_{amb} = 25 °C unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	TYP.	MAX.	UNIT
V_F	forward voltage	I_F = 0.1 mA	30	60	mV
		I_F = 1 mA	80	110	mV
		I_F = 10 mA	140	190	mV
		I_F = 100 mA	230	290	mV
		I_F = 1000 mA	510	620	mV
I_R	continuous reverse current	V_R = 10 V; note 1	0.17	0.6	mA
		V_R = 20 V; note 1	0.32	1.5	mA
C_d	diode capacitance	V_R = 1 V; f = 1 MHz	19	25	pF

Note

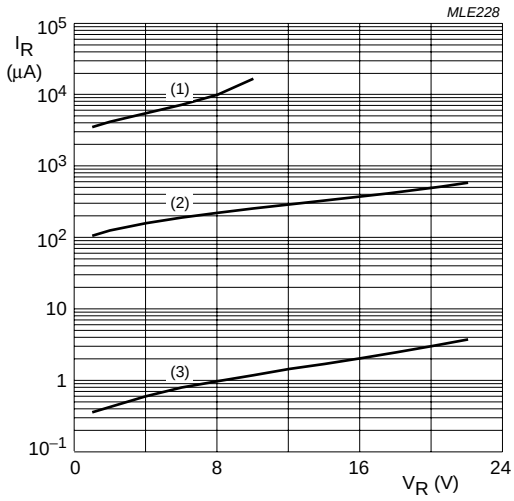
1. Pulse test: $t_p \leq 300\ \mu s$; $\delta \leq 0.02$.

GRAPHICAL DATA



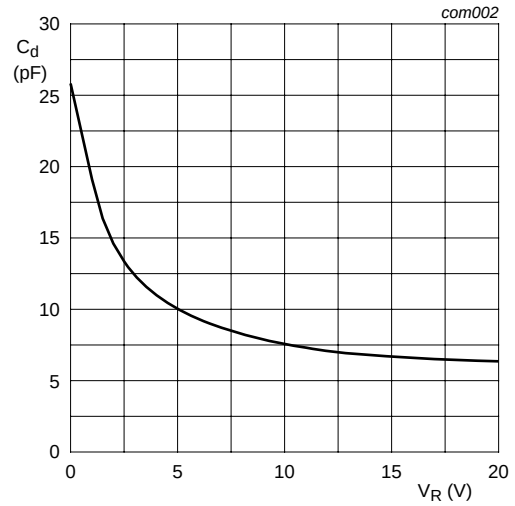
(1) T_{amb} = 85 °C.
(2) T_{amb} = 25 °C.
(3) T_{amb} = −40 °C.

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



(1) T_{amb} = 85 °C.
(2) T_{amb} = 25 °C.
(3) T_{amb} = −40 °C.

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

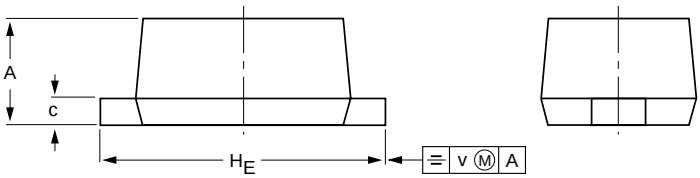


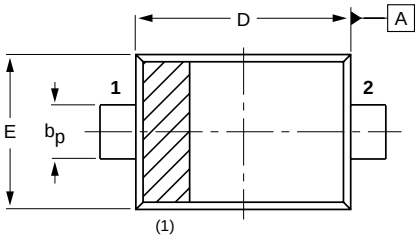
f = 1 MHz; T_{amb} = 25 °C.

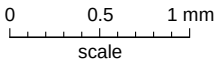
Fig.4 Diode capacitance as a function of reverse voltage; typical values.

PACKAGE OUTLINE

Plastic surface mounted package; 2 leads **SOD523V**







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			
SOD523V			SC-79			~~00-12-07~~ 02-04-19

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.

Notes

1. Please consult the most recently issued document before initiating or completing a design.
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