



PMEG2010AEB-Q

20 V, 1 A low VF Schottky barrier rectifier

6 August 2026

Product data sheet

1. General description

Planar Schottky barrier rectifier with an integrated guard ring for stress protection, encapsulated in a SOD523 (SC-79) ultra small and flat lead Surface-Mounted Device (SMD) plastic package.

2. Features and benefits

- Forward current: 1.0 A
- Reverse voltage: 20 V
- Ultra low forward voltage
- Ultra small SMD package
- Qualified according to AEC-Q101 and recommended for use in automotive applications

3. Applications

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

4. Quick reference data

Table 1. Quick reference data

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
V_R	reverse voltage		-	-	20	V
V_F	forward voltage	$I_F = 1\text{ A}$; $T_{amb} = 25\text{ °C}$	-	510	620	mV
I_F	forward current	$T_{sp} \leq 55\text{ °C}$	-	-	1	A

5. Pinning information

Table 2. Pinning information

Pin	Symbol	Description	Simplified outline	Graphic symbol
1	K	cathode	 SC-79 (SOD523)	 K  A sym001
2	A	anode		

6. Ordering information

Table 3. Ordering information

Type number	Package		
	Name	Description	Version
PMEG2010AEB-Q	SC-79	plastic, surface-mounted package; 2 leads; 1.2 mm x 0.8 mm x 0.6 mm body	SOD523

7. Marking

Table 4. Marking codes

Type number	Marking code
PMEG2010AEB-Q	L6

8. Limiting values

Table 5. Limiting values

In accordance with the Absolute Maximum Rating System (IEC 60134).

Symbol	Parameter	Conditions		Min	Max	Unit
V _R	reverse voltage			-	20	V
I _F	forward current	T _{sp} ≤ 55 °C		-	1	A
I _{FRM}	repetitive peak forward current	t _p ≤ 1 ms; δ ≤ 0.5		-	3.5	A
I _{FSM}	non-repetitive peak forward current	square-wave pulse; t _p = 8 ms		-	6	A
T _j	junction temperature		[1]	-	150	°C
T _{amb}	ambient temperature		[1]	-65	150	°C
T _{stg}	storage temperature			-65	150	°C

[1] For Schottky barrier diodes 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. Nomograms for determining the reverse power losses P_R and I_{F(AV)} rating will be available on request.

9. Thermal characteristics

Table 6. Thermal characteristics

Symbol	Parameter	Conditions		Min	Typ	Max	Unit
R _{th(j-a)}	thermal resistance from junction to ambient	in free air	[1] [2]	-	-	400	K/W
R _{th(j-sp)}	thermal resistance from junction to solder point		[2] [3]	-	-	75	K/W

[1] Refer to SOD523 (SC-79) standard mounting conditions.
[2] For Schottky barrier diodes 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. Nomograms for determining the reverse power losses P_R and I_{F(AV)} rating will be available on request.
[3] Solder point of cathode tab.

10. Characteristics

Table 7. Characteristics

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
V _F	forward voltage	I _F = 0.1 mA; T _{amb} = 25 °C	-	30	60	mV
		I _F = 1 mA; T _{amb} = 25 °C	-	80	110	mV
		I _F = 10 mA; T _{amb} = 25 °C	-	140	190	mV
		I _F = 100 mA; T _{amb} = 25 °C	-	230	290	mV
		I _F = 1 A; T _{amb} = 25 °C	-	510	620	mV
I _R	reverse current	V _R = 10 V; pulsed; t _p ≤ 300 μs; δ ≤ 0.02; T _{amb} = 25 °C	-	0.17	0.6	mA
		V _R = 20 V; pulsed; t _p ≤ 300 μs; δ ≤ 0.02; T _{amb} = 25 °C	-	0.32	1.5	mA
C _d	diode capacitance	V _R = 1 V; f = 1 MHz	-	19	25	pF

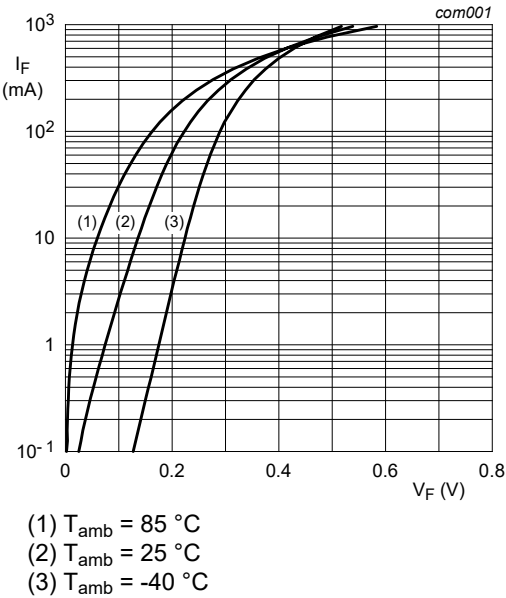


Fig. 1. Forward current as a function of forward voltage; typical values

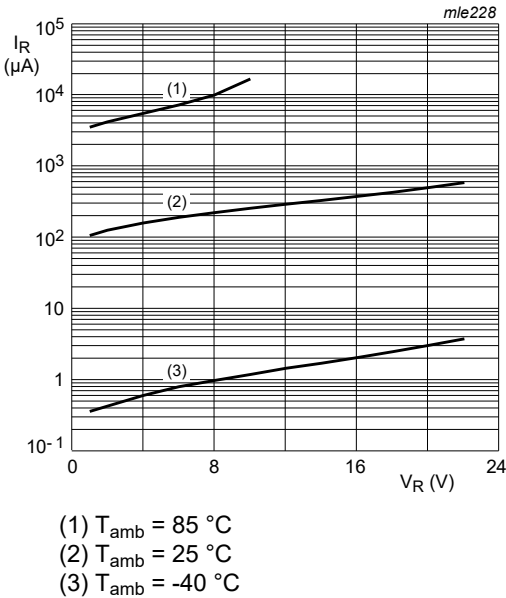
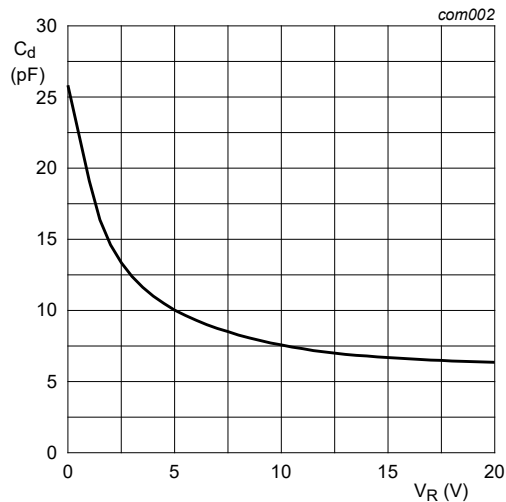


Fig. 2. Reverse current as a function of reverse voltage; typical values



f = 1 MHz; T_{amb} = 25 °C.

Fig. 3. Diode capacitance as a function of reverse voltage; typical values

11. Test information

Quality information

This product has been qualified in accordance with the Automotive Electronics Council (AEC) standard Q101 - *Stress test qualification for discrete semiconductors*, and is suitable for use in automotive applications.

12. Package outline

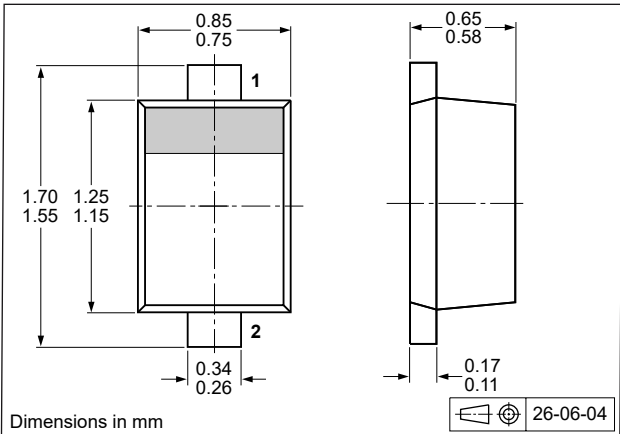


Fig. 4. Package outline SC-79 (SOD523)

13. Soldering

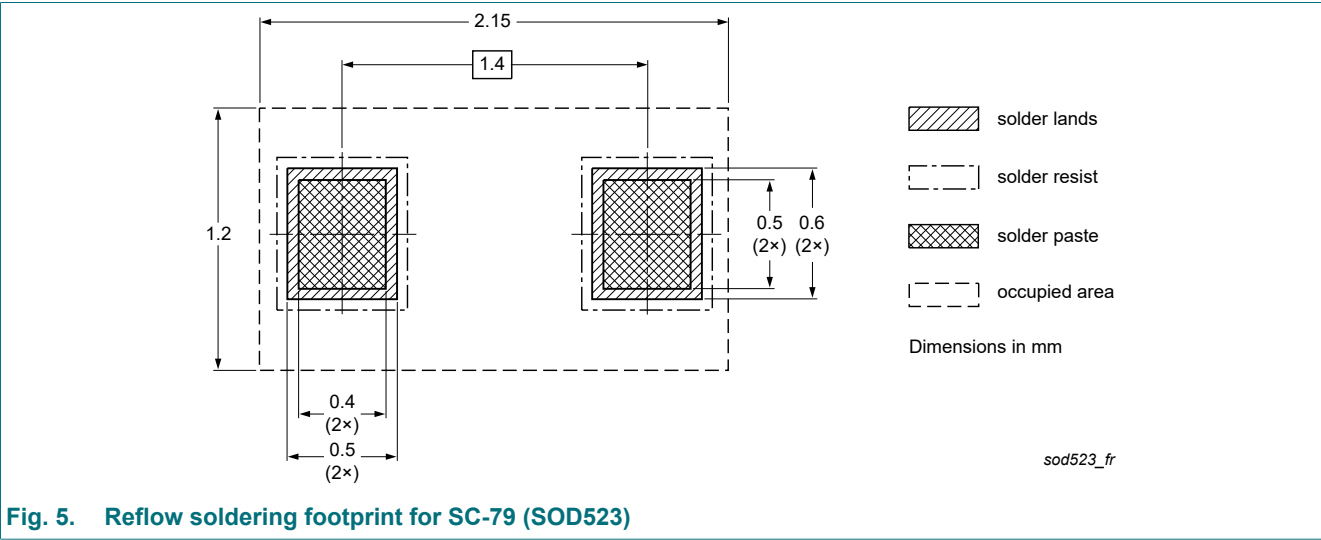


Fig. 5. Reflow soldering footprint for SC-79 (SOD523)

14. Revision history

Table 8. Revision history

Data sheet ID	Release date	Data sheet status	Change notice	Supersedes
PMEG2010AEB-Q v.2	20260806	Product data sheet	-	PMEG2010AEB-Q v.1
Modifications:	Aligned SOD523 package outline drawing			
PMEG2010AEB-Q v.1	20211025	Product data sheet	-	-

15. Legal information

Data sheet status

Document status [1][2]	Product status [3]	Definition
Objective [short] data sheet	Development	This document contains data from the objective specification for product development.
Preliminary [short] data sheet	Qualification	This document contains data from the preliminary specification.
Product [short] data sheet	Production	This document contains the product specification.

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