



PMEG2010AEJ

20 V, 1 A very low VF Schottky barrier rectifier

30 September 2025

Product data sheet

1. General description

Planar Schottky barrier rectifier with an integrated guard ring for stress protection, encapsulated in a SOD323F (SC-90) very small and flat lead Surface Mounted Device (SMD) plastic package.

2. Features and benefits

- Forward current: ≤ 1 A
- Reverse voltage: ≤ 20 V
- Very low forward voltage
- Very small and flat lead SMD plastic package

3. Applications

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

4. Quick reference data

Table 1. Quick reference data

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
I_F	forward current	$T_{sp} \leq 55$ °C	-	-	1	A
V_R	reverse voltage	$T_j = 25$ °C	-	-	20	V
V_F	forward voltage	$I_F = 1$ A; pulsed; $t_p \leq 300$ μ s; $\delta \leq 0.02$; $T_{amb} = 25$ °C	-	480	550	mV

5. Pinning information

Table 2. Pinning information

Pin	Symbol	Description	Simplified outline	Graphic symbol
1	K	cathode		
2	A	anode		

6. Ordering information

Table 3. Ordering information

Type number	Package		
	Name	Description	Version
PMEG2010AEJ	SC-90	plastic, surface-mounted package; 2 leads; 1.7 mm x 1.25 mm x 0.7 mm body	SOD323F

7. Marking

Table 4. Marking codes

Type number	Marking code
PMEG2010AEJ	EM

8. Limiting values

Table 5. Limiting values

In accordance with the Absolute Maximum Rating System (IEC60134)

Symbol	Parameter	Conditions		Min	Max	Unit
V_R	reverse voltage	$T_j = 25^\circ\text{C}$		-	20	V
I_F	forward current	$T_{sp} \leq 55^\circ\text{C}$		-	1	A
I_{FRM}	repetitive peak forward current	$t_p \leq 1\text{ ms}; \delta \leq 0.25$		-	5.5	A
I_{FSM}	non-repetitive peak forward current	$t_p = 8\text{ ms}; \text{square wave}$		-	10	A
P_{tot}	total power dissipation	$T_{amb} \leq 25^\circ\text{C}$	[1]	-	360	mW
			[2]	-	830	mW
T_j	junction temperature			-	150	°C
T_{amb}	ambient temperature			-65	150	°C
T_{stg}	storage temperature			-65	150	°C

[1] Device mounted on an FR4 Printed-Circuit Board (PCB), single-sided copper, tin-plated and standard footprint.

[2] Device mounted on an FR4 PCB, single-sided copper, tin-plated, mounting pad for cathode 1 cm².

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]	-	-	350	K/W
			[1] [3]	-	-	150	K/W
$R_{th(j-sp)}$	thermal resistance from junction to solder point		[4]	-	-	55	K/W

[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.

[2] Device mounted on an FR4 PCB, single-sided copper, tin-plated and standard footprint.

[3] Device mounted on an FR4 PCB, single-sided copper, tin-plated, mounting pad for cathode 1 cm².

[4] Soldering point of cathode tab.

10. Characteristics

Table 7. Characteristics

Symbol	Parameter	Conditions		Min	Typ	Max	Unit
V_F	forward voltage	$I_F = 10 \text{ mA}; t_p \leq 300 \mu\text{s}; \delta \leq 0.02; T_{amb} = 25^\circ\text{C}$		-	240	270	mV
		$I_F = 100 \text{ mA}; t_p \leq 300 \mu\text{s}; \delta \leq 0.02; T_{amb} = 25^\circ\text{C}$		-	300	350	mV
		$I_F = 500 \text{ mA}; t_p \leq 300 \mu\text{s}; \delta \leq 0.02; T_{amb} = 25^\circ\text{C}$		-	400	460	mV
		$I_F = 1 \text{ A}; \text{pulsed}; t_p \leq 300 \mu\text{s}; \delta \leq 0.02; T_{amb} = 25^\circ\text{C}$		-	480	550	mV
I_R	reverse current	$V_R = 5 \text{ V}; \text{pulsed}; T_{amb} = 25^\circ\text{C}$		-	5	10	μA
		$V_R = 8 \text{ V}; T_{amb} = 25^\circ\text{C}$		-	7	20	μA
		$V_R = 10 \text{ V}; T_{amb} = 25^\circ\text{C}$		-	8	30	μA
		$V_R = 15 \text{ V}; T_{amb} = 25^\circ\text{C}$		-	10	50	μA
		$V_R = 20 \text{ V}; T_{amb} = 25^\circ\text{C}$		-	15	70	μA
C_d	diode capacitance	$V_R = 1 \text{ V}; f = 1 \text{ MHz}; T_{amb} = 25^\circ\text{C}$		-	40	50	pF

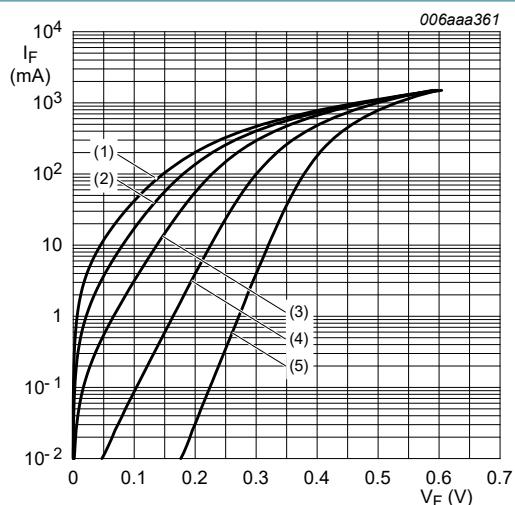


Fig. 1. Forward current as a function of forward voltage; typical values

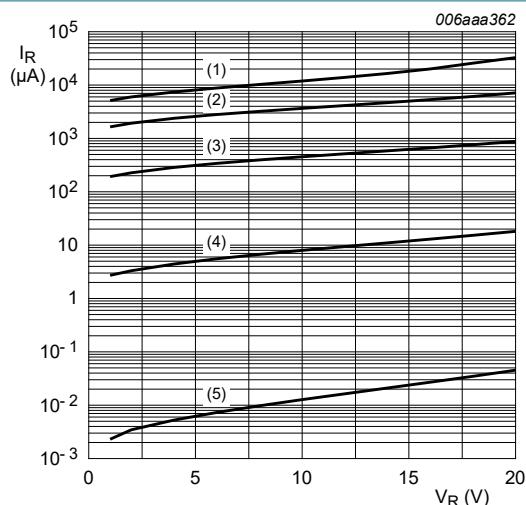
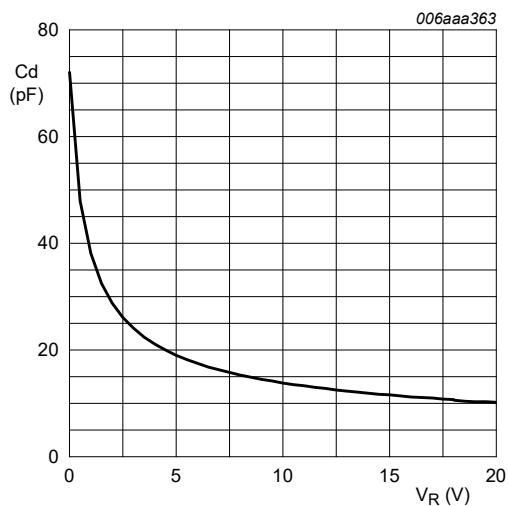


Fig. 2. Reverse current as a function of reverse voltage; typical values



$f = 1$ MHz; $T_{amb} = 25$ °C

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

11. Package outline

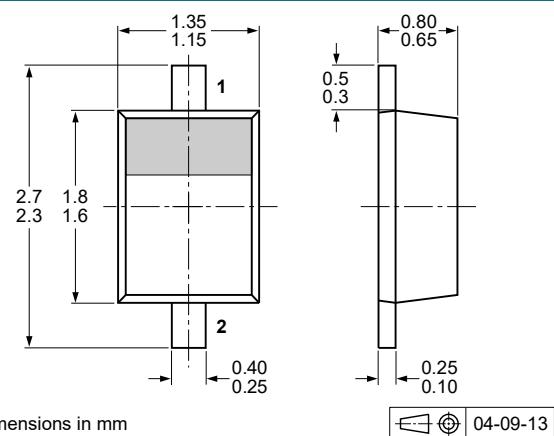
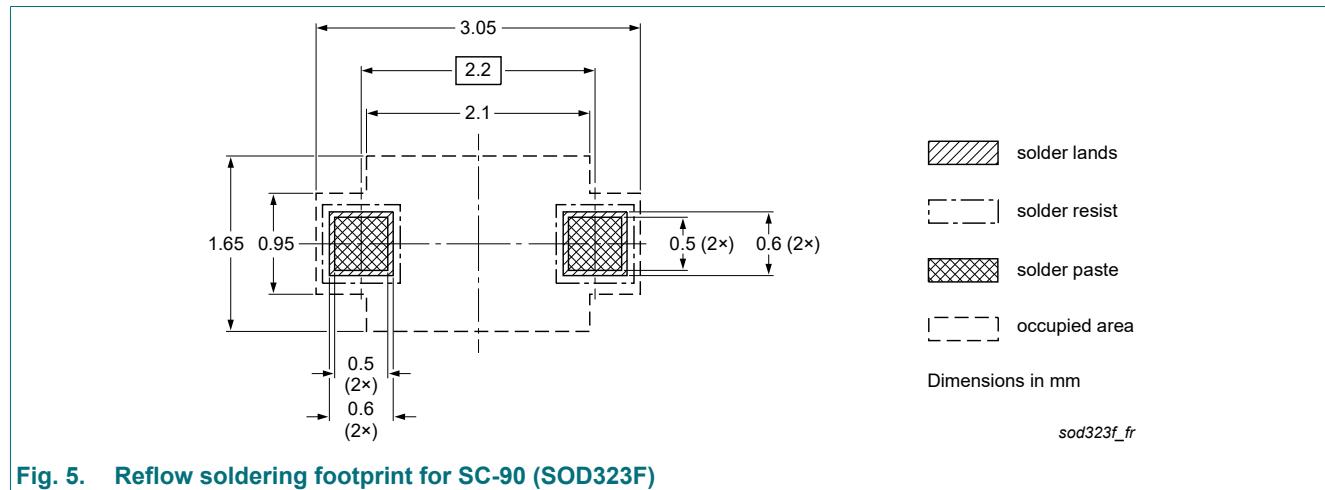


Fig. 4. Package outline SC-90 (SOD323F)

12. Soldering



13. Revision history

Table 8. Revision history

Data sheet ID	Release date	Data sheet status	Change notice	Supersedes
PMEG2010AEJ v.5	20250930	Product data sheet	-	PMEG2010AEJ v.4
Modifications:	<ul style="list-style-type: none">Product(s) changed to non-automotive qualification. Please refer to nexperia.com for automotive (-Q) product alternative(s).			
PMEG2010AEJ v.4	20230830	Product data sheet	-	PMEG2010AEJ_3
PMEG2010AEJ_3	20100115	Product data sheet	-	PMEG2010AEJ_2
PMEG2010AEJ_2	20051014	Product data sheet	-	PMEG2010AEJ_1
PMEG2010AEJ_1	20050302	Product data sheet	-	-

14. 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.

- [1] Please consult the most recently issued document before initiating or completing a design.
- [2] The term 'short data sheet' is explained in section "Definitions".
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