



# PMEG3010EJ

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 SOD323F small Surface-Mounted Device (SMD) plastic package.

## 2. Features and benefits

- Forward current:  $I_F \leq 1$  A
- Reverse voltage:  $V_R \leq 30$  V
- Very low forward voltage
- Small SMD plastic packages

## 3. Applications

- Low voltage rectification
- High efficiency DC-to-DC conversion
- Switch mode power supply
- Reverse 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		-	-	30	V
$V_F$	forward voltage	$I_F = 1$ A; pulsed; $t_p \leq 300$ $\mu$ s; $\delta \leq 0.02$ ; $T_{amb} = 25$ °C	-	450	560	mV

## 5. Pinning information

Table 2. Pinning information

Pin	Symbol	Description	Simplified outline	Graphic symbol
1	K	cathode	 SC-90 (SOD323F)	 sym001
2	A	anode		

6. Ordering information

Table 3. Ordering information

Type number	Package		
	Name	Description	Version
<a href="#">PMEG3010EJ</a>	SC-90	plastic, surface-mounted package; 2 leads; 1.7 mm x 1.25 mm x 0.7 mm body	<a href="#">SOD323F</a>

7. Marking

Table 4. Marking codes

Type number	Marking code
PMEG3010EJ	AK

8. Limiting values

Table 5. Limiting values

In accordance with the Absolute Maximum Rating System (IEC60134)

Symbol	Parameter	Conditions		Min	Max	Unit
V <sub>R</sub>	reverse voltage			-	30	V
I <sub>F</sub>	forward current	T <sub>sp</sub> ≤ 55 °C		-	1	A
I <sub>FRM</sub>	repetitive peak forward current	t <sub>p</sub> ≤ 1 ms; δ ≤ 0.25		-	7	A
I <sub>FSM</sub>	non-repetitive peak forward current	t <sub>p</sub> = 8 ms; square wave		-	9	A
P <sub>tot</sub>	total power dissipation	T <sub>amb</sub> ≤ 25 °C	[1]	-	350	mW
			[2]	-	830	mW
T <sub>j</sub>	junction temperature			-	150	°C
T <sub>amb</sub>	ambient temperature			-65	150	°C
T <sub>stg</sub>	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 cm<sup>2</sup>.

9. Thermal characteristics

Table 6. Thermal characteristics

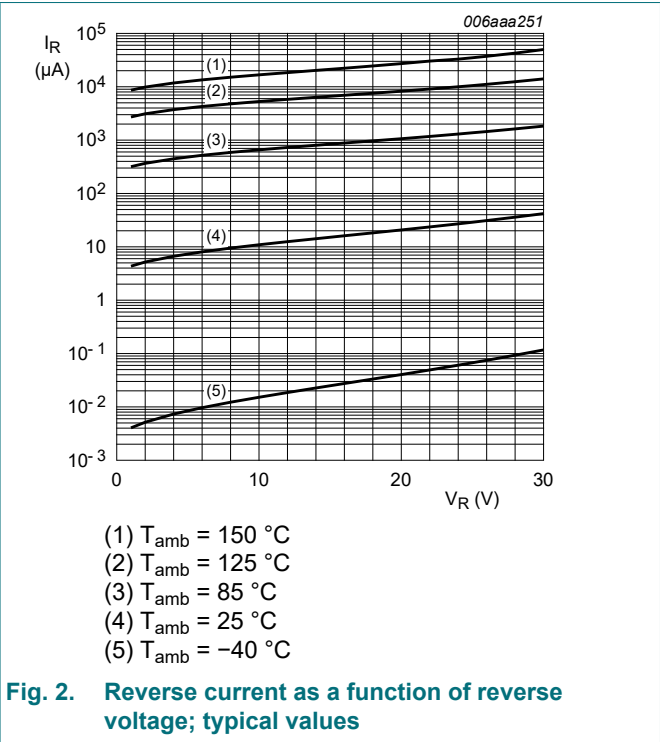
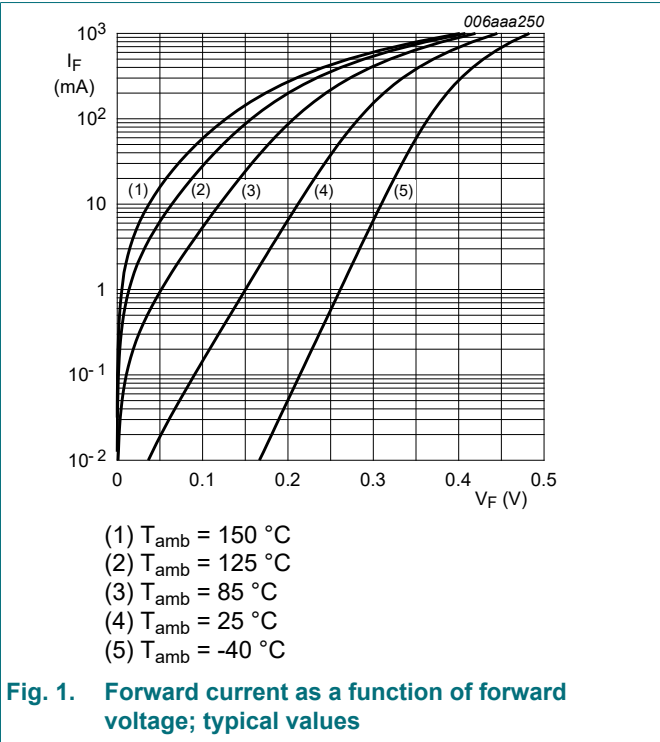
Symbol	Parameter	Conditions		Min	Typ	Max	Unit
R <sub>th(j-a)</sub>	thermal resistance from junction to ambient	in free air	[1] [2]	-	-	350	K/W
			[1] [3]	-	-	150	K/W
R <sub>th(j-sp)</sub>	thermal resistance from junction to solder point		[4]	-	-	55	K/W

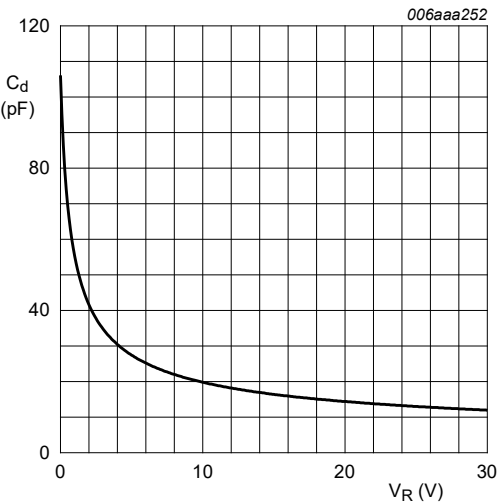
- [1] For Schottky barrier diodes thermal runaway has to be considered, as in some applications, the reverse power losses P<sub>R</sub> are a significant part of the total power losses.
- [2] Device mounted on an FR4 PCB, single-sided copper, tin-plated and standard footprint.
- [3] Device mounted on an FR4 PCB, single-sided copper, tin-plated, mounting pad for cathode 1 cm<sup>2</sup>.
- [4] Soldering point of cathode tab.

10. Characteristics

Table 7. Characteristics

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
V <sub>F</sub>	forward voltage	I <sub>F</sub> = 0.1 mA; pulsed; t <sub>p</sub> ≤ 300 μs; δ ≤ 0.02; T <sub>amb</sub> = 25 °C	-	90	130	mV
		I <sub>F</sub> = 1 mA; pulsed; t <sub>p</sub> ≤ 300 μs; δ ≤ 0.02; T <sub>amb</sub> = 25 °C	-	150	200	mV
		I <sub>F</sub> = 10 mA; pulsed; t <sub>p</sub> ≤ 300 μs; δ ≤ 0.02; T <sub>amb</sub> = 25 °C	-	215	250	mV
		I <sub>F</sub> = 100 mA; pulsed; t <sub>p</sub> ≤ 300 μs; δ ≤ 0.02; T <sub>amb</sub> = 25 °C	-	285	340	mV
		I <sub>F</sub> = 500 mA; pulsed; t <sub>p</sub> ≤ 300 μs; δ ≤ 0.02; T <sub>amb</sub> = 25 °C	-	380	430	mV
		I <sub>F</sub> = 1 A; pulsed; t <sub>p</sub> ≤ 300 μs; δ ≤ 0.02; T <sub>amb</sub> = 25 °C	-	450	560	mV
I <sub>R</sub>	reverse current	V <sub>R</sub> = 10 V; pulsed; t <sub>p</sub> ≤ 300 μs; δ ≤ 0.02; T <sub>amb</sub> = 25 °C	-	12	30	μA
		V <sub>R</sub> = 30 V; pulsed; t <sub>p</sub> ≤ 300 μs; δ ≤ 0.02; T <sub>amb</sub> = 25 °C	-	40	150	μA
C <sub>d</sub>	diode capacitance	V <sub>R</sub> = 1 V; f = 1 MHz; T <sub>amb</sub> = 25 °C	-	55	70	pF





$f = 1\text{ MHz}$ ;  $T_{\text{amb}} = 25\text{ }^{\circ}\text{C}$

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

11. Test information

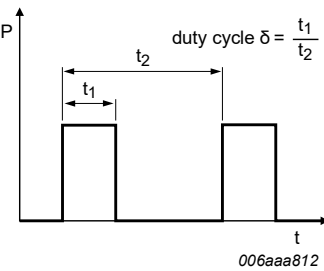


Fig. 4. Duty cycle definition

12. Package outline

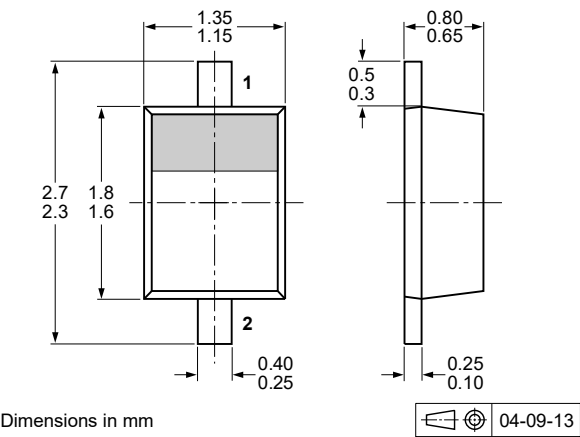
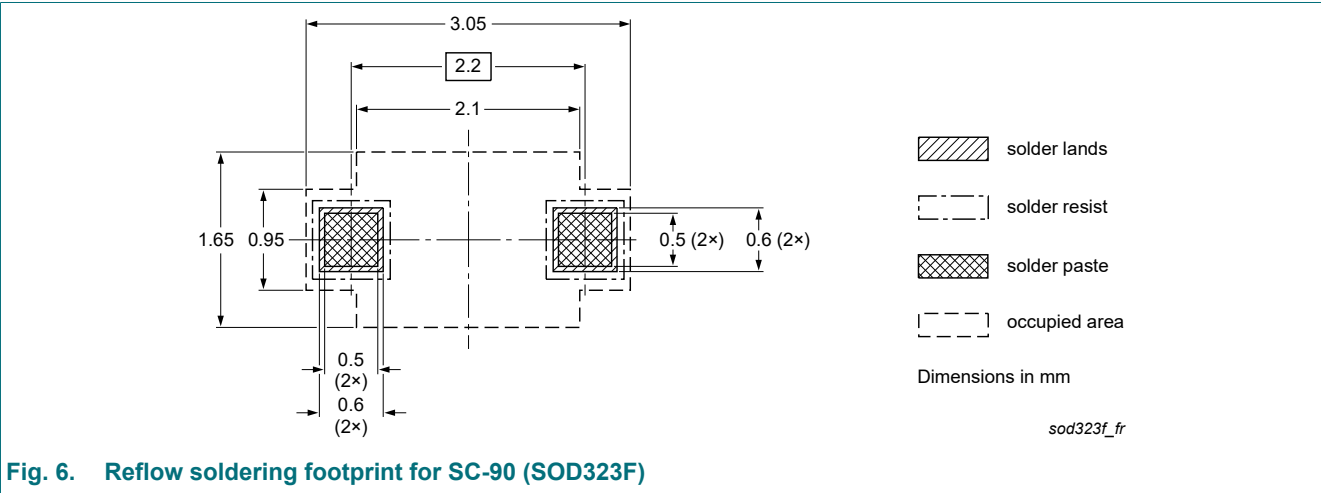


Fig. 5. Package outline SC-90 (SOD323F)

13. Soldering



14. Revision history

Table 8. Revision history

Data sheet ID	Release date	Data sheet status	Change notice	Supersedes
PMEG3010EJ v.6	20250930	Product data sheet		PMEG3010EJ v.5
Modifications:	<ul style="list-style-type: none"><li>Product(s) changed to non-automotive qualification. Please refer to nexperia.com for automotive (-Q) product alternative(s).</li></ul>			
PMEG3010EJ v.5	20231016	Product data sheet		PMEG3010EH_EJ_ET_4
PMEG3010EH_EJ_ET_4	20070320	Product data sheet	-	PMEGXX10EH_EJ_SER_3
PMEGXX10EH_EJ_SER_3	20050411	Preliminary data sheet	-	PMEGXX10EJ_SER_2
PMEGXX10EJ_SER_2	20050131	Product data sheet	-	PMEG2020EJ_1
PMEGXX10EJ_SER_1	20040907	Objective 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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- [2] The term 'short data sheet' is explained in section "Definitions".
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