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Electronic Components Sourcing Information

Product Reference Information

Part Number: PMEG4002ELD,315
Manufacturer: Nexperia USA Inc.
Package: 2-XDFN
Availability: Please confirm with sales

Product Page:

<https://antrexco.com/product/details/nexperia-usa-inc/pmeg4002eld-315.html>

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Note:

This PDF includes an ANTREX product reference cover page.

The original manufacturer datasheet follows from the next page.



PMEG4002ELD

40 V, 0.2 A low VF Schottky barrier rectifier

13 August 2026

Product data sheet

1. General description

Planar Schottky barrier rectifier with an integrated guard ring for stress protection, encapsulated in a SOD882D leadless ultra small Surface-Mounted Device (SMD) plastic package with visible and solderable side pads.

2. Features and benefits

- Forward current: $I_F \leq 0.2$ A
- Reverse voltage: $V_R \leq 40$ V
- Low forward voltage: $V_F \leq 600$ mV
- Ultra small and leadless SMD plastic package
- Solderable side pads
- Package height typ. 0.37 mm

3. Applications

- Low voltage rectification
- High efficiency DC-to-DC conversion
- Switch Mode Power Supply (SMPS)
- Reverse polarity protection
- Low power consumption applications
- Ultra high-speed switching

4. Quick reference data

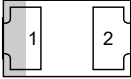
Table 1. Quick reference data

Symbol	Parameter	Conditions		Min	Typ	Max	Unit
$I_{F(AV)}$	average forward current	$\delta = 0.5$; $f = 20$ kHz; $T_{amb} \leq 120$ °C; square wave	[1]	-	-	0.2	A
		$\delta = 0.5$; $f = 20$ kHz; $T_{sp} \leq 140$ °C; square wave		-	-	0.2	A
I_R	reverse current	$V_R = 25$ V; $T_{amb} = 25$ °C		-	0.3	0.5	μ A
V_R	reverse voltage	$T_j = 25$ °C		-	-	40	V
V_F	forward voltage	$I_F = 200$ mA; $t_p \leq 300$ μ s; $\delta \leq 0.02$; $T_{amb} = 25$ °C		-	540	600	mV

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

5. Pinning information

Table 2. Pinning information

Pin	Symbol	Description	Simplified outline	Graphic symbol
1	K	cathode[1]	 Transparent top view DFN1006D-2 (SOD882D)	 <i>sym001</i>
2	A	anode		

[1] The marking bar indicates the cathode.

6. Ordering information

Table 3. Ordering information

Type number	Package		
	Name	Description	Version
PMEG4002ELD	DFN1006D-2	leadless ultra small plastic package with side-wettable flanks (SWF); 2 terminals; 0.65 mm pitch; 1 mm x 0.6 mm x 0.4 mm body	SOD882D

7. Marking

Table 4. Marking codes

Type number	Marking code
PMEG4002ELD	1011 0000

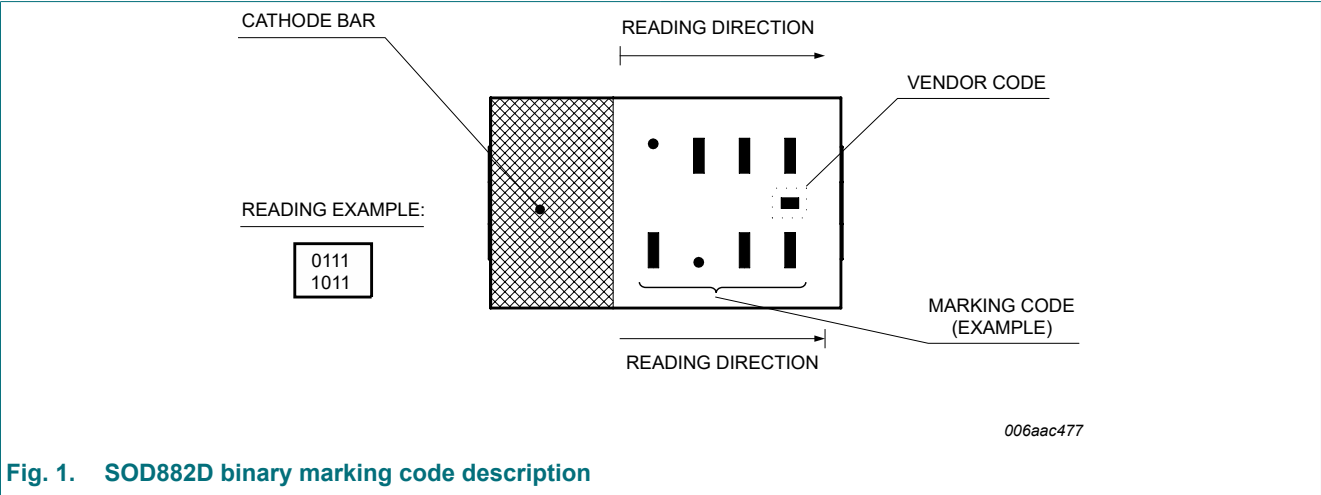


Fig. 1. SOD882D binary marking code description

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	$T_j = 25\text{ }^{\circ}\text{C}$		-	40	V
$I_{F(AV)}$	average forward current	$\delta = 0.5$; $f = 20\text{ kHz}$; $T_{amb} \leq 120\text{ }^{\circ}\text{C}$; square wave	[1]	-	0.2	A
		$\delta = 0.5$; $f = 20\text{ kHz}$; $T_{sp} \leq 140\text{ }^{\circ}\text{C}$; square wave		-	0.2	A
I_{FRM}	repetitive peak forward current	$t_p \leq 1\text{ ms}$; $\delta \leq 0.25$		-	1	A
I_{FSM}	non-repetitive peak forward current	$t_p = 8\text{ ms}$; square wave; $T_{j(init)} = 25\text{ }^{\circ}\text{C}$		-	3	A
P_{tot}	total power dissipation	$T_{amb} \leq 25\text{ }^{\circ}\text{C}$	[2]	-	0.34	W
			[3]	-	0.66	W
			[4]	-	1	W
T_j	junction temperature			-	150	$^{\circ}\text{C}$
T_{amb}	ambient temperature			-55	150	$^{\circ}\text{C}$
T_{stg}	storage temperature			-65	150	$^{\circ}\text{C}$

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

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

[3] Device mounted on an FR4 Printed-Circuit Board (PCB), single-sided copper, tin-plated, mounting pad for cathode 1 cm^2 .

[4] Device mounted on a ceramic PCB, Al_2O_3 , standard footprint.

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] [3]	-	-	370	K/W
			[1] [4] [3]	-	-	190	K/W
			[1] [5] [3]	-	-	125	K/W
$R_{th(j-sp)}$	thermal resistance from junction to solder point		[6]	-	-	50	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.

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

[3] Reflow soldering is the only recommended soldering method.

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

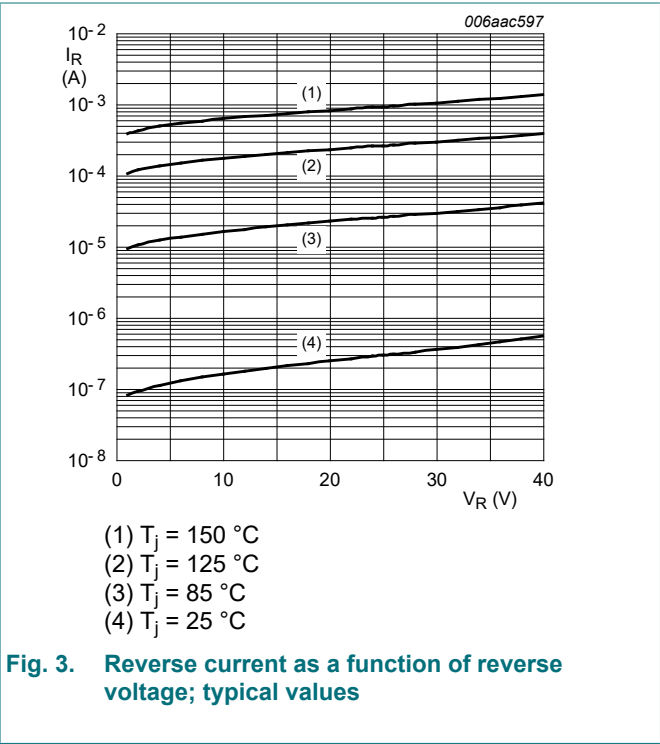
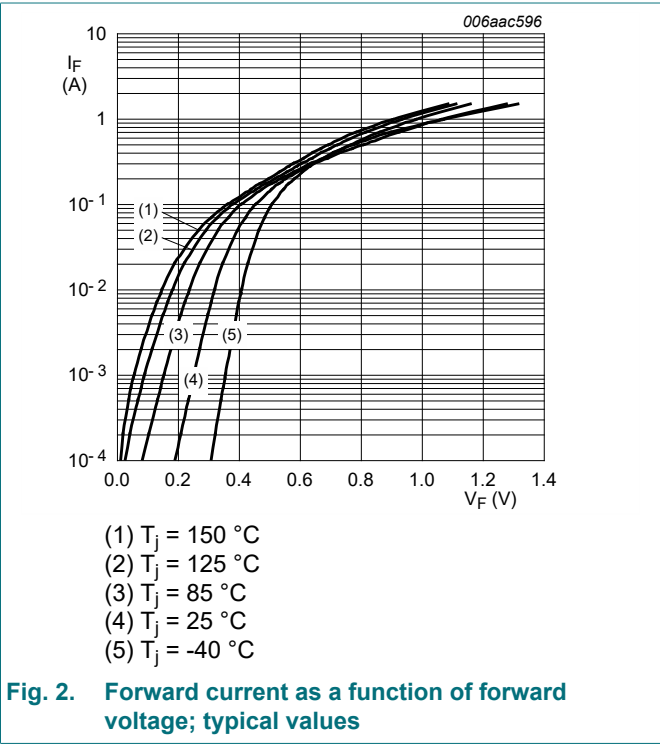
[5] Device mounted on a ceramic PCB, Al_2O_3 , standard footprint.

[6] Soldering 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; pulsed; t _p ≤ 300 μs; δ ≤ 0.02; T _{amb} = 25 °C	-	190	220	mV
		I _F = 1 mA; pulsed; t _p ≤ 300 μs; δ ≤ 0.02; T _j = 25 °C	-	250	290	mV
		I _F = 10 mA; pulsed; t _p ≤ 300 μs; δ ≤ 0.02; T _{amb} = 25 °C	-	320	360	mV
		I _F = 100 mA; t _p ≤ 300 μs; δ ≤ 0.02; T _{amb} = 25 °C	-	450	500	mV
		I _F = 200 mA; t _p ≤ 300 μs; δ ≤ 0.02; T _{amb} = 25 °C	-	540	600	mV
I _R	reverse current	V _R = 25 V; T _{amb} = 25 °C	-	0.3	0.5	μA
		V _R = 40 V; T _{amb} = 25 °C	-	0.6	10	μA
C _d	diode capacitance	V _R = 1 V; f = 1 MHz; T _{amb} = 25 °C	-	14	20	pF
t _{rr}	reverse recovery time	I _F = 10 mA; I _R = 10 mA; I _{R(meas)} = 1 mA; R _L = 100 Ω; T _j = 25 °C	-	4	-	ns



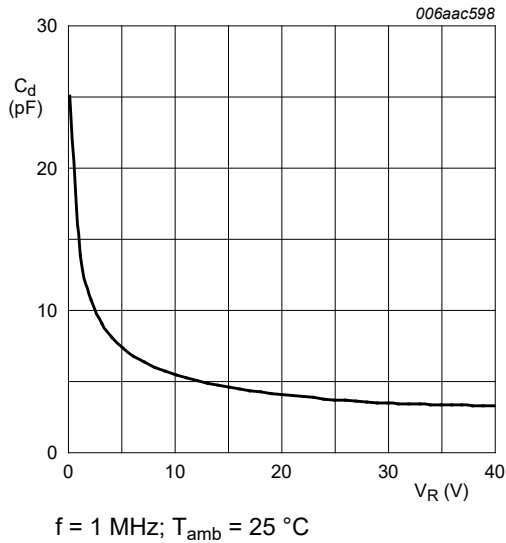


Fig. 4. Diode capacitance as a function of reverse voltage; typical values

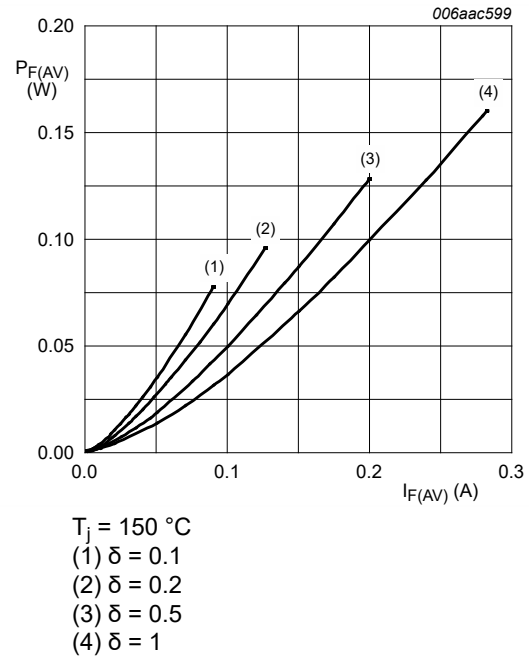


Fig. 5. Average forward power dissipation as a function of average forward current; typical values

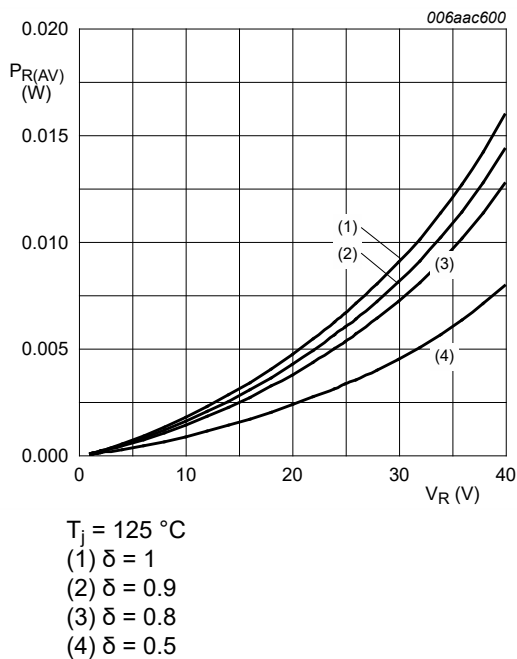


Fig. 6. Average reverse power dissipation as a function of reverse voltage; typical values

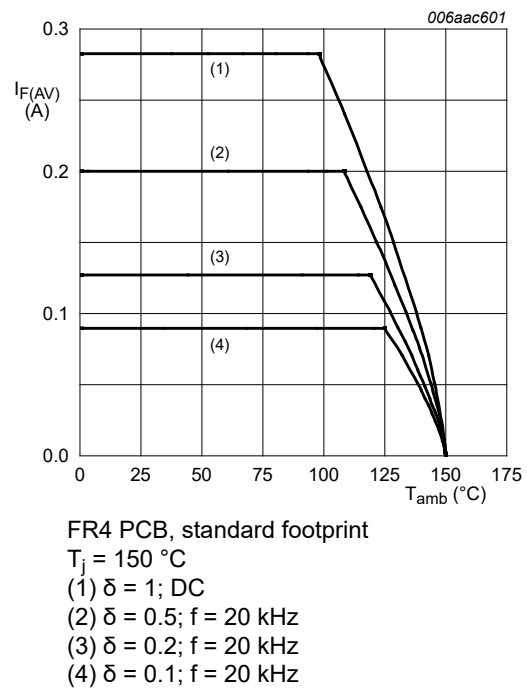
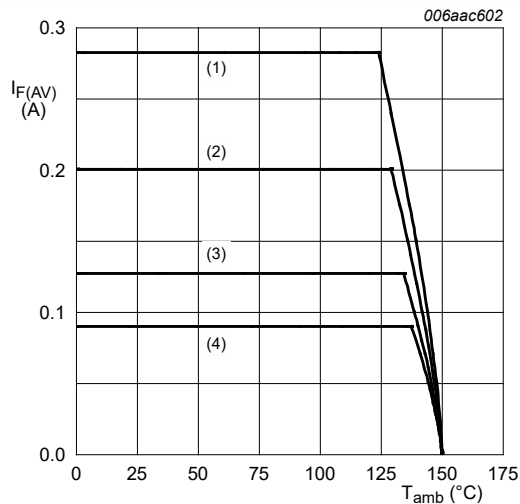
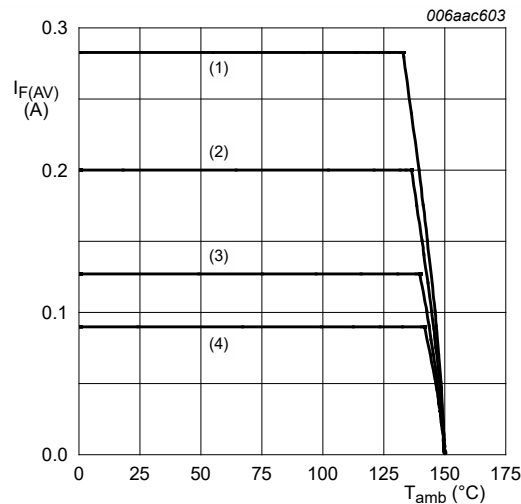


Fig. 7. Average forward current as a function of ambient temperature; typical values



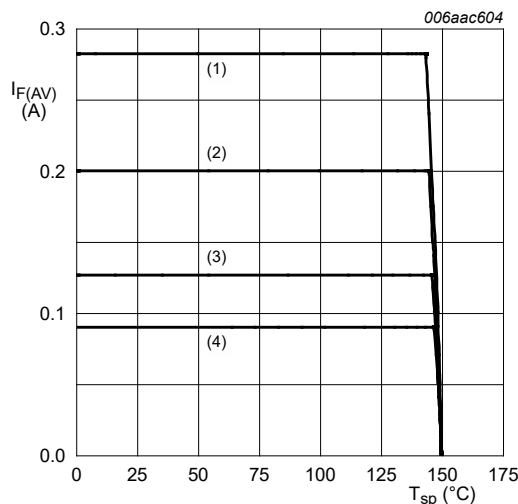
FR4 PCB, mounting pad for cathode 1 cm²
 $T_j = 150$ °C
(1) $\delta = 1$; DC
(2) $\delta = 0.5$; $f = 20$ kHz
(3) $\delta = 0.2$; $f = 20$ kHz
(4) $\delta = 0.1$; $f = 20$ kHz

Fig. 8. Average forward current as a function of ambient temperature; typical values



Ceramic PCB, Al₂O₃, standard footprint
 $T_j = 150$ °C
(1) $\delta = 1$; DC
(2) $\delta = 0.5$; $f = 20$ kHz
(3) $\delta = 0.2$; $f = 20$ kHz
(4) $\delta = 0.1$; $f = 20$ kHz

Fig. 9. Average forward current as a function of ambient temperature; typical values



$T_j = 150$ °C
(1) $\delta = 1$; DC
(2) $\delta = 0.5$; $f = 20$ kHz
(3) $\delta = 0.2$; $f = 20$ kHz
(4) $\delta = 0.1$; $f = 20$ kHz

Fig. 10. Average forward current as a function of solder point temperature; typical values

11. Test information

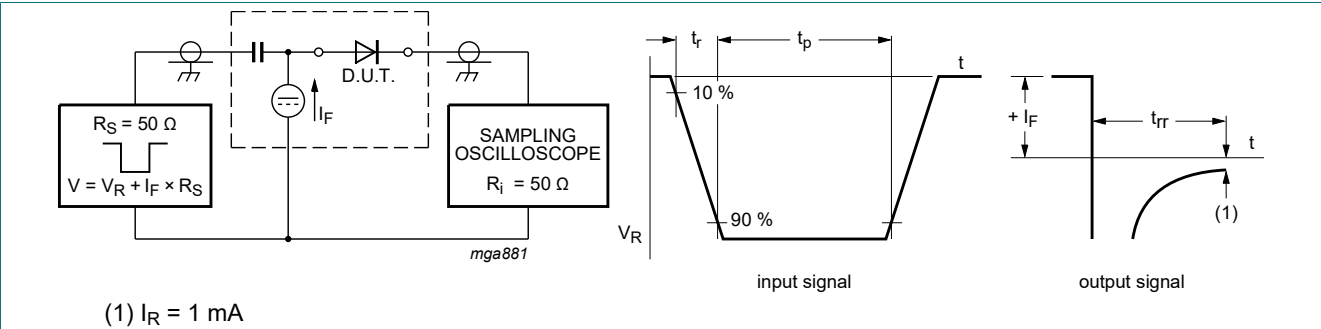


Fig. 11. Reverse recovery time: test circuit and waveforms

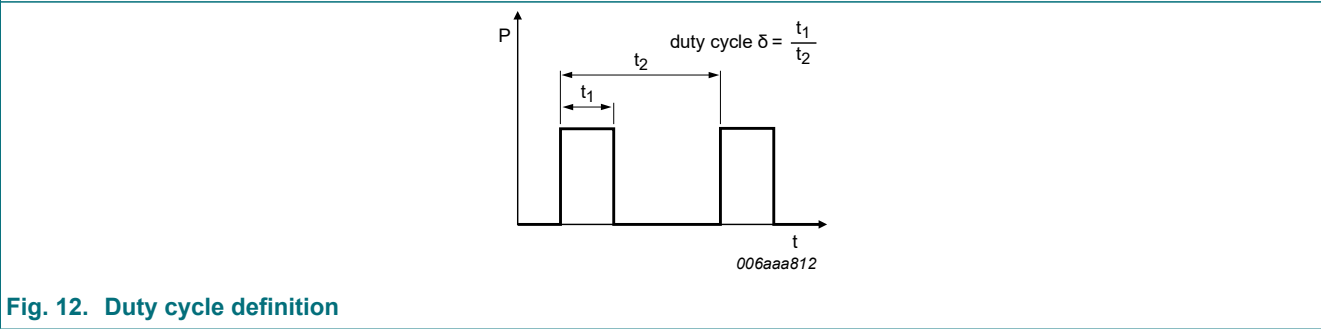


Fig. 12. Duty cycle definition

The current ratings for the typical waveforms are calculated according to the equations:

$I_{F(AV)} = I_M \times \delta$ with I_M defined as peak current

$I_{RMS} = I_{F(AV)}$ at DC

$I_{RMS} = I_M \times \sqrt{\delta}$ with I_{RMS} defined as RMS current

12. Package outline

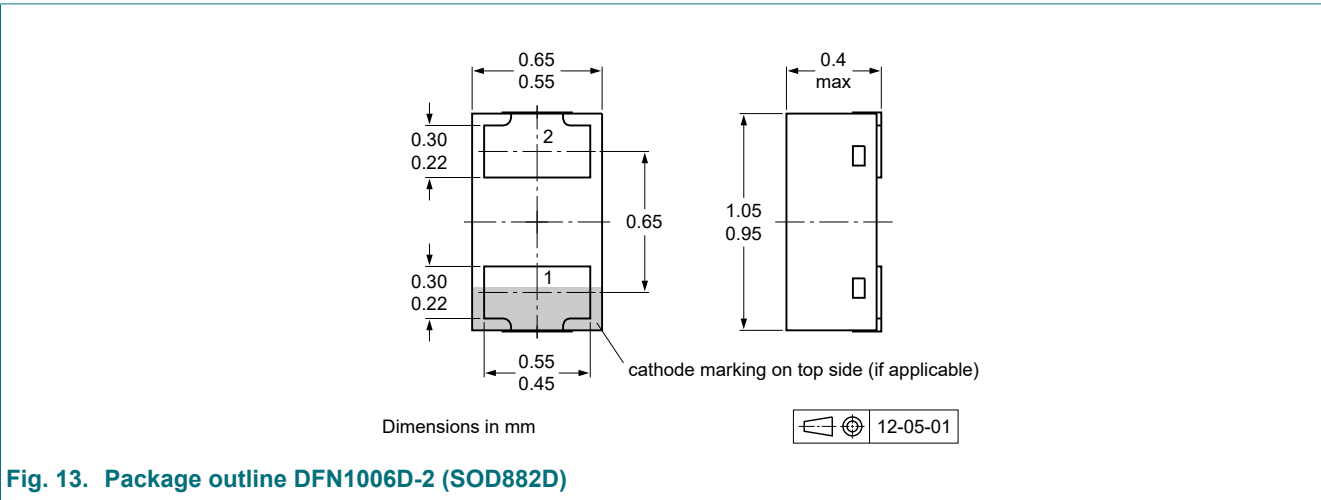


Fig. 13. Package outline DFN1006D-2 (SOD882D)

13. Soldering

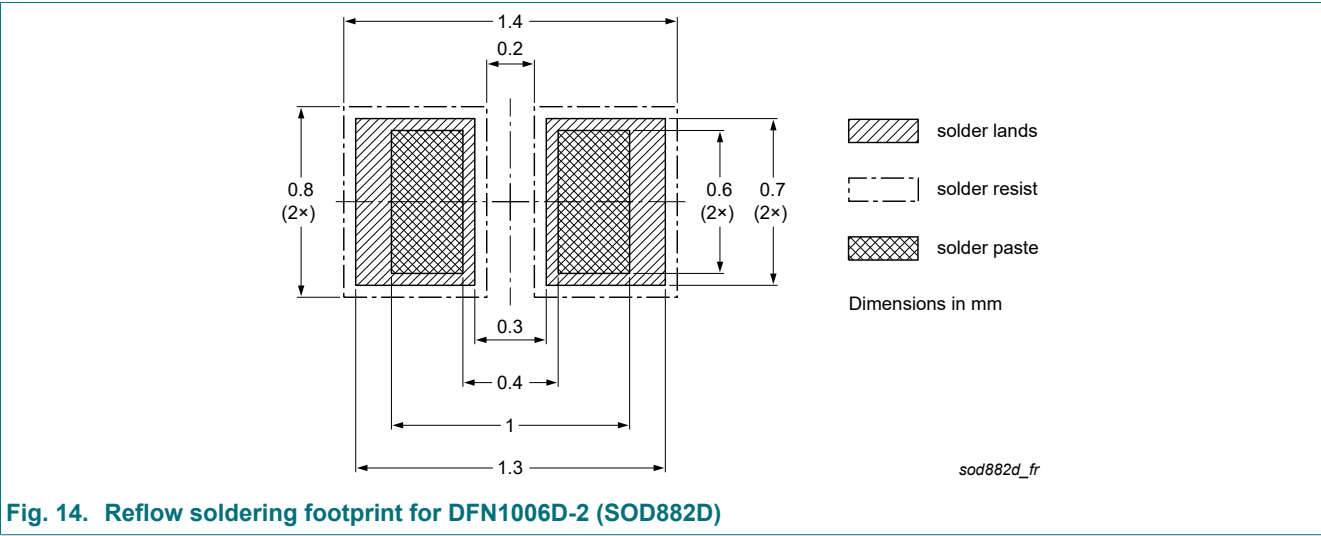


Fig. 14. Reflow soldering footprint for DFN1006D-2 (SOD882D)

14. Revision history

Table 8. Revision history

Data sheet ID	Release date	Data sheet status	Change notice	Supersedes
PMEG4002ELD v.2	20260813	Product data sheet	-	PMEG4002ELD v.1
Modification:	- Product(s) changed to non-automotive qualification. Please refer to nexperia.com for automotive (-Q) product alternative(s). - Section "Packing information" removed.			
PMEG4002ELD v.1	20110420	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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- [2] The term 'short data sheet' is explained in section "Definitions".
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