1PS10SB82

Schottky barrier diode

13 November 2019 **Product data sheet**

1. General description

An epitaxial Schottky barrier diode encapsulated in a SOD882 leadless ultra small plastic package.

ESD sensitive device, observe handling precautions.

2. Features and benefits

- Low forward voltage
- Low diode capacitance
- Leadless ultra small plastic package (1.0 mm x 0.6 mm x 0.48 mm)
- Boardspace 1.17 mm² (approx. 10 % of SOT23)
- Power dissipation comparable to SOT23

3. Applications

- UHF mixers
- Sampling circuits
- Modulators
- Phase detectors
- Mobile devices

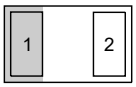
4. Quick reference data

Table 1. Quick reference data

Symbol	Parameter	Conditions		Min	Typ	Max	Unit
V_R	reverse voltage			-	-	15	V
V_F	forward voltage	I_F = 30 mA; $t_p \leq$ 300 µs; $\delta \leq$ 0.02; T_{amb} = 25 °C		-	-	700	mV

5. Pinning information

Table 2. Pinning information

Pin	Symbol	Description	Simplified outline	Graphic symbol
1	K	cathode[1]	 Transparent top view **DFN1006-2 (SOD882)**	 *aaa-003679*
2	A	anode		

[1] The marking bar indicates the cathode.

6. Ordering information

Table 3. Ordering information

Type number	Package		
	Name	Description	Version
1PS10SB82	DFN1006-2	plastic, leadless ultra small package; 2 terminals; 0.65 mm pitch; 1 mm x 0.6 mm x 0.48 mm body	SOD882

7. Marking

Table 4. Marking codes

Type number	Marking code
1PS10SB82	S5

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			-	15	V
I_F	forward current			-	30	mA
T_j	junction temperature			-	150	°C
T_{amb}	ambient temperature			-55	150	°C
T_{stg}	storage temperature			-65	150	°C

9. Thermal characteristics

Table 6. Thermal characteristics

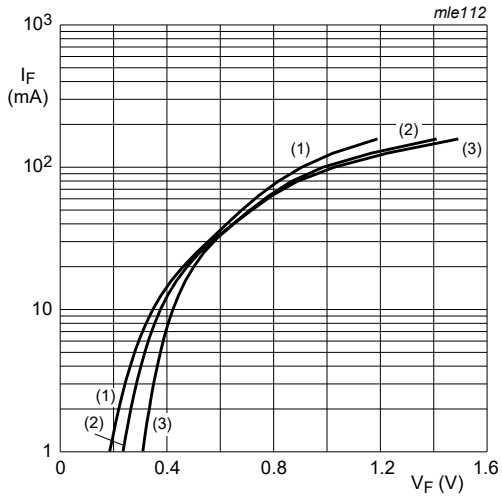
Symbol	Parameter	Conditions		Min	Typ	Max	Unit
$R_{th(j-a)}$	thermal resistance from junction to ambient	in free air	[1]	-	-	500	K/W

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

10. Characteristics

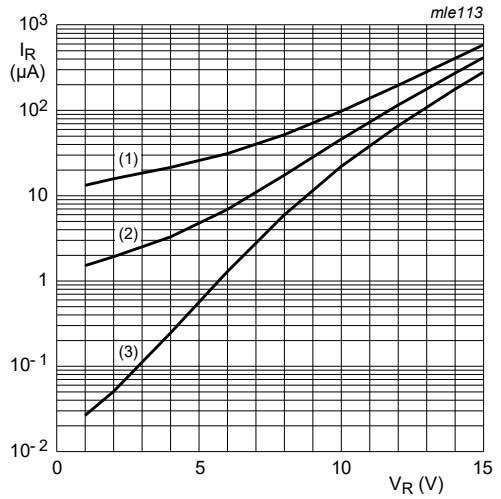
Table 7. Characteristics

Symbol	Parameter	Conditions		Min	Typ	Max	Unit
V_F	forward voltage	I_F = 1 mA; $t_p \leq$ 300 µs; $\delta \leq$ 0.02; T_{amb} = 25 °C		-	-	340	mV
		I_F = 30 mA; $t_p \leq$ 300 µs; $\delta \leq$ 0.02; T_{amb} = 25 °C		-	-	700	mV
r_{dif}	differential resistance	f = 1 MHz; I_F = 5 mA		-	12	-	Ω
I_R	reverse current	V_R = 1 V; t_p = 300 µs; δ = 0.02; pulsed; T_j = 25 °C		-	-	0.2	µA
C_d	diode capacitance	V_R = 0 V; f = 1 MHz; T_{amb} = 25 °C		-	1	-	pF
I_{RM}	peak reverse recovery current	I_F = 5 mA; T_{amb} = 25 °C; f = 1 MHz		12	-	-	A



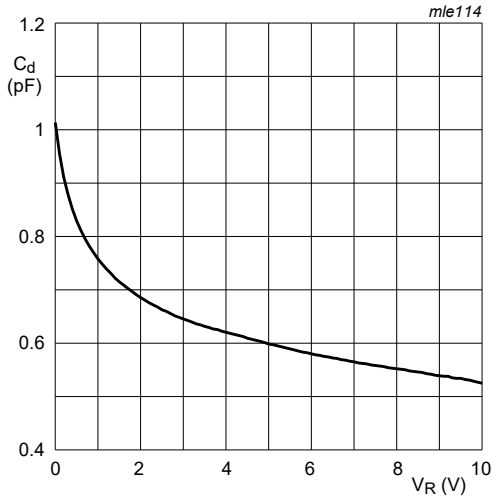
(1) T_{amb} = 125 °C
(2) T_{amb} = 85 °C
(3) T_{amb} = 25 °C

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



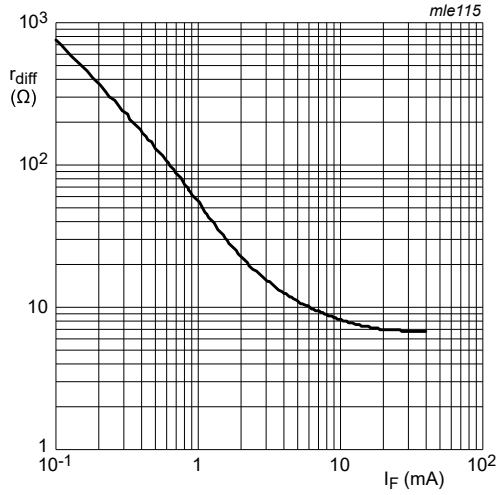
(1) T_{amb} = 125 °C
(2) T_{amb} = 85 °C
(3) T_{amb} = 25 °C

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



f = 1 MHz; T_{amb} = 25 °C

Fig. 4. Differential diode forward resistance as a function of forward current; typical values

11. Package outline

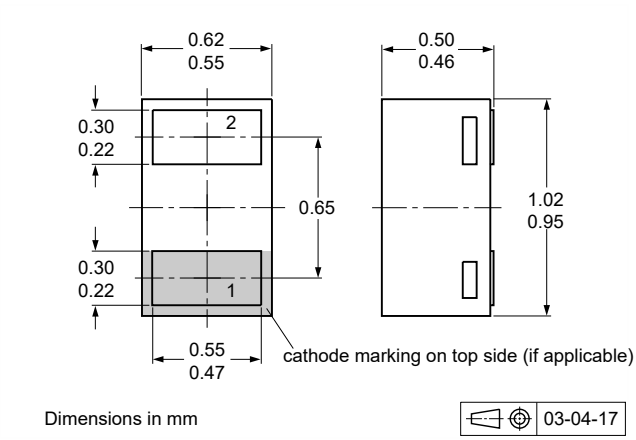


Fig. 5. Package outline DFN1006-2 (SOD882)

12. Soldering

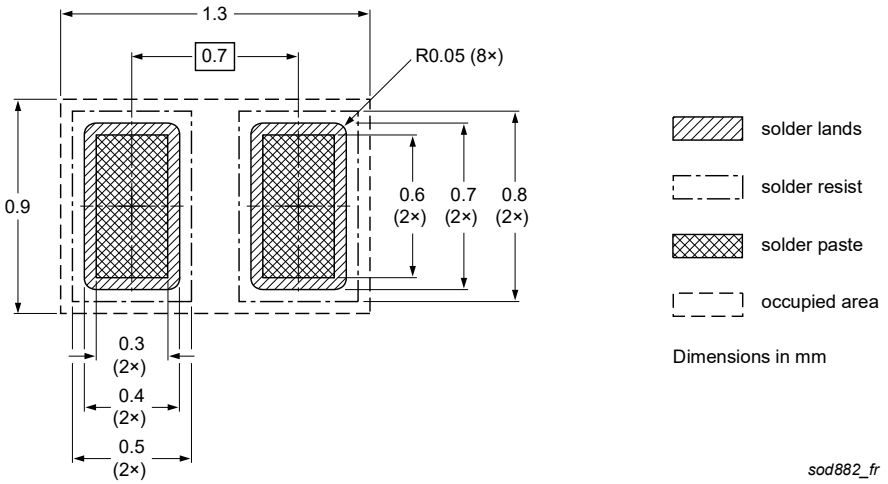


Fig. 6. Reflow soldering footprint for DFN1006-2 (SOD882)

13. Revision history

Table 8. Revision history

Data sheet ID	Release date	Data sheet status	Change notice	Supersedes
1PS10SB82 v.2	20191113	Product data sheet	-	1PS10SB82 v.1
Modifications:	• The format of this data sheet has been redesigned to comply with the identity guidelines of Nexperia. • Legal texts have been adapted to the new company name where appropriate.			
1PS10SB82 v.1	20030820	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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Date of release: 13 November 2019

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