



1PS79SB31

Schottky barrier diode

1 July 2023

Product data sheet

1. General description

Planar Schottky barrier diode in a SOD523 (SC-79) ultra small Surface-Mounted Device (SMD) plastic package.

2. Features and benefits

- Very low forward voltage
- Guard ring protected
- Ultra small SMD package

3. Applications

- Ultra high-speed switching
- Voltage clamping
- Protection circuits
- Low current rectification
- Low power consumption applications (e.g. hand-held devices)

4. Quick reference data

Table 1. Quick reference data

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
I_F	forward current		-	-	200	mA
V_R	reverse voltage		-	-	30	V
V_F	forward voltage	$I_F = 10 \text{ mA}; T_{\text{amb}} = 25 \text{ }^\circ\text{C}$	255	-	300	mV

5. Pinning information

Table 2. Pinning information

Pin	Symbol	Description	Simplified outline	Graphic symbol
1	K	cathode[1]	 SC-79 (SOD523)	 K A 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
1PS79SB31	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
1PS79SB31	G3

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		-	30	V
I_F	forward current		-	200	mA
I_{FRM}	repetitive peak forward current	$t_p \leq 1 \text{ s}$; $\delta \leq 0.5$	-	300	mA
I_{FSM}	non-repetitive peak forward current	$t_p = 8.3 \text{ ms}$; half sine wave; JEDEC method; $T_{j(\text{init})} = 25 \text{ }^\circ\text{C}$	-	1	A
T_j	junction temperature		-	125	$^\circ\text{C}$
T_{amb}	ambient temperature		-65	125	$^\circ\text{C}$
T_{stg}	storage temperature		-65	150	$^\circ\text{C}$

9. Thermal characteristics

Table 6. Thermal characteristics

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
$R_{\text{th}(j-a)}$	thermal resistance from junction to ambient	in free air	[1]	-	450	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 = 0.1 mA; T _{amb} = 25 °C	130	-	190	mV
		I _F = 1 mA; T _{amb} = 25 °C	190	-	250	mV
		I _F = 10 mA; T _{amb} = 25 °C	255	-	300	mV
		I _F = 100 mA; T _{amb} = 25 °C	355	-	410	mV
		I _F = 200 mA; T _{amb} = 25 °C	420	-	500	mV
I _R	reverse current	V _R = 10 V; t _p = 300 μs; δ = 0.02; pulsed; T _{amb} = 25 °C	-	2.5	30	μA
C _d	diode capacitance	V _R = 1 V; f = 1 MHz; T _{amb} = 25 °C	20	-	25	pF

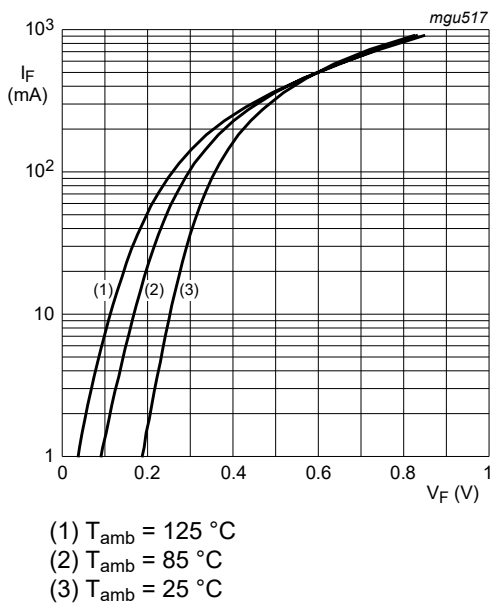


Fig. 1. Forward current as a function of forward voltage; typical values

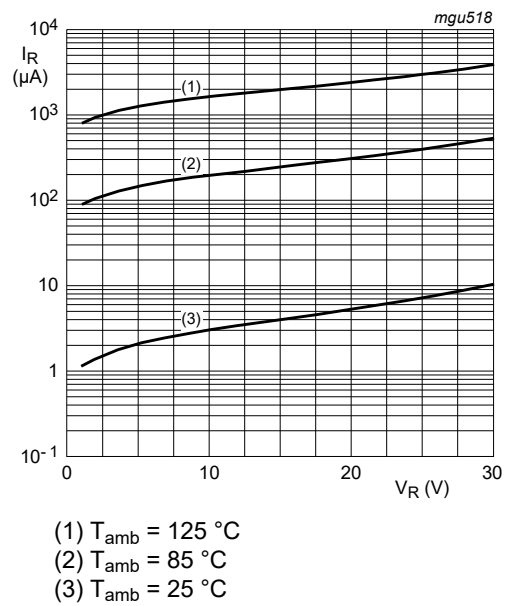
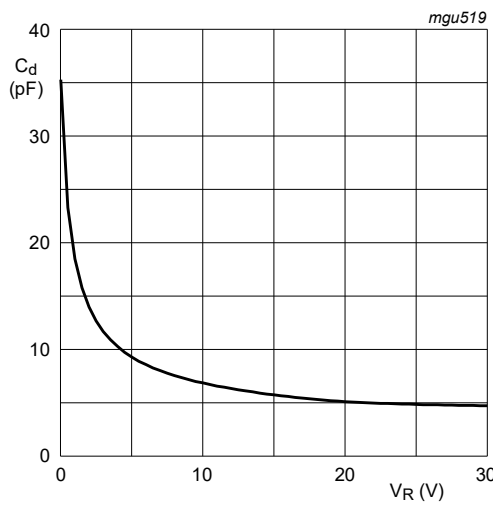


Fig. 2. Reverse current as a function of reverse voltage; typical values



f = 1 MHz; T_{amb} = 25 °C

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

11. Package outline

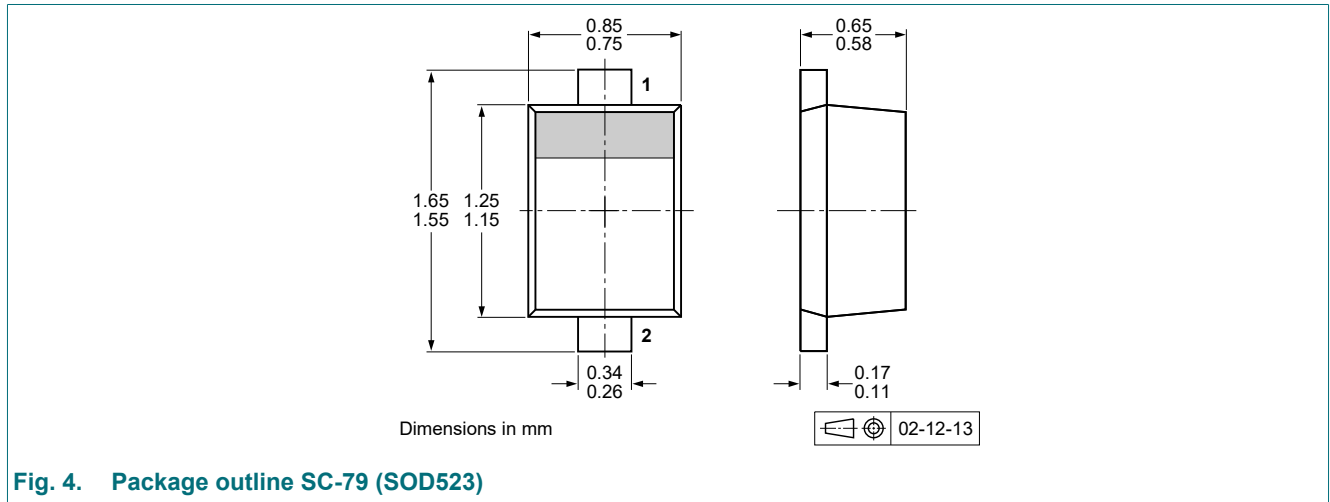


Fig. 4. Package outline SC-79 (SOD523)

12. Soldering

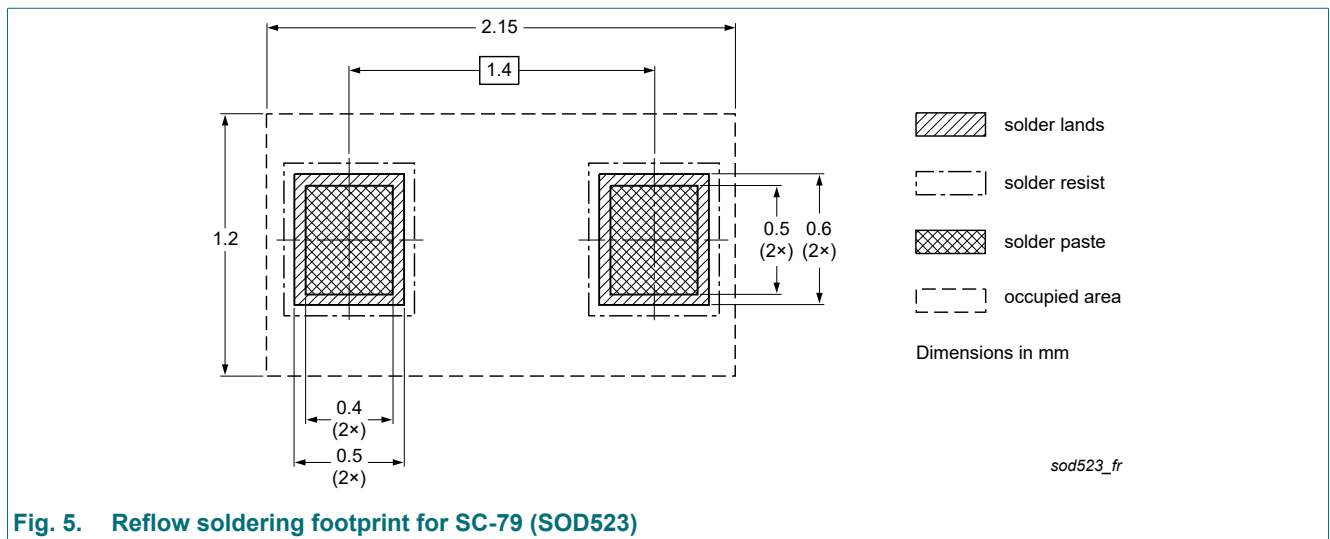


Fig. 5. Reflow soldering footprint for SC-79 (SOD523)

13. Revision history

Table 8. Revision history

Data sheet ID	Release date	Data sheet status	Change notice	Supersedes
1PS79SB31 v.2	20230701	Product data sheet	-	1PS79SB31 v.1
Modifications:	<ul style="list-style-type: none">• 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.• Product changed to non-automotive qualification. Please refer to nexperia.com for automotive (-Q) product alternative(s).			
1PS79SB31 v.1	20020111	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".
- [3] The product status of device(s) described in this document may have changed since this document was published and may differ in case of multiple devices. The latest product status information is available on the internet at <https://www.nexperia.com>.

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Contents

1. General description.....	1
2. Features and benefits.....	1
3. Applications.....	1
4. Quick reference data.....	1
5. Pinning information.....	1
6. Ordering information.....	2
7. Marking.....	2
8. Limiting values.....	2
9. Thermal characteristics.....	2
10. Characteristics.....	3
11. Package outline.....	4
12. Soldering.....	4
13. Revision history.....	5
14. Legal information.....	6

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