



**THE DATASHEET OF
1PS79SB30,115**





1PS79SB30

40 V, 0.2 A Schottky barrier diode

1 January 2023

Product data sheet

1. General description

Planar Schottky barrier diode with an integrated guard ring for stress protection, encapsulated in a SOD523 (SC-79) ultra small Surface-Mounted Device (SMD) plastic package.

2. Features and benefits

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

3. Applications

- Ultra high-speed switching
- Voltage clamping
- Blocking diodes

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 | | - | - | 40 | V |
| V_F | forward voltage | $I_F = 10 \text{ mA}; T_{\text{amb}} = 25 \text{ }^\circ\text{C}$ | - | 320 | 360 | 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 |
| 1PS79SB30 | 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 |
|-------------|--------------|
| 1PS79SB30 | G1 |

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 | | - | 40 | V |
| I_F | forward current | | - | 200 | mA |
| I_{FRM} | repetitive peak forward current | $t_p \leq 1$ s; $\delta \leq 0.5$ | - | 300 | mA |
| I_{FSM} | non-repetitive peak forward current | $t_p = 8.3$ ms; half sine wave; $T_{j(\text{init})} = 25$ °C | - | 1 | A |
| T_j | junction temperature | | - | 150 | °C |
| T_{amb} | ambient temperature | | -65 | 150 | °C |
| T_{stg} | storage temperature | | -65 | 150 | °C |

9. Thermal characteristics

Table 6. Thermal characteristics

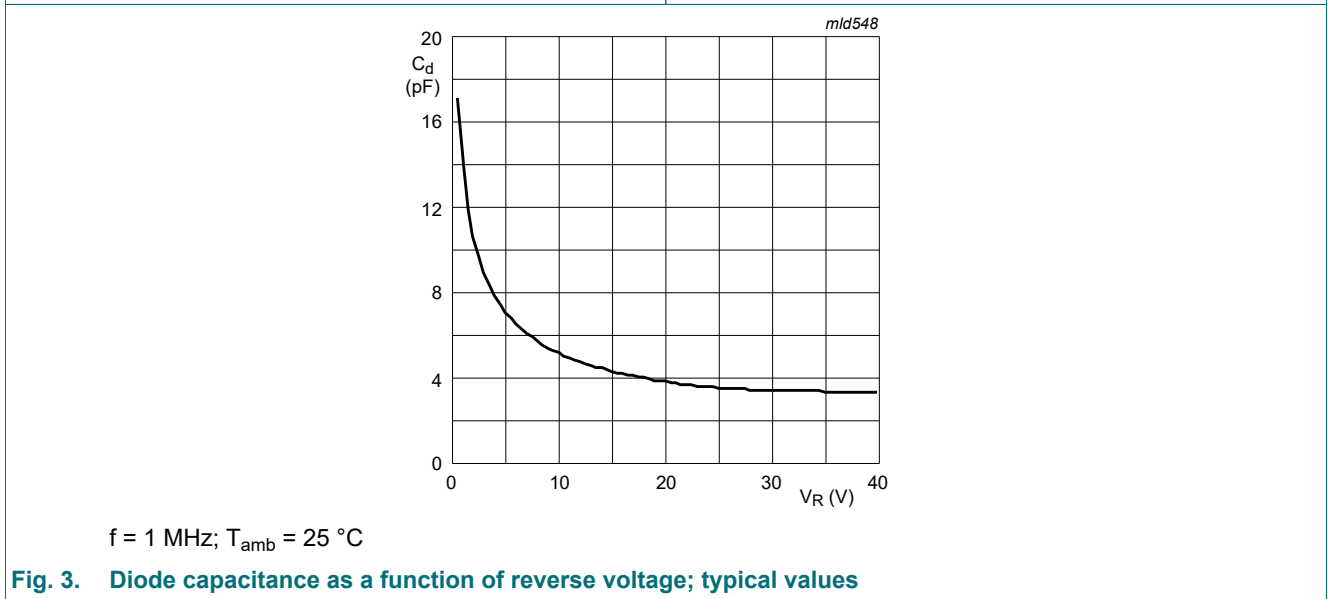
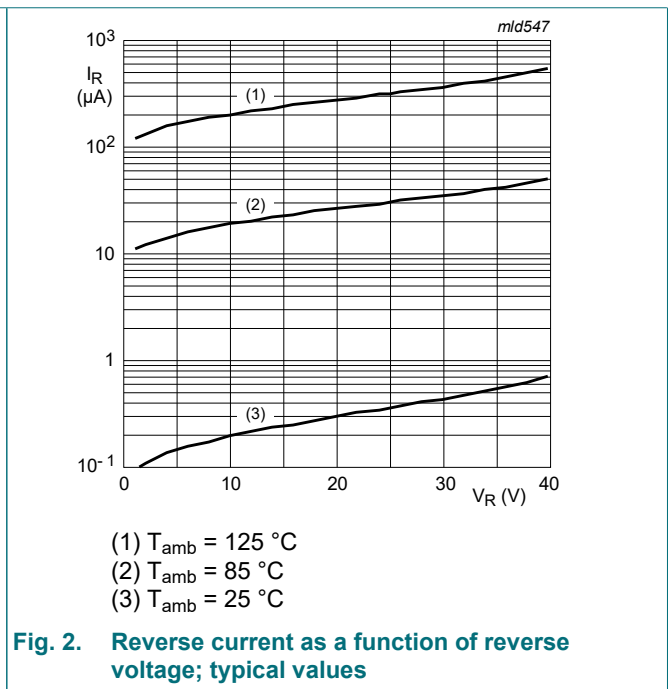
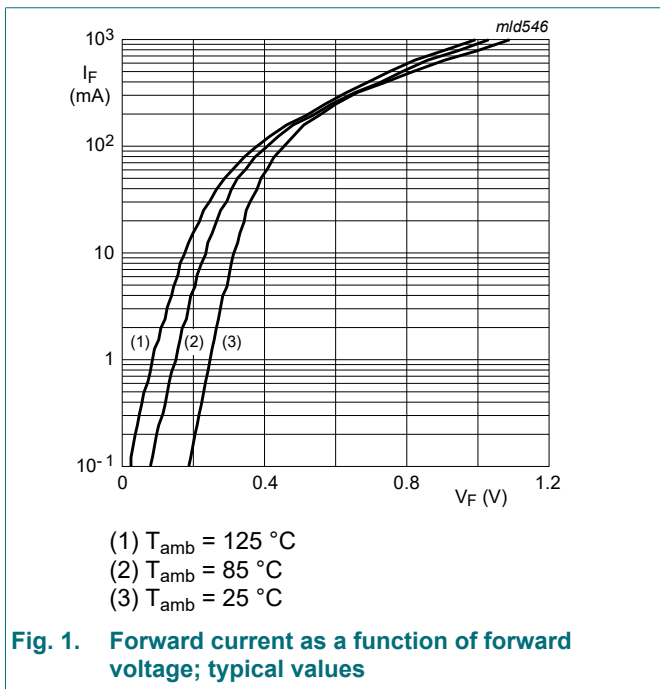
| Symbol | Parameter | Conditions | Min | Typ | Max | Unit |
|----------------------|---|-------------|-----|-----|-----|------|
| $R_{\text{th}(j-a)}$ | thermal resistance from junction to ambient | in free air | [1] | - | 450 | K/W |

[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 | - | 190 | 220 | mV |
| | | I _F = 1 mA; T _{amb} = 25 °C | - | 250 | 290 | mV |
| | | I _F = 10 mA; T _{amb} = 25 °C | - | 320 | 360 | mV |
| | | I _F = 100 mA; T _{amb} = 25 °C | - | 440 | 500 | mV |
| | | I _F = 200 mA; T _{amb} = 25 °C | - | 520 | 600 | mV |
| I _R | reverse current | V _R = 25 V; t _p = 300 μs; δ = 0.02; pulsed; T _{amb} = 25 °C | - | - | 0.5 | μA |
| C _d | diode capacitance | V _R = 1 V; f = 1 MHz; T _{amb} = 25 °C | - | - | 20 | pF |



11. Package outline

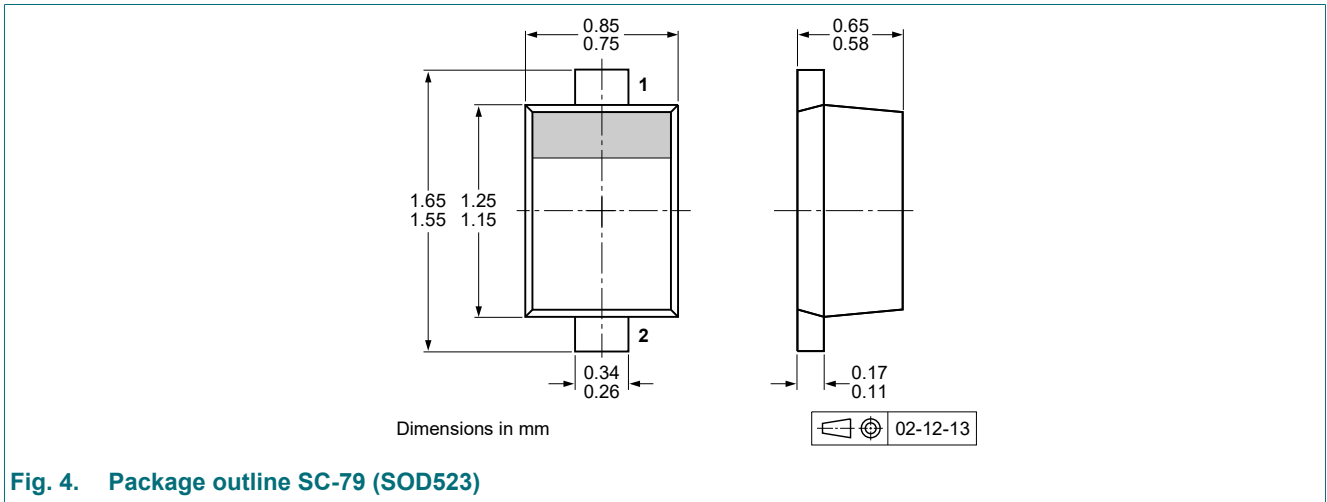


Fig. 4. Package outline SC-79 (SOD523)

12. Soldering

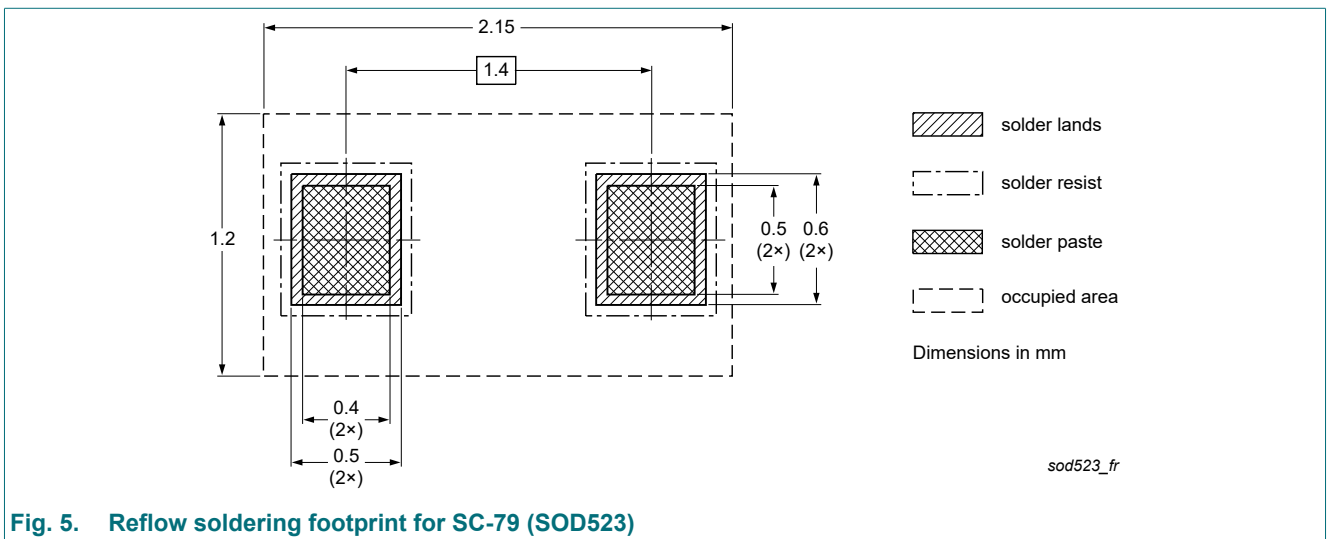


Fig. 5. Reflow soldering footprint for SC-79 (SOD523)

13. Revision history

Table 8. Revision history

| Data sheet ID | Release date | Data sheet status | Change notice | Supersedes |
|----------------|---|--------------------|---------------|---------------|
| 1PS79SB30 v.3 | 20230101 | Product data sheet | - | 1PS79SB30 v.2 |
| Modifications: | <ul style="list-style-type: none">Product changed to non-automotive qualification. Please refer to nexperia.com for automotive (-Q) product alternative(s). | | | |
| 1PS79SB30 v.2 | 20120724 | Product data sheet | | 1PS79SB30 v.1 |
| 1PS79SB30 v.1 | 20010220 | 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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