
# 1PS79SB70

## General-purpose Schottky diode

19 January 2023 Product data sheet

## 1. General description

General-purpose Schottky diode in an ultra small SOD523 (SC-79) Surface-Mounted Device (SMD) flat lead plastic package.

## 2. Features and benefits

- High switching speed
- Low leakage current
- High breakdown voltage
- Low capacitance

## 3. Applications

- Ultra high-speed switching
- Voltage clamping

## 4. Quick reference data

**Table 1. Quick reference data**

| Symbol | Parameter | Conditions | | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|---|
| $I_F$ | forward current | | | - | - | 70 | mA |
| $V_F$ | forward voltage | $I_F$ = 1 mA; $t_p \leq$ 300 µs; $\delta \leq$ 0.02; pulsed; $T_{amb}$ = 25 °C | | - | - | 410 | mV |
| $V_R$ | reverse voltage | $T_j$ = 25 °C | | - | - | 70 | V |

## 5. Pinning information

**Table 2. Pinning information**

| Pin | Symbol | Description | Simplified outline | Graphic symbol |
|---|---|---|---|---|
| 1 | K | cathode[1] |  SC-79 (SOD523) |  aaa-003679 |
| 2 | A | anode | | |





[1] The marking bar indicates the cathode.

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# 6. Ordering information

**Table 3. Ordering information**

| Type number | Package | | |
|---|---|---|---|
| | Name | Description | Version |
| 1PS79SB70 | 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 |
|---|---|
| 1PS79SB70 | G |

# 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 °C | | - | 70 | V |
| $I_F$ | forward current | | | - | 70 | mA |
| $I_{FRM}$ | repetitive peak forward current | $t_p \leq$ 1 s; $\delta \leq$ 0.5 | | - | 70 | mA |
| $I_{FSM}$ | non-repetitive peak forward current | $t_p \leq$ 10 ms; $T_{j(init)}$ = 25 °C | | - | 100 | mA |
| $T_j$ | 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**

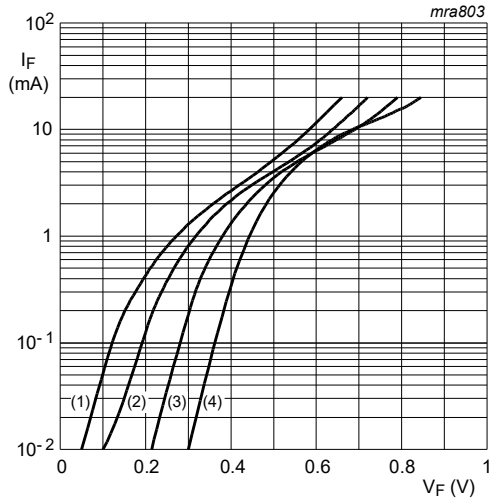
| Symbol | Parameter | Conditions | | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|---|
| $R_{th(j-a)}$ | thermal resistance from junction to ambient | in free air | [1] [2] | - | - | 450 | K/W |

[1] Device mounted on an FR4 Printed-Circuit Board (PCB), single-sided copper, tin-plated and standard footprint.
[2] Reflow soldering is the only recommended soldering method.

## 10. Characteristics

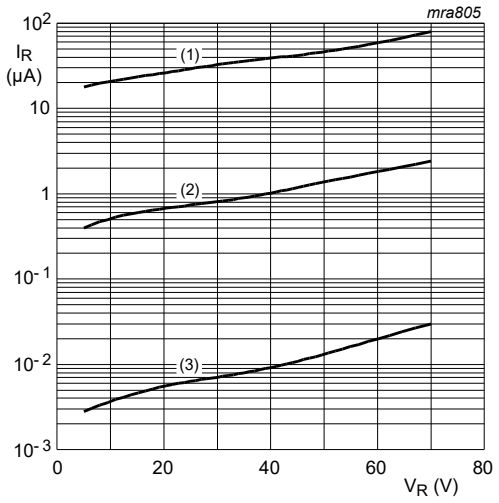
**Table 7. Characteristics**

| Symbol | Parameter | Conditions | | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|---|
| $V_F$ | forward voltage | $I_F$ = 1 mA; $t_p \leq$ 300 µs; $\delta \leq$ 0.02; pulsed; $T_{amb}$ = 25 °C | | - | - | 410 | mV |
| | | $I_F$ = 10 mA; $t_p \leq$ 300 µs; $\delta \leq$ 0.02; pulsed; $T_{amb}$ = 25 °C | | - | - | 750 | mV |
| | | $I_F$ = 15 mA; $t_p \leq$ 300 µs; $\delta \leq$ 0.02; pulsed; $T_{amb}$ = 25 °C | | - | - | 1 | V |
| $I_R$ | reverse current | $V_R$ = 50 V; $T_{amb}$ = 25 °C | | - | - | 100 | nA |
| | | $V_R$ = 70 V; $T_{amb}$ = 25 °C | | - | - | 10 | µA |
| $C_d$ | diode capacitance | $V_R$ = 0 V; f = 1 MHz; $T_{amb}$ = 25 °C | | - | - | 2 | pF |



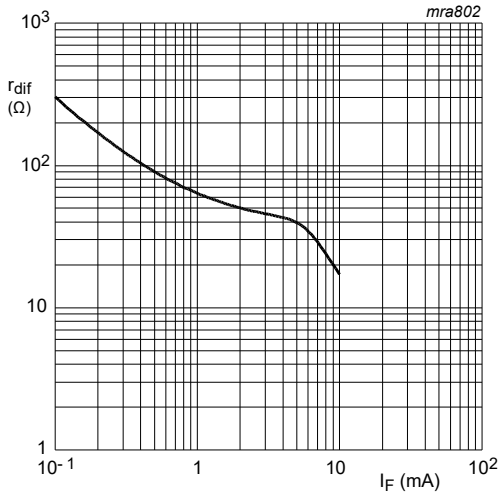

(1) $T_{amb}$ = 125 °C
(2) $T_{amb}$ = 85 °C
(3) $T_{amb}$ = 25 °C
(4) $T_{amb}$ = −40 °C

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



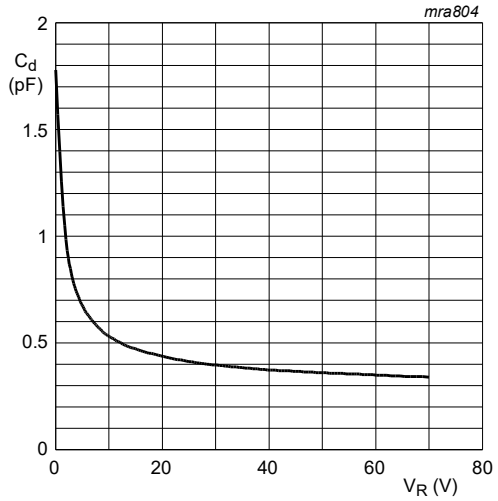

(1) $T_{amb}$ = 125 °C
(2) $T_{amb}$ = 85 °C
(3) $T_{amb}$ = 25 °C

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




f = 10 kHz

**Fig. 3. Differential forward resistance as a function of forward current; typical values**




$T_{amb}$ = 25 °C; f = 1 MHz

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

## 11. Package outline

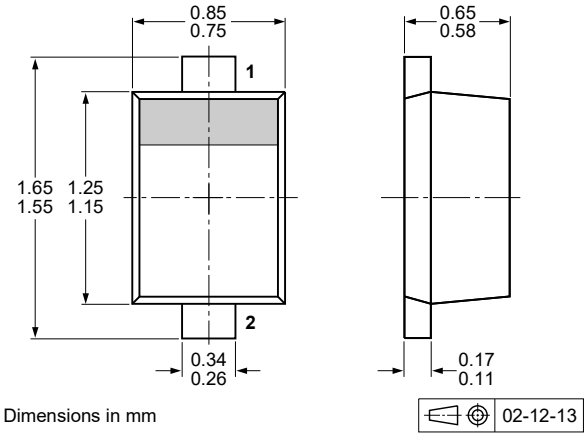



**Fig. 5. Package outline SC-79 (SOD523)**

## 12. Soldering

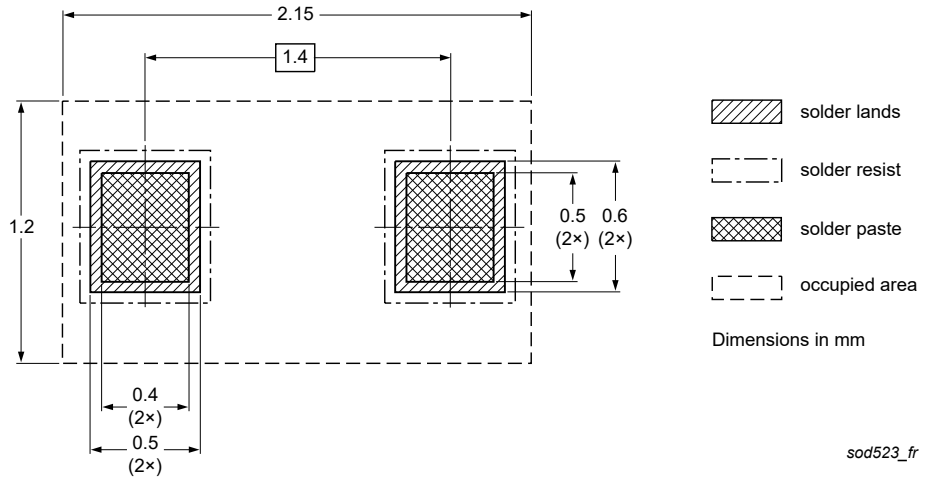



**Fig. 6. Reflow soldering footprint for SC-79 (SOD523)**

# 13. Revision history

**Table 8. Revision history**

| Data sheet ID | Release date | Data sheet status | Change notice | Supersedes |
|---|---|---|---|---|
| 1PS79SB70 v.12 | 20230119 | Product data sheet | - | 1PS79SB70 v.11 |
| Modifications: | • Characteristics, $I_R$: Conditions corrected | | | |
| 1PS79SB70 v.11 | 20230101 | Product data sheet | - | BAS70_1PS7XSB70_SER_10 |
| BAS70_1PS7XSB70_SER_10 | 20210407 | Product data sheet | - | BAS70_1PS7XSB70_SER_9 |
| BAS70_1PS7XSB70_SER_9 | 20060504 | Product data sheet | | BAS70_1PS7XSB70_SER_8 |
| BAS70_1PS7XSB70_SER_8 | 20060504 | Product data sheet | - | BAS70_1PS7XSB70_SER_7 |
| BAS70_1PS7XSB70_SER_7 | 20050718 | Product data sheet | - | 1PS76SB70_2<br>1PS79SB70_1<br>BAS70H_1<br>BAS70L_1<br>BAS70-07V_1<br>BAS70VVBAS70W_3<br>BAS70-07S_4<br>BAS70_SERIES_6 |
| 1PS76SB70_2 | 20040126 | Product specification | - | 1PS76SB70_SER_1 |
| 1PS76SB70_1 | 19980716 | Product specification | - | - |
| BAS70H_1 | 20050425 | Product specification | - | - |
| BAS70L_1 | 20030520 | Product specification | - | - |
| BAS70-07V_1 | 20020117 | Product specification | - | - |
| BAS70VV_1 | 20040910 | Product specification | - | - |
| BAS70W_3 | 19990326 | Product specification | - | BAS70W_2 |
| BAS70-07S_4 | 20030411 | Product specification | - | BAS70_07S_3 |
| BAS70_SERIES_6 | 20011011 | Product specification | - | BAS70_5 |

# 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. |

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[2] The term 'short data sheet' is explained in section "Definitions".
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