



BAS70H

General-purpose Schottky diode

1 January 2023

Product data sheet

1. General description

General-purpose Schottky diode in a small and flat lead SOD123F Surface-Mounted Device (SMD) 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 | $I_F = 1 \text{ mA}$; $t_p \leq 300 \text{ } \mu\text{s}$; $\delta \leq 0.02$; pulsed; $T_{\text{amb}} = 25 \text{ } ^\circ\text{C}$ | - | - | 410 | mV |
| V_R | reverse voltage | $T_j = 25 \text{ } ^\circ\text{C}$ | - | - | 70 | V |

5. Pinning information

Table 2. Pinning information

| Pin | Symbol | Description | Simplified outline | Graphic symbol |
|-----|--------|-------------|--------------------|----------------|
| 1 | K | cathode[1] | SOD123F | 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 |
| BAS70H | SOD123F | plastic, surface-mounted package; 2 leads; 2.6 mm x 1.6 mm x 1.1 mm body | SOD123F |

7. Marking

Table 4. Marking codes

| Type number | Marking code |
|-------------|--------------|
| BAS70H | AH |

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 | $T_j = 25\text{ °C}$ | - | 70 | V |
| I_F | forward current | | - | 70 | mA |
| I_{FRM} | repetitive peak forward current | $t_p \leq 1\text{ s}; \delta \leq 0.5$ | - | 70 | mA |
| I_{FSM} | non-repetitive peak forward current | $t_p \leq 10\text{ ms}; T_{j(\text{init})} = 25\text{ °C}$ | - | 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 |
|----------------------|---|-------------|---------|-----|-----|------|
| $R_{\text{th}(j-a)}$ | thermal resistance from junction to ambient | in free air | [1] [2] | - | 330 | K/W |

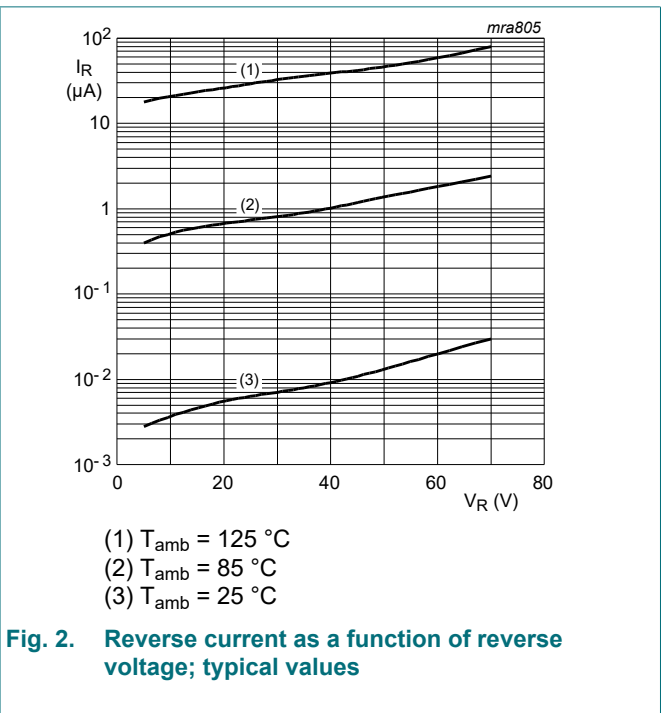
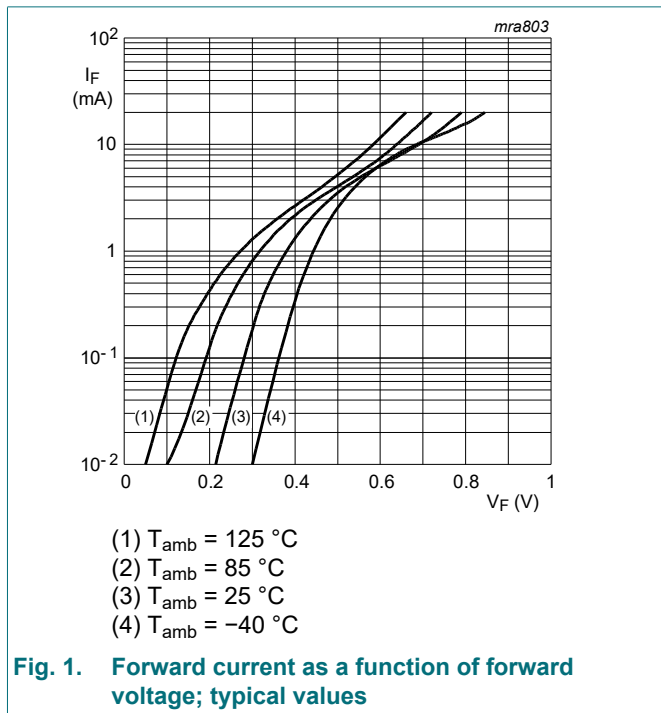
[1] Device mounted on an FR4 Printed-Circuit Board (PCB), single-sided copper, tin-plated and standard footprint.

[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 | $I_F = 1 \text{ mA}; t_p \leq 300 \mu\text{s}; \delta \leq 0.02;$ pulsed; $T_{\text{amb}} = 25 \text{ }^\circ\text{C}$ | - | - | 410 | mV |
| | | $I_F = 10 \text{ mA}; t_p \leq 300 \mu\text{s}; \delta \leq 0.02;$ pulsed; $T_{\text{amb}} = 25 \text{ }^\circ\text{C}$ | - | - | 750 | mV |
| | | $I_F = 15 \text{ mA}; t_p \leq 300 \mu\text{s}; \delta \leq 0.02;$ pulsed; $T_{\text{amb}} = 25 \text{ }^\circ\text{C}$ | - | - | 1 | V |
| I_R | reverse current | $V_R = 50 \text{ V}; T_{\text{amb}} = 25 \text{ }^\circ\text{C}$ | - | - | 100 | nA |
| | | $V_R = 70 \text{ V}; T_{\text{amb}} = 25 \text{ }^\circ\text{C}$ | - | - | 10 | μA |
| C_d | diode capacitance | $V_R = 0 \text{ V}; f = 1 \text{ MHz}; T_{\text{amb}} = 25 \text{ }^\circ\text{C}$ | - | - | 2 | pF |



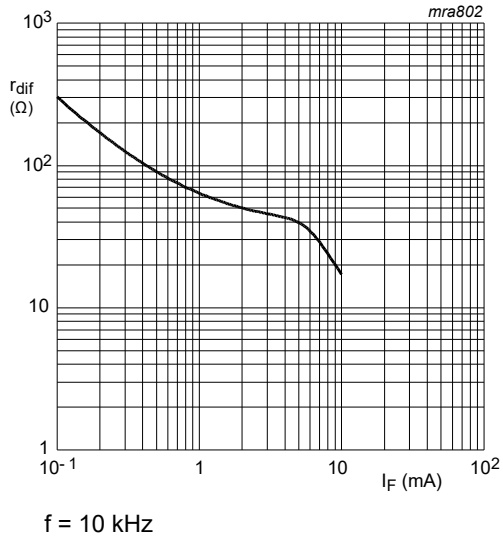


Fig. 3. Differential forward resistance as a function of forward current; typical values

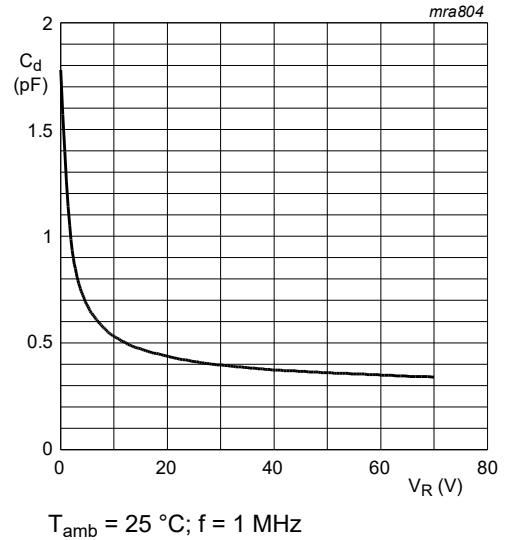


Fig. 4. Diode capacitance as a function of reverse voltage; typical values

11. Package outline

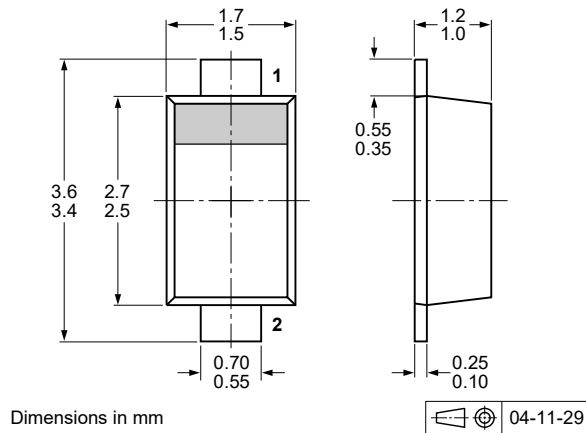


Fig. 5. Package outline SOD123F

12. Soldering

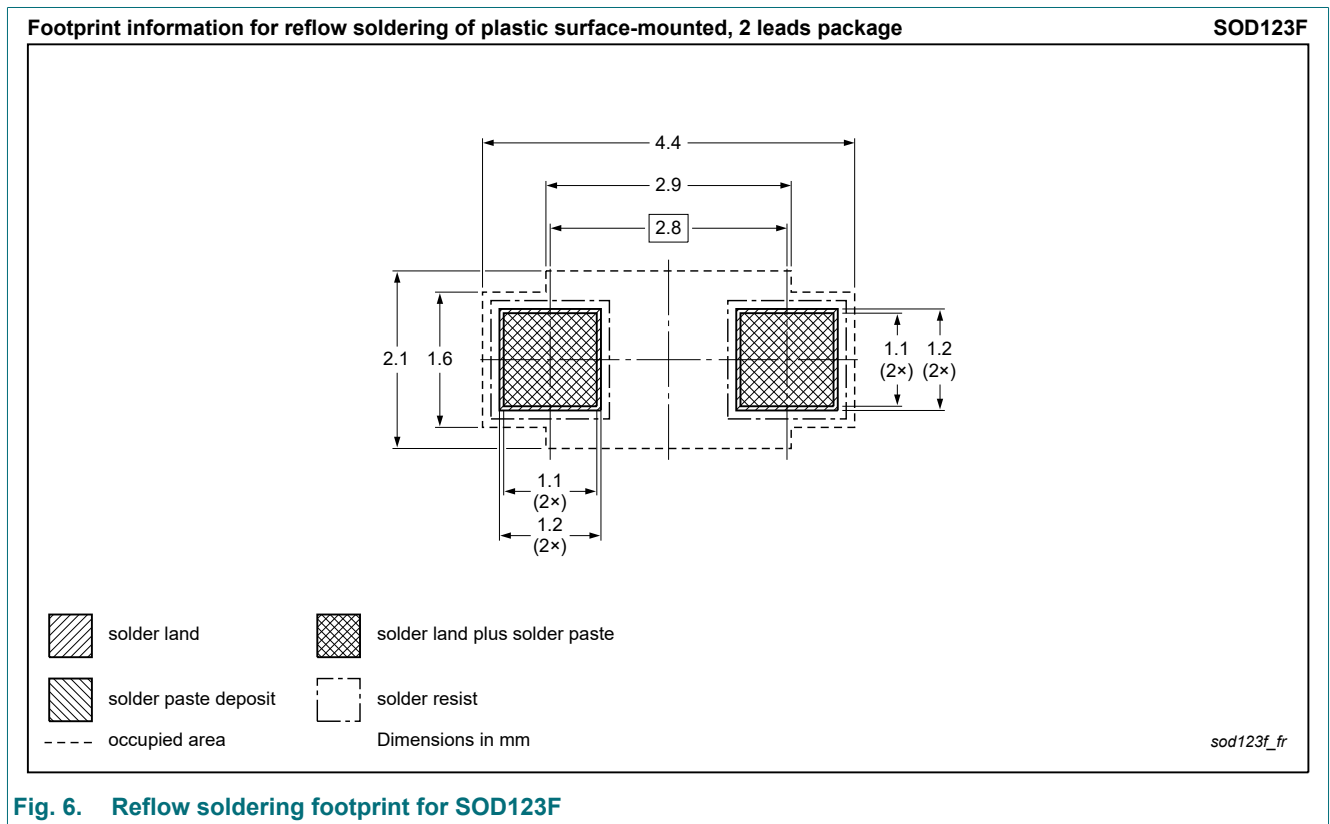


Fig. 6. Reflow soldering footprint for SOD123F

13. Revision history

Table 8. Revision history

| Data sheet ID | Release date | Data sheet status | Change notice | Supersedes |
|------------------------|--|-----------------------|---------------|---|
| BAS70H v.11 | 20230101 | Product data sheet | - | BAS70_1PS7XSB70_SER_10 |
| Modifications: | <ul style="list-style-type: none"> Family data sheet reduced to single type data sheets. Product changed to non-automotive qualification. Please refer to nexperia.com for automotive (-Q) product alternative(s). | | | |
| 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 1PS79SB70_1 BAS70H_1 BAS70L_1 BAS70-07V_1 BAS70VVBAS70W_3 BAS70-07S_4 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

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| 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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