



BAS35-Q

General purpose switching diode

28 July 2025

Product data sheet

1. General description

General purpose switching diode, encapsulated in a small SOT23 Surface-Mounted Device (SMD) plastic package.

2. Features and benefits

- Small plastic SMD package
- Switching speed: max. 50 ns
- General application
- Continuous reverse voltage: max. 90 V
- Repetitive peak reverse voltage: max. 110 V
- Repetitive peak forward current: max. 600 mA
- Repetitive peak reverse current: max. 600 μ A.
- Qualified according to AEC-Q101 and recommended for use in automotive applications

3. Applications

- General purpose switching in e.g. surface mounted circuits.

4. Quick reference data

Table 1. Quick reference data

| Symbol | Parameter | Conditions | Min | Typ | Max | Unit |
|----------|-----------------------|---|-----|-----|-----|---------|
| V_R | reverse voltage | | - | - | 90 | V |
| t_{rr} | reverse recovery time | $I_F = 30$ mA; $I_R = 30$ mA; $R_L = 100$ Ω ; $I_{R(meas)} = 3$ mA; $T_{amb} = 25$ $^{\circ}$ C | - | - | 50 | ns |
| I_R | reverse current | $V_R = 90$ V; $T_J = 150$ $^{\circ}$ C | - | - | 100 | μ A |

5. Pinning information

Table 2. Pinning information

| Pin | Symbol | Description | Simplified outline | Graphic symbol |
|-----|--------|---------------|--------------------|----------------|
| 1 | A | anode | SOT23 | 006aaa764 |
| 2 | n.c. | not connected | | |
| 3 | K | cathode | | |

6. Ordering information

Table 3. Ordering information

| Type number | Package | | |
|-------------------------|---------|--|-----------------------|
| | Name | Description | Version |
| BAS35-Q | SOT23 | plastic, surface-mounted package; 3 terminals; 1.9 mm pitch; 2.9 mm x 1.3 mm x 1 mm body | SOT23 |

7. Marking

Table 4. Marking codes

| Type number | Marking code[1] |
|-------------|-----------------|
| BAS35-Q | %V2 |

[1] % = placeholder for manufacturing site code

8. Limiting values

Table 5. Limiting values

In accordance with the Absolute Maximum Rating System (IEC 60134).

| Symbol | Parameter | Conditions | | Min | Max | Unit |
|------------------|-------------------------------------|--|-----|-----|------|------|
| V _{RRM} | repetitive peak reverse voltage | | | - | 110 | V |
| V _R | reverse voltage | | | - | 90 | V |
| I _F | forward current | continuous; per diode | | - | 250 | mA |
| | | | | - | 150 | mA |
| I _{FSM} | non-repetitive peak forward current | t _p = 1 μs; square wave; T _{j(init)} = 25 °C | | - | 10 | A |
| | | t _p = 100 μs; square wave; T _{j(init)} = 25 °C | | - | 4 | A |
| | | t _p = 1 s; square wave; T _{j(init)} = 25 °C | | - | 0.75 | A |
| I _{FRM} | repetitive peak forward current | | | - | 600 | mA |
| P _{tot} | total power dissipation | T _{amb} ≤ 25 °C | [1] | - | 250 | mW |
| T _j | junction temperature | | | - | 150 | °C |
| T _{stg} | storage temperature | | | -65 | 150 | °C |

[1] Device mounted on an FR4 printed-circuit board.

9. Thermal characteristics

Table 6. Thermal characteristics

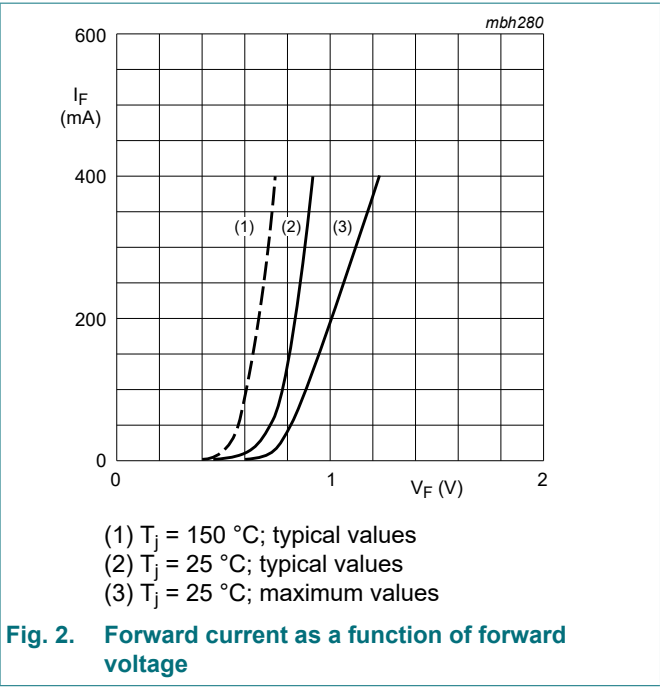
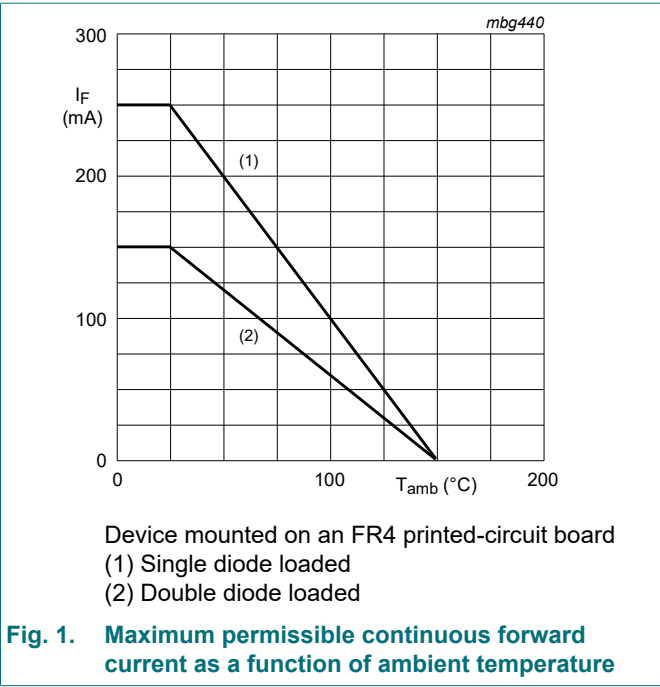
| Symbol | Parameter | Conditions | | Min | Typ | Max | Unit |
|----------------|--|------------|-----|-----|-----|-----|------|
| $R_{th(j-a)}$ | thermal resistance from junction to ambient | | [1] | - | - | 500 | K/W |
| $R_{th(j-sp)}$ | thermal resistance from junction to solder point | | | - | - | 360 | K/W |

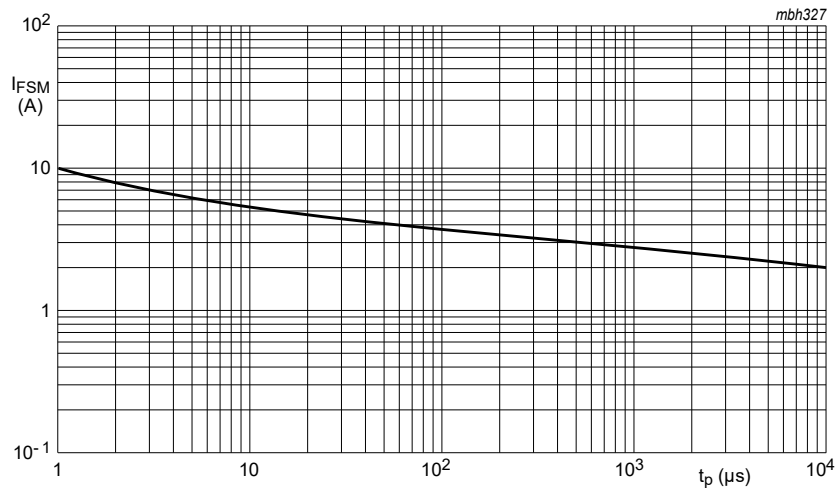
[1] Device mounted on an FR4 printed-circuit board.

10. Characteristics

Table 7. Characteristics

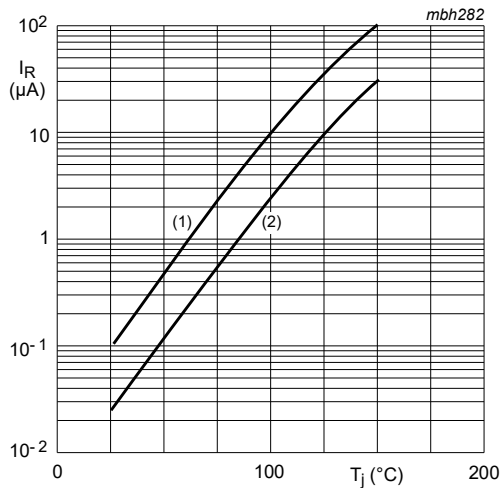
| Symbol | Parameter | Conditions | | Min | Typ | Max | Unit |
|-------------|-------------------------------|---|--|-----|-----|------|------|
| $V_{(BR)R}$ | reverse breakdown voltage | $I_R = 1\text{ mA}$; $T_j = 25\text{ °C}$ | | 120 | - | 170 | V |
| V_F | forward voltage | $I_F = 10\text{ mA}$; $T_j = 25\text{ °C}$ | | - | - | 750 | mV |
| | | $I_F = 50\text{ mA}$; $T_j = 25\text{ °C}$ | | - | - | 840 | mV |
| | | $I_F = 100\text{ mA}$; $T_j = 25\text{ °C}$ | | - | - | 900 | mV |
| | | $I_F = 200\text{ mA}$; $T_j = 25\text{ °C}$ | | - | - | 1 | V |
| | | $I_F = 400\text{ mA}$; $T_j = 25\text{ °C}$ | | - | - | 1.25 | V |
| I_R | reverse current | $V_R = 90\text{ V}$; $T_j = 25\text{ °C}$ | | - | - | 100 | nA |
| | | $V_R = 90\text{ V}$; $T_j = 150\text{ °C}$ | | - | - | 100 | µA |
| C_d | diode capacitance | $V_R = 0\text{ V}$; $f = 1\text{ MHz}$; $T_{amb} = 25\text{ °C}$ | | - | - | 35 | pF |
| t_{rr} | reverse recovery time | $I_F = 30\text{ mA}$; $I_R = 30\text{ mA}$; $R_L = 100\text{ }\Omega$; $I_{R(meas)} = 3\text{ mA}$; $T_{amb} = 25\text{ °C}$ | | - | - | 50 | ns |
| I_{RM} | peak reverse recovery current | | | - | - | 600 | mA |





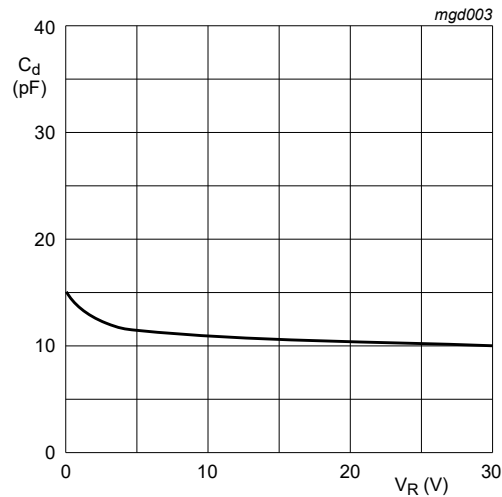
Based on square wave currents
 $T_j = 25\text{ }^{\circ}\text{C}$ prior to surge

Fig. 3. Maximum permissible non-repetitive peak forward current as a function of pulse duration



(1) $V_R = 90\text{ V}$; maximum values
(2) $V_R = 90\text{ V}$; typical values

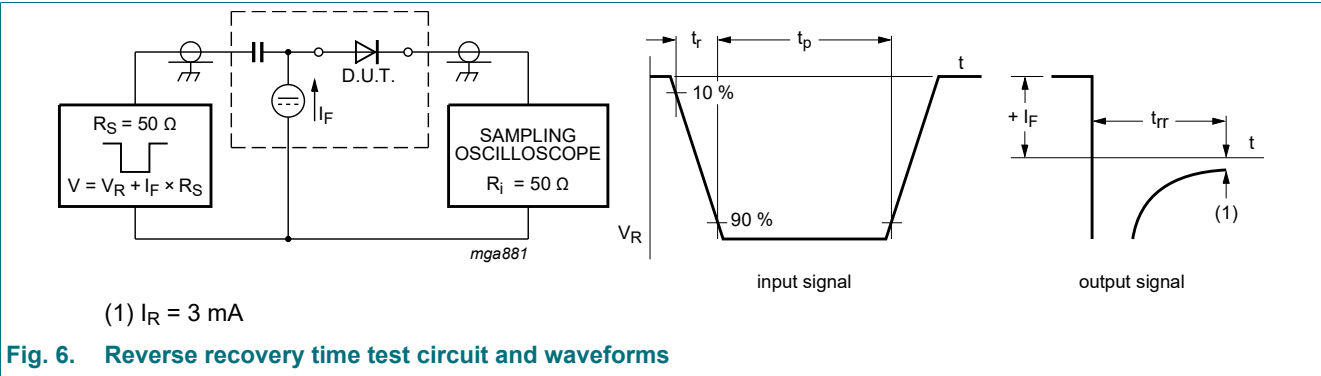
Fig. 4. Reverse current as a function of junction temperature



$f = 1\text{ MHz}$
 $T_j = 25\text{ }^{\circ}\text{C}$

Fig. 5. Diode capacitance as a function of reverse voltage; typical values

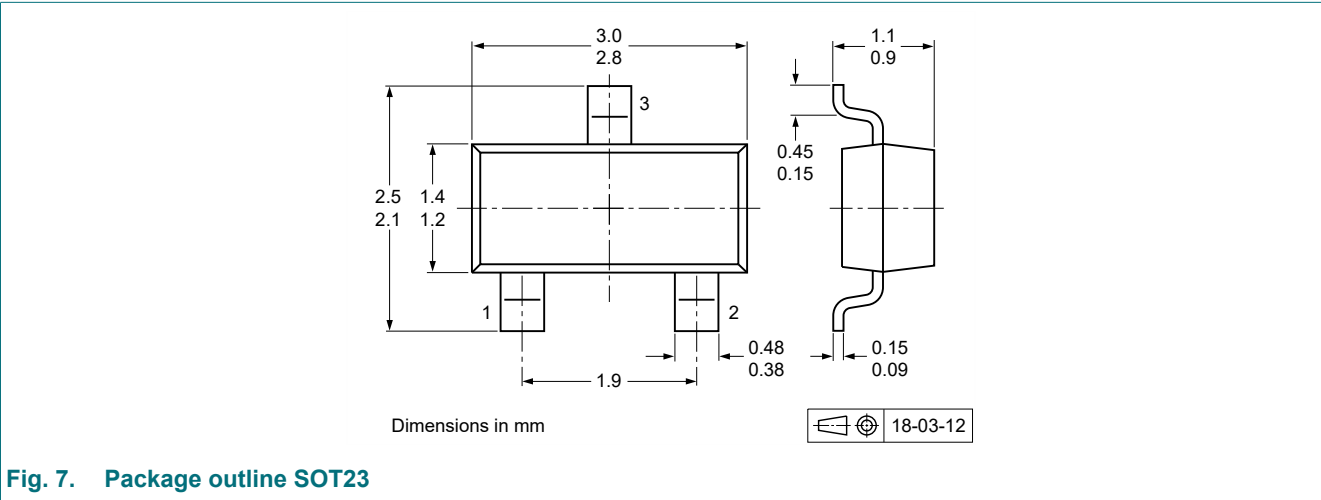
11. Test information



Quality information

This product has been qualified in accordance with the Automotive Electronics Council (AEC) standard Q101 - *Stress test qualification for discrete semiconductors*, and is suitable for use in automotive applications.

12. Package outline



13. Soldering

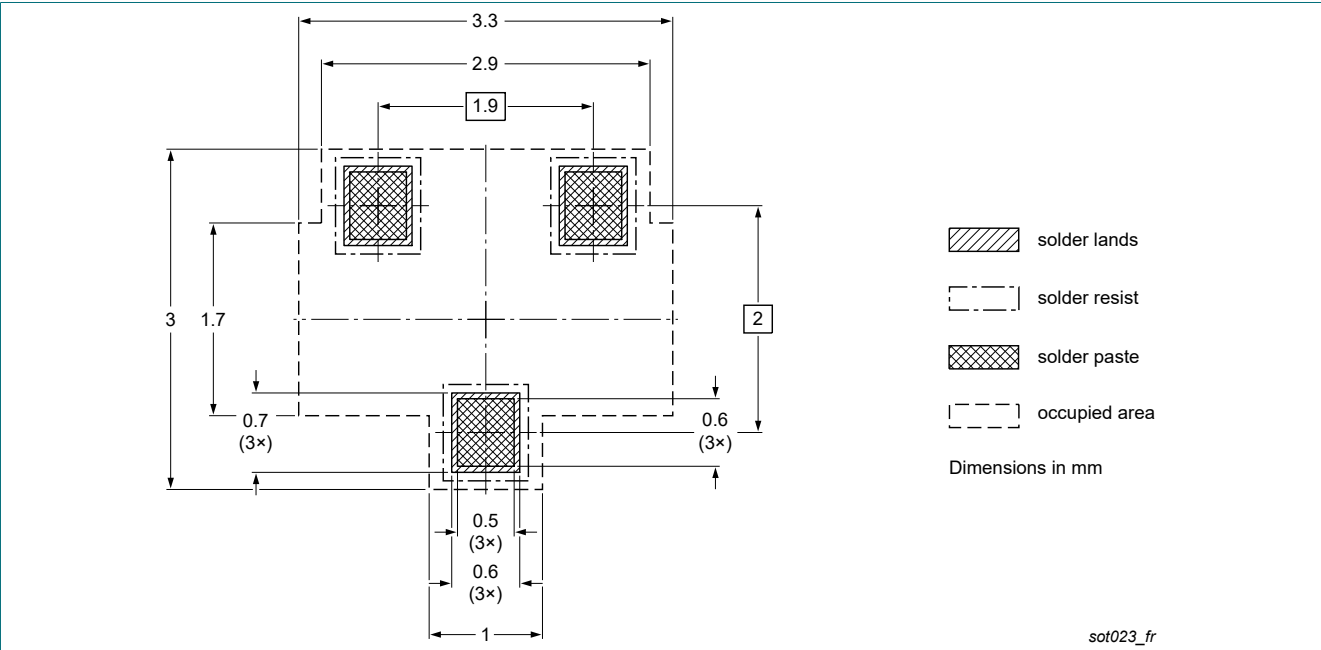


Fig. 8. Reflow soldering footprint for SOT23

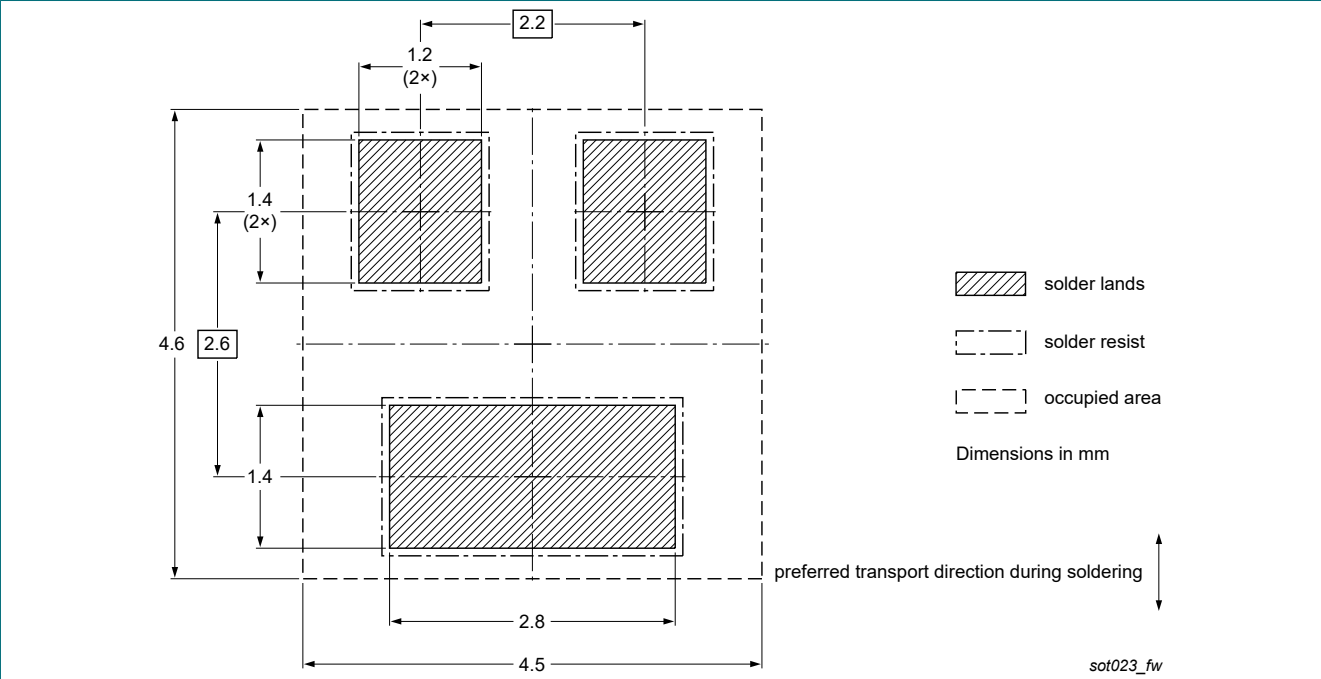


Fig. 9. Wave soldering footprint for SOT23

14. Revision history

Table 8. Revision history

| Data sheet ID | Release date | Data sheet status | Change notice | Supersedes |
|---------------|--------------|--------------------|---------------|------------|
| BAS35-Q | 20250728 | Product data sheet | - | - |

15. 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. |
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| Product [short] data sheet | Production | This document contains the product specification. |

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Date of release: 28 July 2025