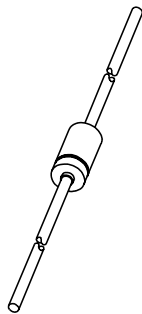


DATA SHEET



BAT85 Schottky barrier diode

Product data sheet
Supersedes data of 1996 Mar 20

2000 May 25

Schottky barrier diode

BAT85

FEATURES

- Low forward voltage
- Guard ring protected
- Hermetically-sealed leaded glass package.

APPLICATIONS

- Ultra high-speed switching
- Voltage clamping
- Protection circuits
- Blocking diodes.

DESCRIPTION

Planar Schottky barrier diode with an integrated protection ring against static discharges, encapsulated in a hermetically-sealed subminiature SOD68 (DO-34) package. The diode is suitable for mounting on a 2 E (5.08 mm) pitch.

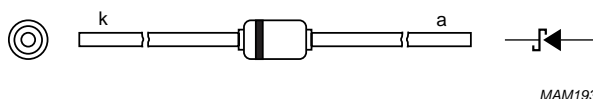


Fig.1 Simplified outline (SOD68; DO-34), pin configuration and symbol.

LIMITING VALUES

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

| SYMBOL | PARAMETER | CONDITIONS | MIN. | MAX. | UNIT |
|-------------|-------------------------------------|--|------|------|------|
| V_R | continuous reverse voltage | | – | 30 | V |
| I_F | continuous forward current | | – | 200 | mA |
| $I_{F(AV)}$ | average forward current | PCB mounting, lead length = 4 mm; $V_{RWM} = 25$ V; $a = 1.57$; $\delta = 0.5$; $T_{amb} = 50$ °C; see Fig.2 | – | 200 | mA |
| I_{FRM} | repetitive peak forward current | $t_p \leq 1$ s; $\delta 0.5$ | – | 300 | mA |
| I_{FSM} | non-repetitive peak forward current | $t_p \leq 10$ ms | – | 5 | A |
| T_{stg} | storage temperature | | –65 | +150 | °C |
| T_j | junction temperature | | – | 125 | °C |
| T_{amb} | operating ambient temperature | | –65 | +125 | °C |

Schottky barrier diode

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ELECTRICAL CHARACTERISTICS $T_{amb} = 25\text{ }^{\circ}\text{C}$; unless otherwise specified.

| SYMBOL | PARAMETER | CONDITIONS | MAX. | UNIT |
|----------|-----------------------|---|---------------------------------|----------------------------|
| V_F | forward voltage | see Fig.3 $I_F = 0.1\text{ mA}$ $I_F = 1\text{ mA}$ $I_F = 10\text{ mA}$ $I_F = 30\text{ mA}$ $I_F = 100\text{ mA}$ | 240 320 400 500 800 | mV mV mV mV mV |
| I_R | reverse current | $V_R = 25\text{ V}$; see Fig.4 | 2 | μA |
| t_{rr} | reverse recovery time | when switched from $I_F = 10\text{ mA}$ to $I_R = 10\text{ mA}$; $R_L = 100\text{ }\Omega$; measured at $I_R = 1\text{ mA}$; see Fig.6 | 4 | ns |
| C_d | diode capacitance | $f = 1\text{ MHz}$; $V_R = 1\text{ V}$; see Fig.5 | 10 | pF |

THERMAL CHARACTERISTICS

| SYMBOL | PARAMETER | CONDITIONS | VALUE | UNIT |
|---------------------|---|------------|-------|------|
| $R_{th\text{ j-a}}$ | thermal resistance from junction to ambient | note 1 | 320 | K/W |

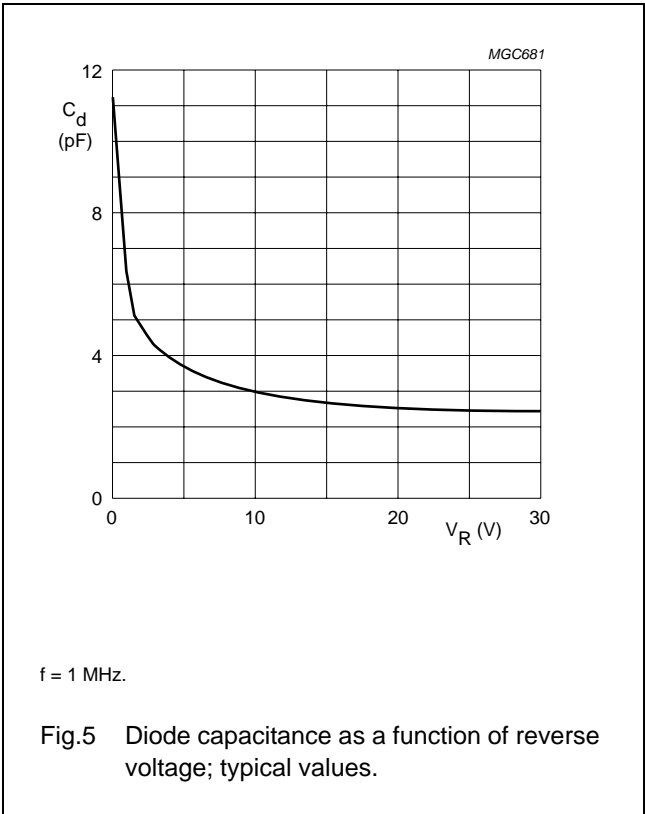
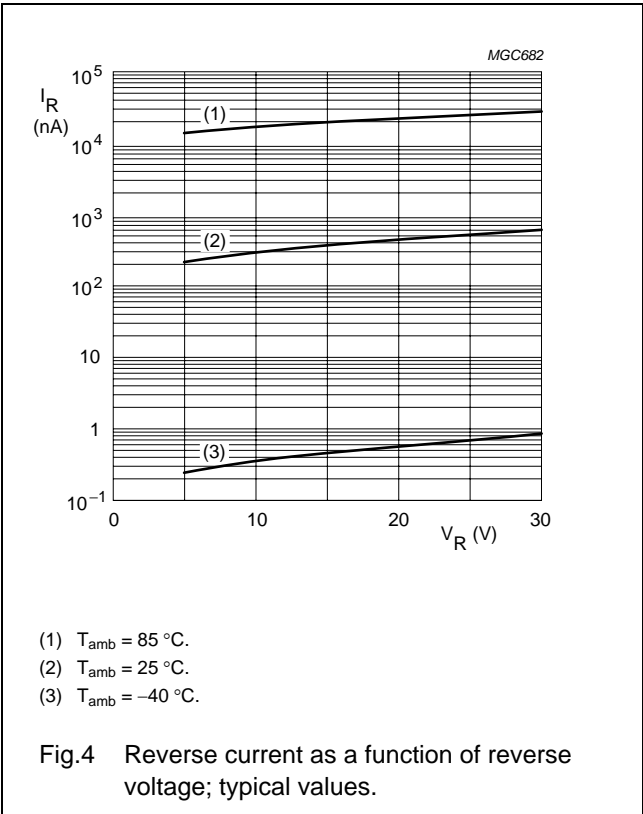
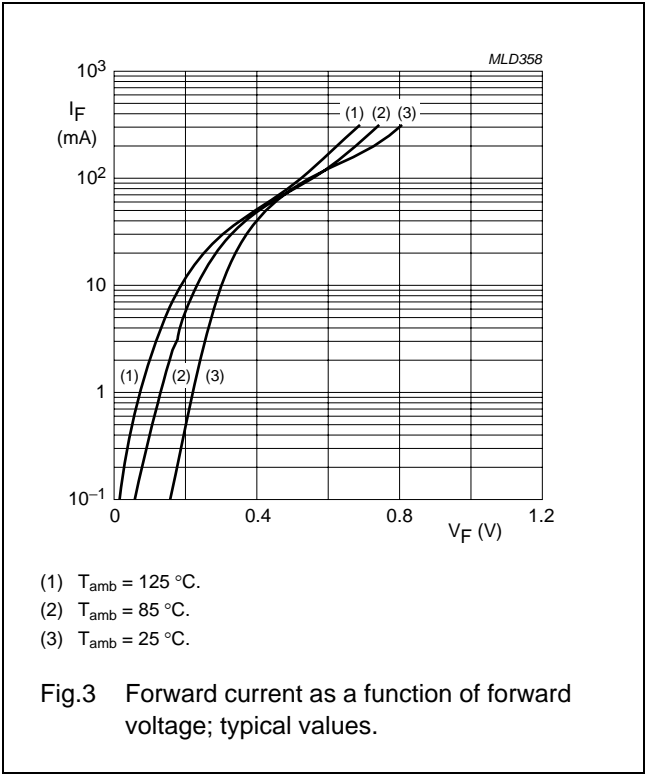
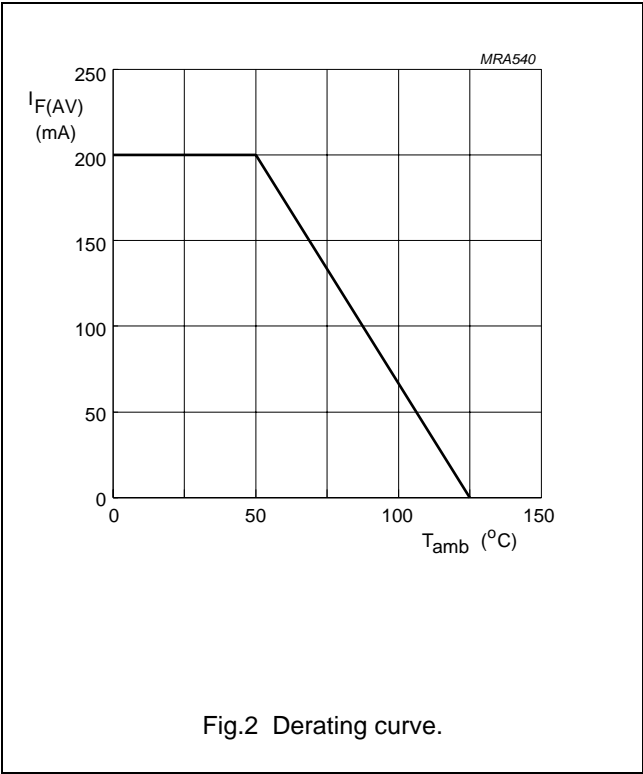
Note

1. Refer to SOD68 standard mounting conditions.

Schottky barrier diode

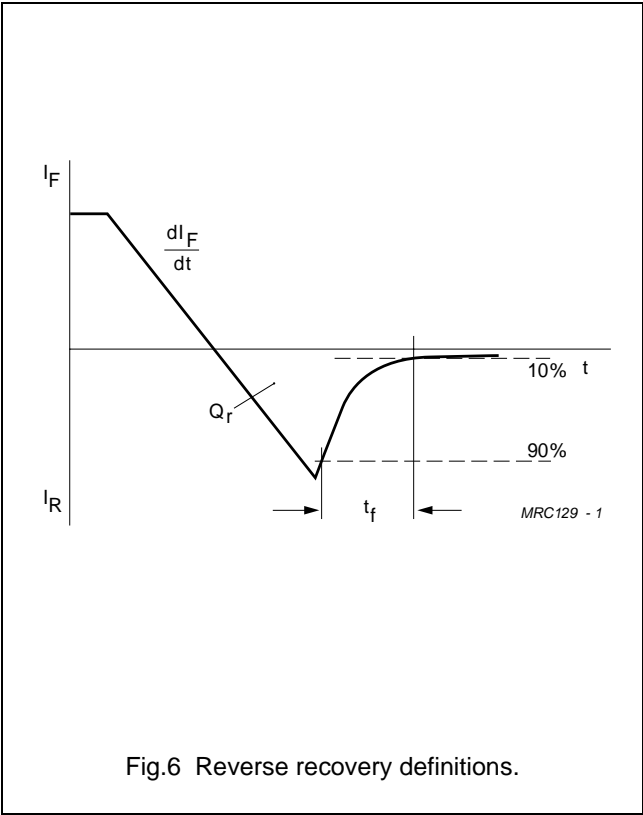
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GRAPHICAL DATA



Schottky barrier diode

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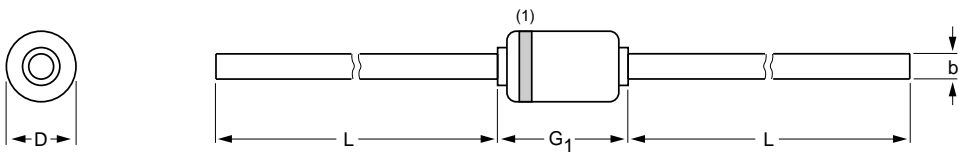
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PACKAGE OUTLINE

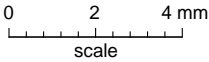
Hermetically sealed glass package; axial leaded; 2 leads

SOD68



DIMENSIONS (mm are the original dimensions)

| UNIT | b max. | D max. | G ₁ max. | L min. |
|------|-----------|-----------|------------------------|-----------|
| mm | 0.55 | 1.6 | 3.04 | 25.4 |



Note
1. The marking band indicates the cathode.

| OUTLINE VERSION | REFERENCES | | | | EUROPEAN PROJECTION | ISSUE DATE |
|--------------------|------------|-------|------|--|------------------------|------------|
| | IEC | JEDEC | EIAJ | | | |
| SOD68 | | DO-34 | | | | 97-06-09 |

Schottky barrier diode

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DATA SHEET STATUS

| DOCUMENT STATUS ⁽¹⁾ | PRODUCT STATUS ⁽²⁾ | DEFINITION |
|--------------------------------|-------------------------------|---|
| Objective data sheet | Development | This document contains data from the objective specification for product development. |
| Preliminary data sheet | Qualification | This document contains data from the preliminary specification. |
| Product data sheet | Production | This document contains the product specification. |

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1. Please consult the most recently issued document before initiating or completing a design.
2. 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 URL <http://www.nxp.com>.

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