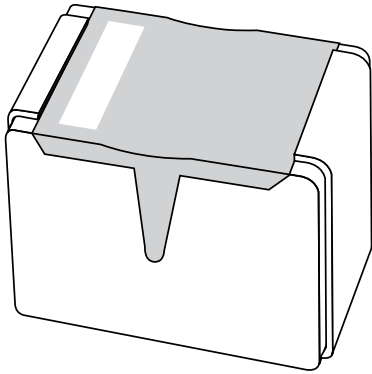


# DATA SHEET



## **BAT254** Schottky barrier diode

Product data sheet  
Supersedes data of 1999 Apr 22

2002 May 28

# Schottky barrier diode

# BAT254

### FEATURES

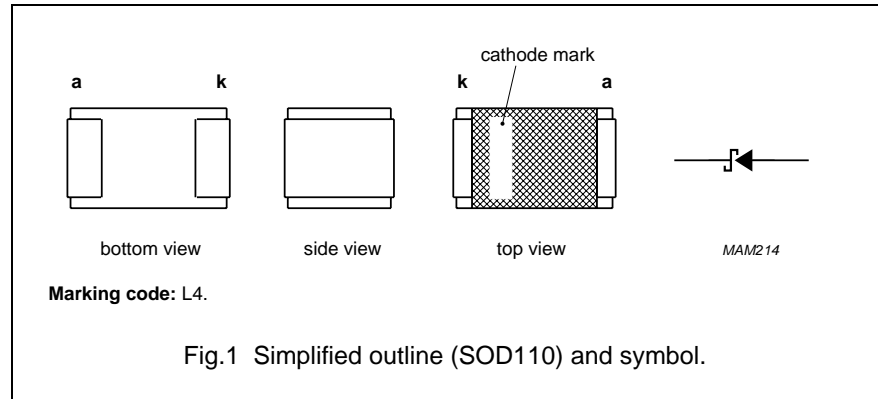
- Low forward voltage
- Guard ring protected
- Very small ceramic SMD package.

### APPLICATIONS

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

### DESCRIPTION

Planar Schottky barrier diode encapsulated in a SOD110 very small ceramic SMD package.



### 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   |
| $I_{FRM}$ | repetitive peak forward current     | $t_p \leq 1 \text{ s}; \delta \leq 0.5$ | –    | 300  | mA   |
| $I_{FSM}$ | non-repetitive peak forward current | $t_p < 10 \text{ ms}$                   | –    | 600  | mA   |
| $T_{stg}$ | storage temperature                 |   | –65  | +150 | °C   |
| $T_j$     | junction temperature                |   | –    | 125  | °C   |
| $T_{amb}$ | operating ambient temperature       |   | –65  | +125 | °C   |

## Schottky barrier diode

BAT254

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

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

**Note**

1. Pulse test:  $t_p = 300\ \mu\text{s}$ ;  $\delta = 0.02$ .

**THERMAL CHARACTERISTICS**

| SYMBOL        | PARAMETER                                   | CONDITIONS | VALUE | UNIT |
|---------------|---|------------|-------|------|
| $R_{th\ j-a}$ | thermal resistance from junction to ambient | note 1     | 315   | K/W  |

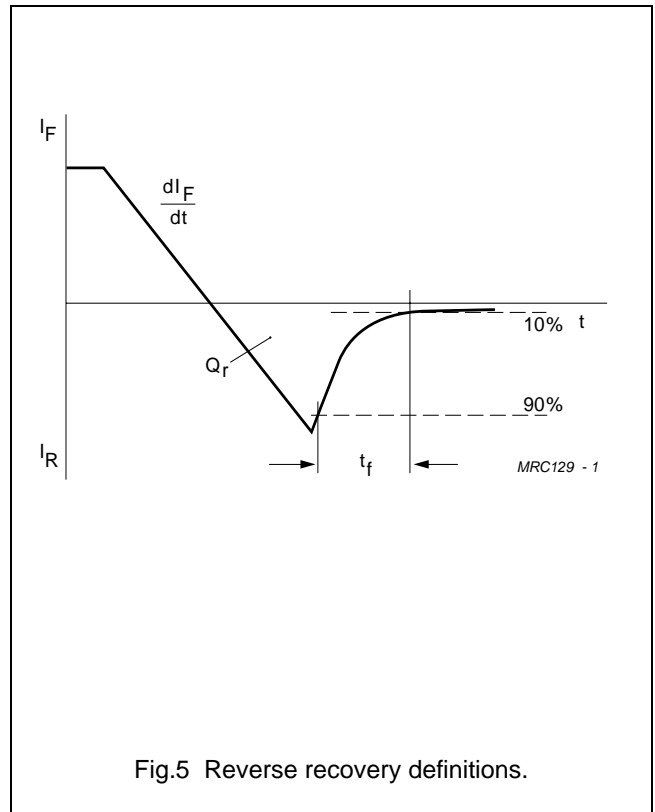
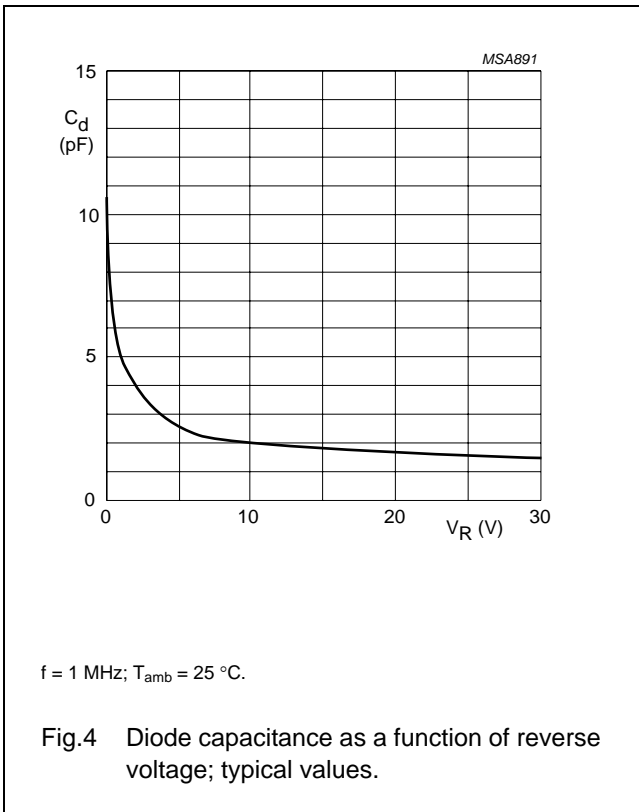
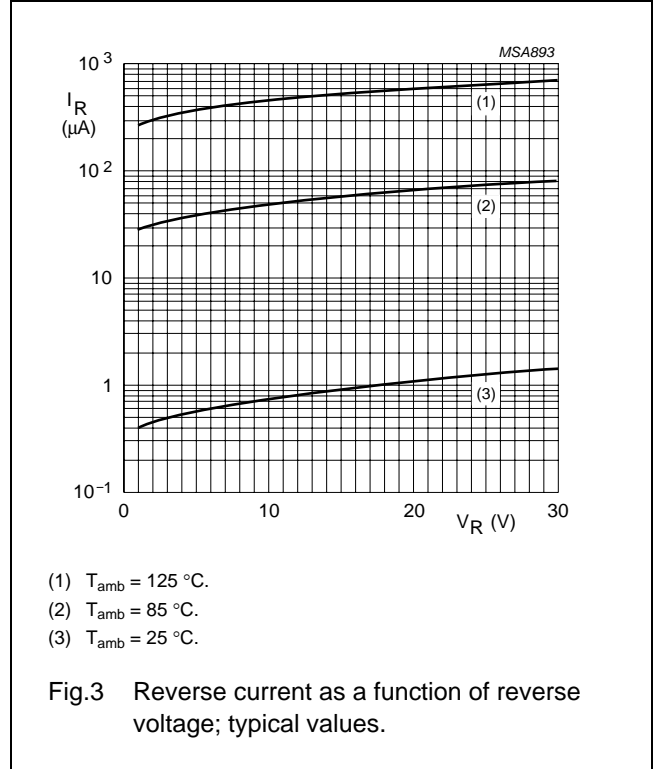
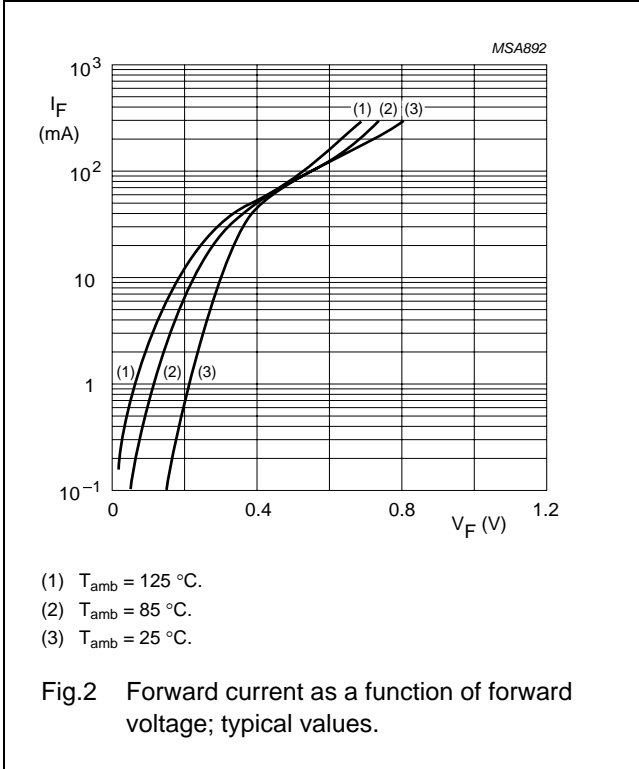
**Note**

1. Refer to SOD110 standard mounting conditions.

Schottky barrier diode

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GRAPHICAL DATA



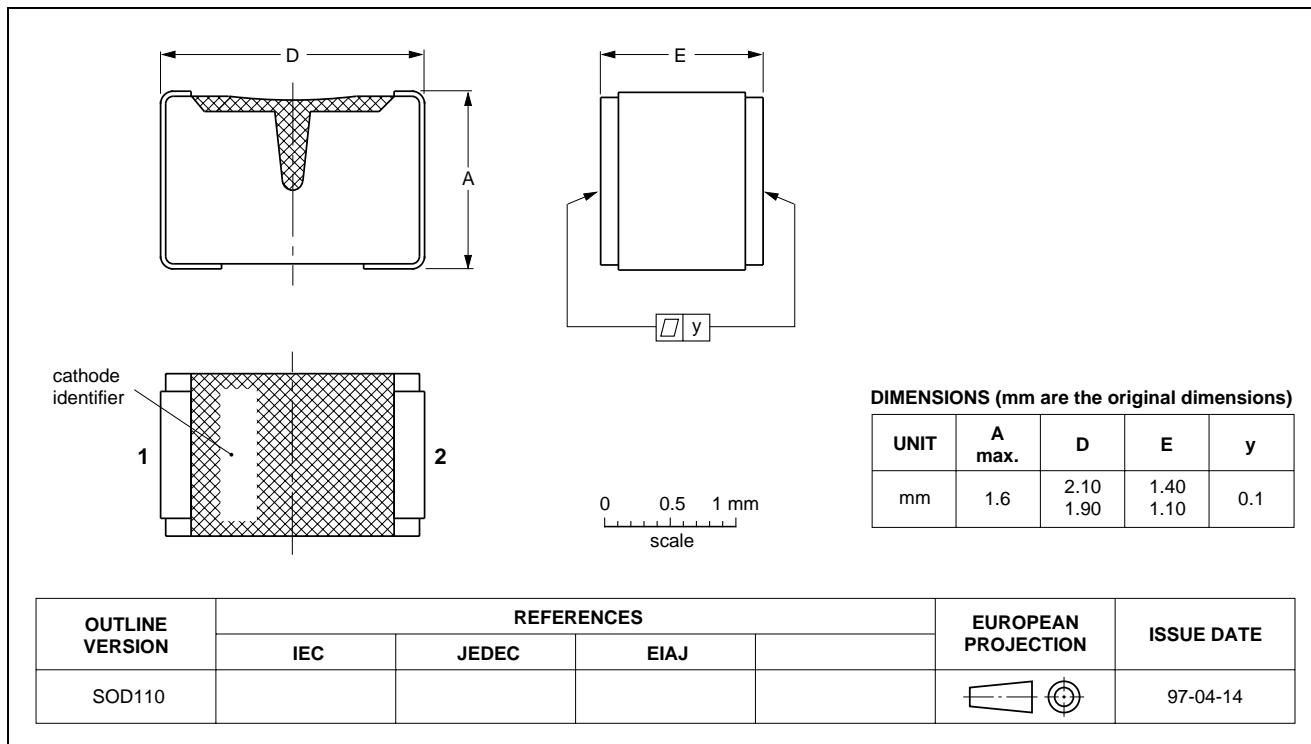
# Schottky barrier diode

BAT254

## PACKAGE OUTLINE

Very small ceramic rectangular surface mounted package

SOD110



# Schottky barrier diode

BAT254

## DATA SHEET STATUS

| DOCUMENT STATUS <sup>(1)</sup> | PRODUCT STATUS <sup>(2)</sup> | 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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Printed in The Netherlands

613514/03/pp7

Date of release: 2002 May 28

Document order number: 9397 750 09733

