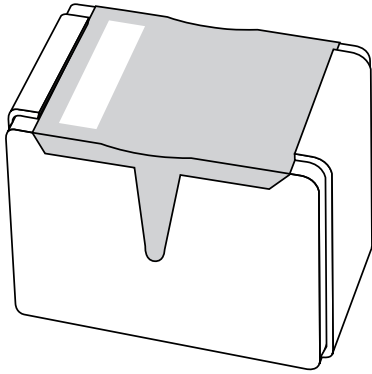


# DATA SHEET



## **BAS240** Schottky barrier diode

Product specification

2001 Feb 05

## Schottky barrier diode

## BAS240

## FEATURES

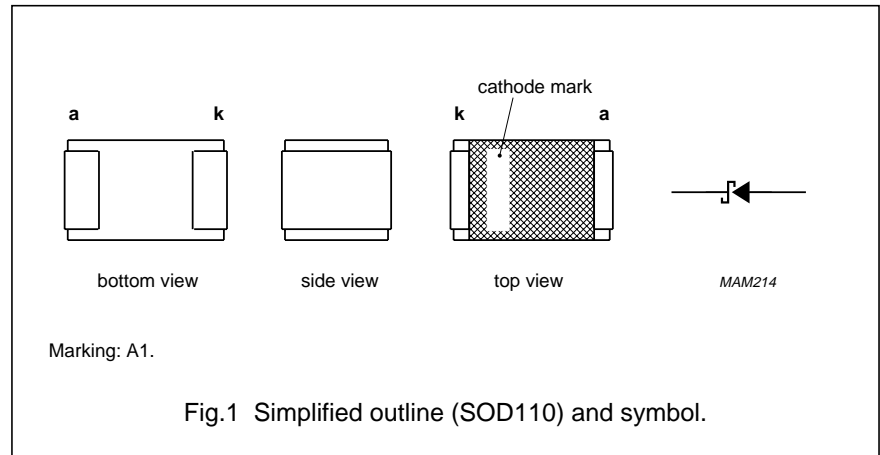
- Low forward voltage
- Guard ring protected
- Very small ceramic SMD package
- Low diode capacitance.

## APPLICATIONS

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

## DESCRIPTION

Planar Schottky barrier diode with an integrated guard ring for stress protection.



## LIMITING VALUES

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

| SYMBOL    | PARAMETER                           | CONDITIONS                                 | MIN. | MAX. | UNIT |
|-----------|-------------------------------------|--|------|------|------|
| $V_R$     | continuous reverse voltage          |  | –    | 40   | V    |
| $I_F$     | continuous forward current          |  | –    | 120  | mA   |
| $I_{FRM}$ | repetitive peak forward current     | $t_p \leq 1 \text{ s}$ ; $\delta \leq 0.5$ | –    | 120  | mA   |
| $I_{FSM}$ | non-repetitive peak forward current | $t_p < 10 \text{ ms}$                      | –    | 200  | mA   |
| $T_{stg}$ | storage temperature                 |  | –65  | +150 | °C   |
| $T_j$     | junction temperature                |  | –    | 150  | °C   |

## Schottky barrier diode

## BAS240

**ELECTRICAL CHARACTERISTICS**

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

| SYMBOL | PARAMETER         | CONDITIONS  | MAX. | UNIT          |
|--------|-------------------|---|------|---------------|
| $V_F$  | forward voltage   | see Fig.2   |      |               |
|        |                   | $I_F = 1\text{ mA}$                                 | 380  | mV            |
|        |                   | $I_F = 10\text{ mA}$                                | 500  | mV            |
|        |                   | $I_F = 40\text{ mA}$                                | 1    | V             |
| $I_R$  | reverse current   | $V_R = 30\text{ V}$ ; note 1; see Fig.3             | 1    | $\mu\text{A}$ |
|        |                   | $V_R = 40\text{ V}$ ; note 1; see Fig.3             | 10   | $\mu\text{A}$ |
| $C_d$  | diode capacitance | $V_R = 0\text{ V}$ ; $f = 1\text{ MHz}$ ; see Fig.5 | 5    | pF            |

**Note**

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

**THERMAL CHARACTERISTICS**

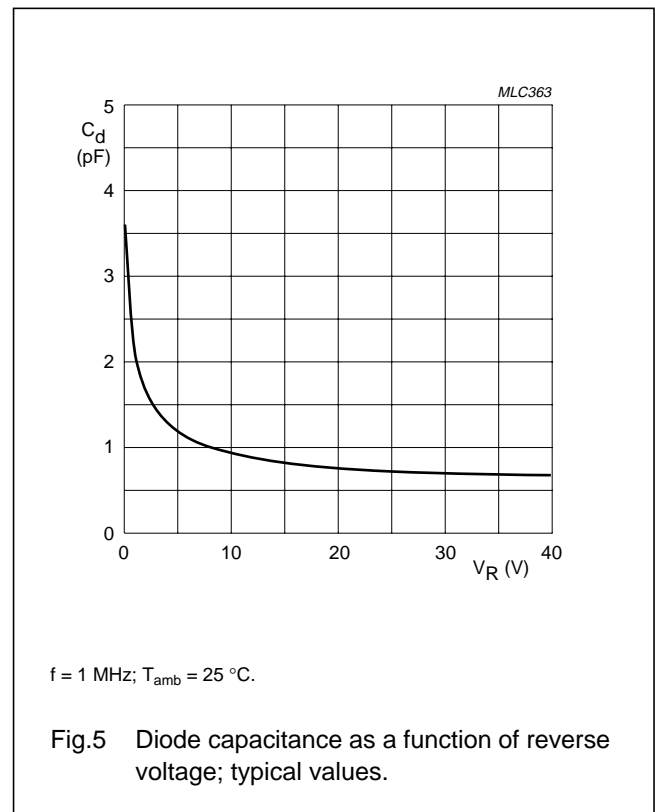
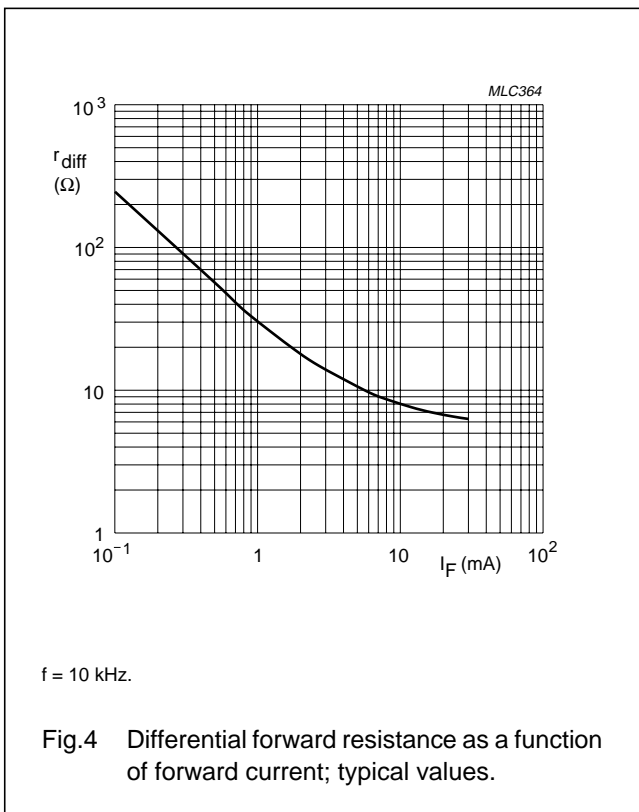
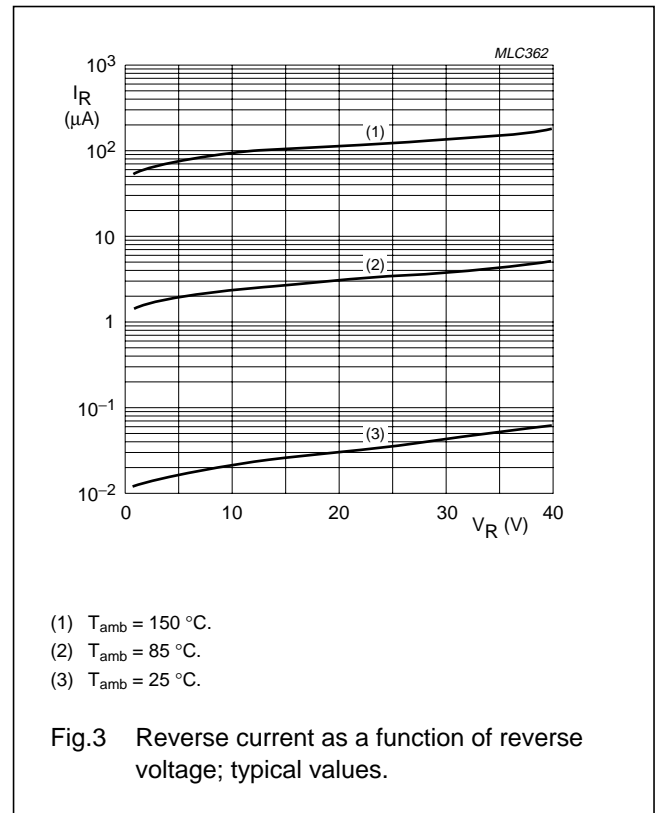
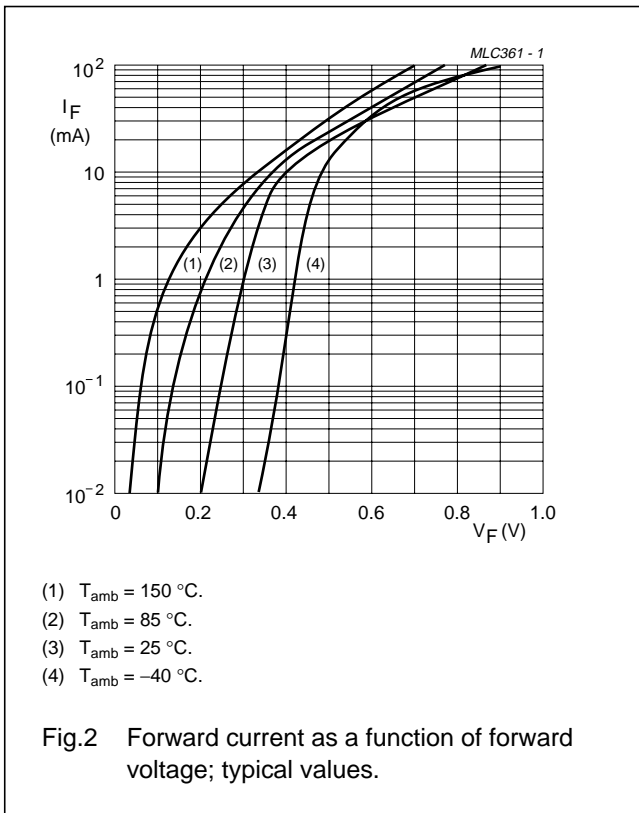
| SYMBOL        | PARAMETER                                   | CONDITIONS | VALUE | UNIT |
|---------------|---|------------|-------|------|
| $R_{th\ j-a}$ | thermal resistance from junction to ambient | note 1     | 315   | K/W  |

**Note**

1. Refer to SOD110 standard mounting conditions.

Schottky barrier diode

BAS240



# Schottky barrier diode

# BAS240

## PACKAGE OUTLINE

Very small ceramic rectangular surface mounted package

SOD110

**DIMENSIONS (mm are the original dimensions)**

| UNIT | A max. | D            | E            | y   |
|------|--------|--------------|--------------|-----|
| mm   | 1.6    | 2.10<br>1.90 | 1.40<br>1.10 | 0.1 |

| OUTLINE VERSION | REFERENCES |       |      |  | EUROPEAN PROJECTION | ISSUE DATE |
|-----------------|------------|-------|------|--|---------------------|------------|
|                 | IEC        | JEDEC | EIAJ |  |                     |            |
| SOD110          |            |       |      |  |                     | 97-04-14   |

## Schottky barrier diode

BAS240

## DATA SHEET STATUS

| DATA SHEET STATUS         | PRODUCT STATUS | DEFINITIONS <sup>(1)</sup>   |
|---------------------------|----------------|--|
| Objective specification   | Development    | This data sheet contains the design target or goal specifications for product development. Specification may change in any manner without notice.  |
| Preliminary specification | Qualification  | This data sheet contains preliminary data, and supplementary data will be published at a later date. Philips Semiconductors reserves the right to make changes at any time without notice in order to improve design and supply the best possible product. |
| Product specification     | Production     | This data sheet contains final specifications. Philips Semiconductors reserves the right to make changes at any time without notice in order to improve design and supply the best possible product.   |

## Note

1. Please consult the most recently issued data sheet before initiating or completing a design.

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**Short-form specification** — The data in a short-form specification is extracted from a full data sheet with the same type number and title. For detailed information see the relevant data sheet or data handbook.

**Limiting values definition** — Limiting values given are in accordance with the Absolute Maximum Rating System (IEC 60134). Stress above one or more of the limiting values may cause permanent damage to the device. These are stress ratings only and operation of the device at these or at any other conditions above those given in the Characteristics sections of the specification is not implied. Exposure to limiting values for extended periods may affect device reliability.

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Schottky barrier diode

BAS240

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