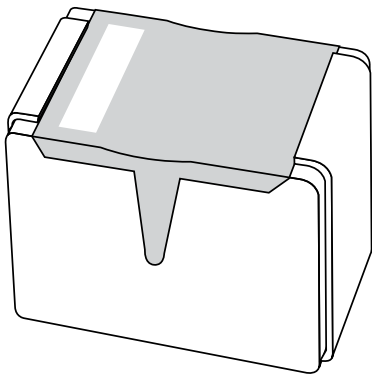


DATA SHEET



BAS216

High-speed switching diode

Product data sheet
Supersedes data of 1999 Apr 22

2002 May 28

High-speed switching diode

BAS216

FEATURES

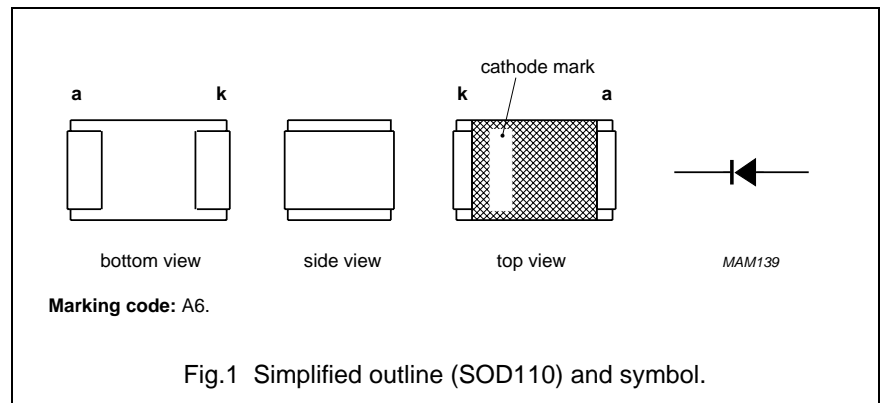
- Small ceramic SMD package
- High switching speed: max. 4 ns
- Continuous reverse voltage: max. 75 V
- Repetitive peak reverse voltage: max. 85 V
- Repetitive peak forward current: max. 500 mA.

APPLICATIONS

- High-speed switching in e.g. surface mounted circuits.

DESCRIPTION

The BAS216 is a high-speed switching diode fabricated in planar technology, and encapsulated in the SOD110 very small rectangular ceramic SMD package.



LIMITING VALUES

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

| SYMBOL | PARAMETER | CONDITIONS | MIN. | MAX. | UNIT |
|-----------|-------------------------------------|--|------|---------------|-------------|
| V_{RRM} | repetitive peak reverse voltage | | – | 85 | V |
| V_R | continuous reverse voltage | | – | 75 | V |
| I_F | continuous forward current | note 1 | – | 250 | mA |
| I_{FRM} | repetitive peak forward current | | – | 500 | mA |
| I_{FSM} | non-repetitive peak forward current | square wave; $T_j = 25\text{ °C}$ prior to surge; see Fig.4 $t = 1\ \mu\text{s}$ $t = 1\ \text{ms}$ $t = 1\ \text{s}$ | – | 4 1 0.5 | A A A |
| P_{tot} | total power dissipation | $T_{amb} = 25\text{ °C}$; see Fig.2; note 1 | – | 400 | mW |
| T_{stg} | storage temperature | | –65 | +150 | °C |
| T_j | junction temperature | | – | 150 | °C |

Note

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

High-speed switching diode

BAS216

ELECTRICAL CHARACTERISTICS $T_j = 25\text{ °C}$ unless otherwise specified.

| SYMBOL | PARAMETER | CONDITIONS | MIN. | MAX. | UNIT |
|----------|--------------------------|---|------|------|---------------|
| V_F | forward voltage | see Fig.3 | | | |
| | | $I_F = 1\text{ mA}$ | – | 715 | mV |
| | | $I_F = 10\text{ mA}$ | – | 855 | mV |
| | | $I_F = 50\text{ mA}$ | – | 1 | V |
| | | $I_F = 150\text{ mA}$ | – | 1.25 | V |
| I_R | reverse current | see Fig.5 | | | |
| | | $V_R = 25\text{ V}$ | – | 30 | nA |
| | | $V_R = 75\text{ V}$ | – | 1 | μA |
| | | $V_R = 25\text{ V}; T_j = 150\text{ °C}$ | – | 30 | μA |
| | | $V_R = 75\text{ V}; T_j = 150\text{ °C}$ | – | 50 | μA |
| C_d | diode capacitance | $f = 1\text{ MHz}; V_R = 0$; see Fig.6 | – | 1.5 | pF |
| 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.7 | – | 4 | ns |
| V_{fr} | forward recovery voltage | when switched from $I_F = 10\text{ mA}$; $t_r = 20\text{ ns}$; see Fig.8 | – | 1.75 | V |

THERMAL CHARACTERISTICS

| SYMBOL | PARAMETER | CONDITIONS | VALUE | UNIT |
|----------------|---|------------|-------|------|
| $R_{th\ j-tp}$ | thermal resistance from junction to tie-point | | 200 | K/W |
| $R_{th\ j-a}$ | thermal resistance from junction to ambient | note 1 | 315 | K/W |

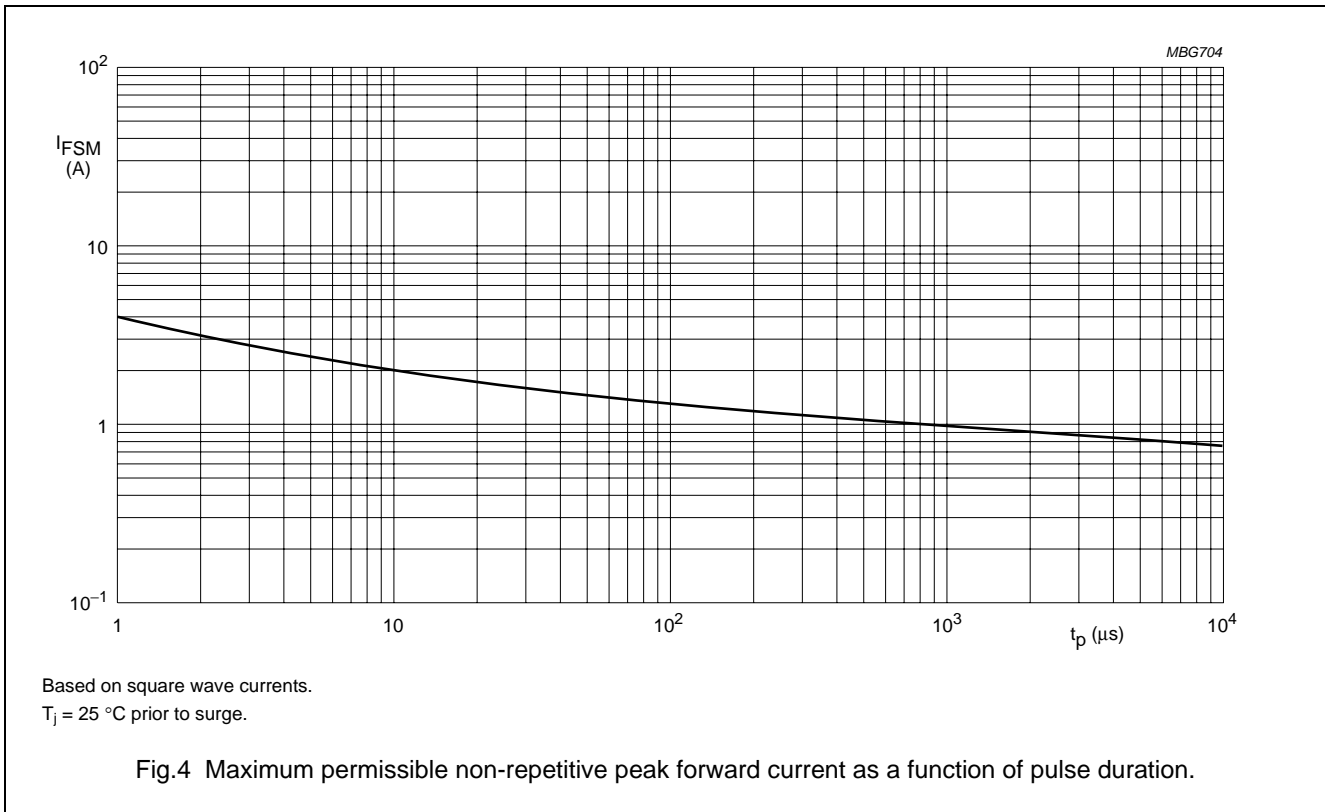
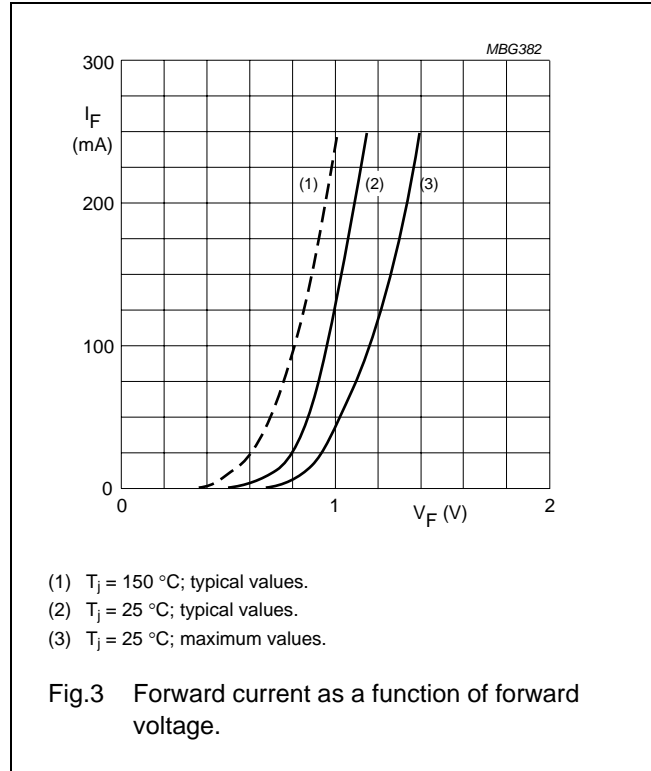
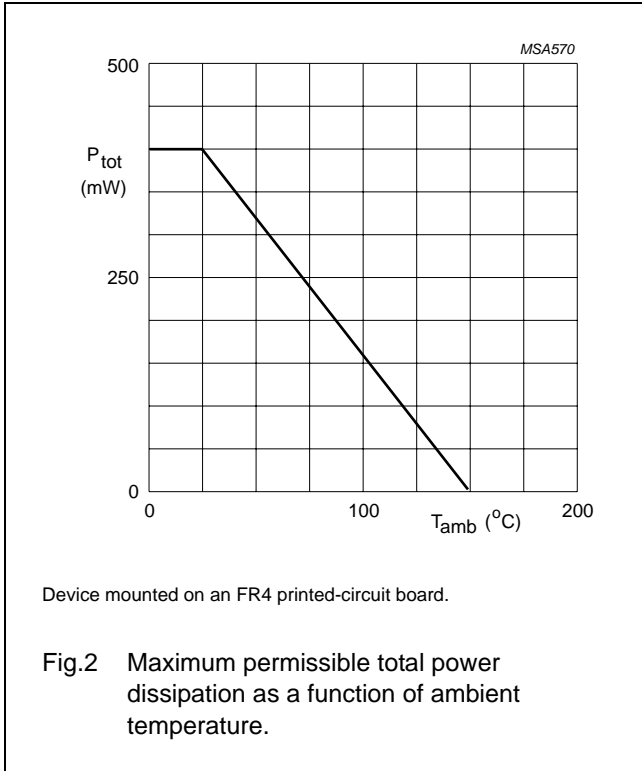
Note

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

High-speed switching diode

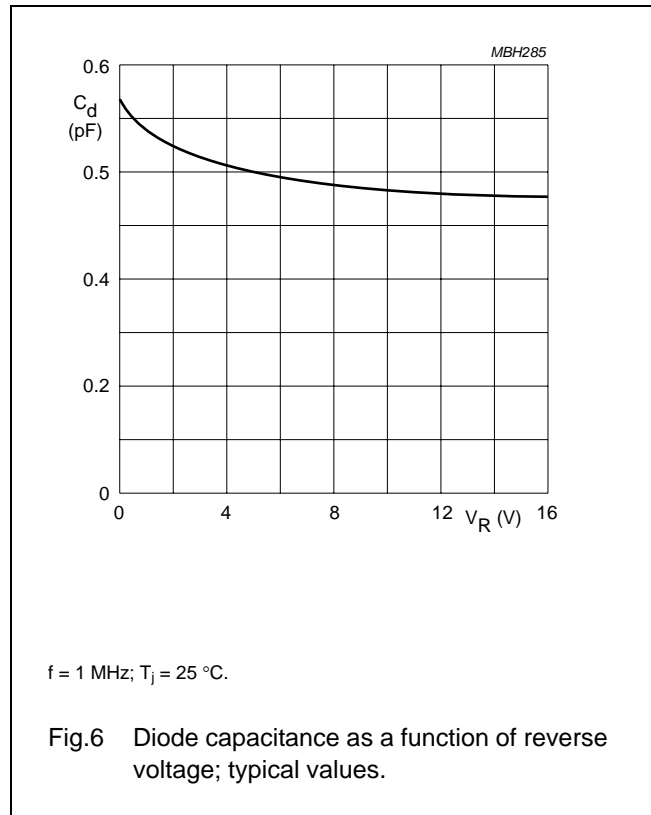
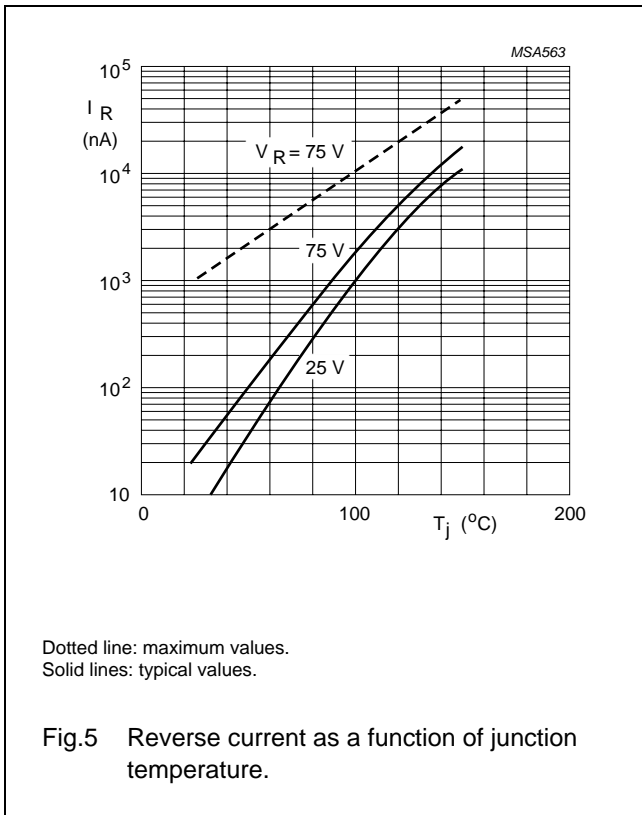
BAS216

GRAPHICAL DATA



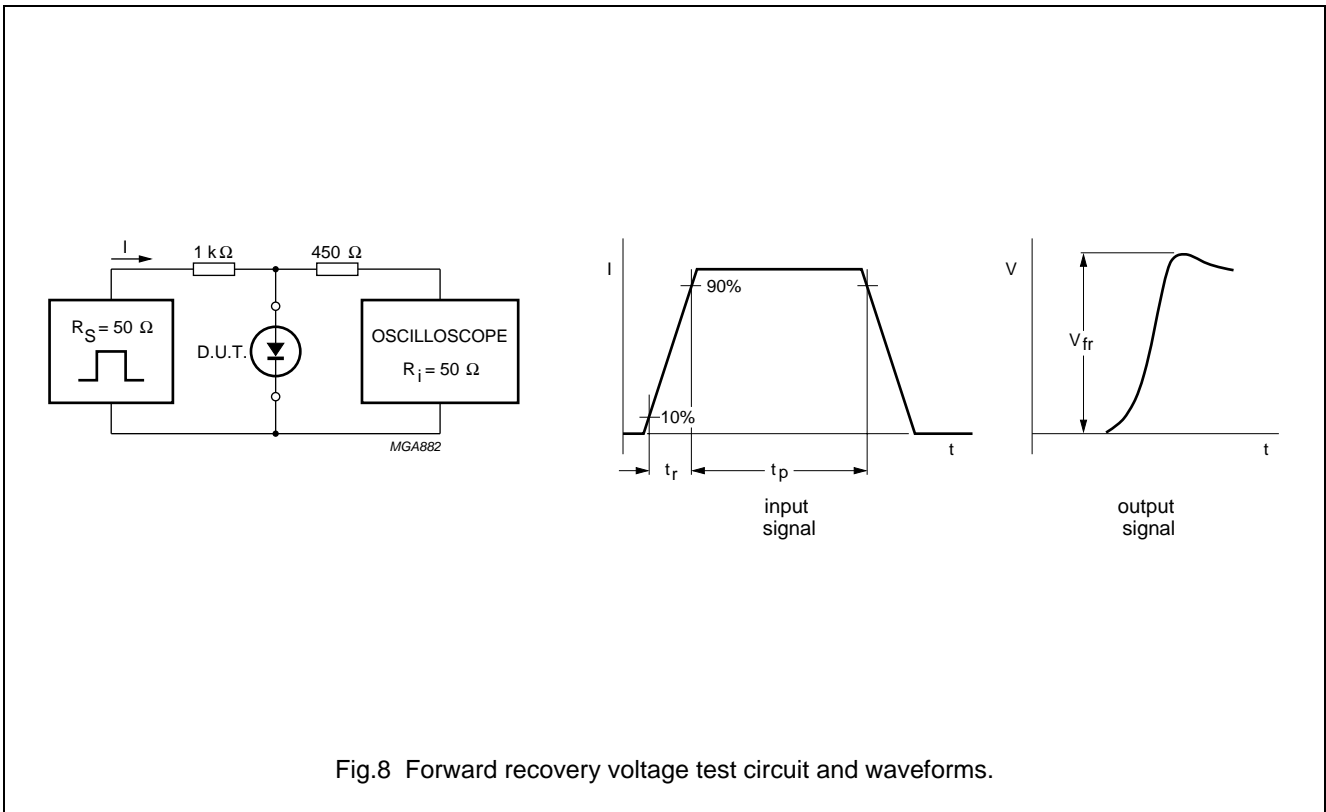
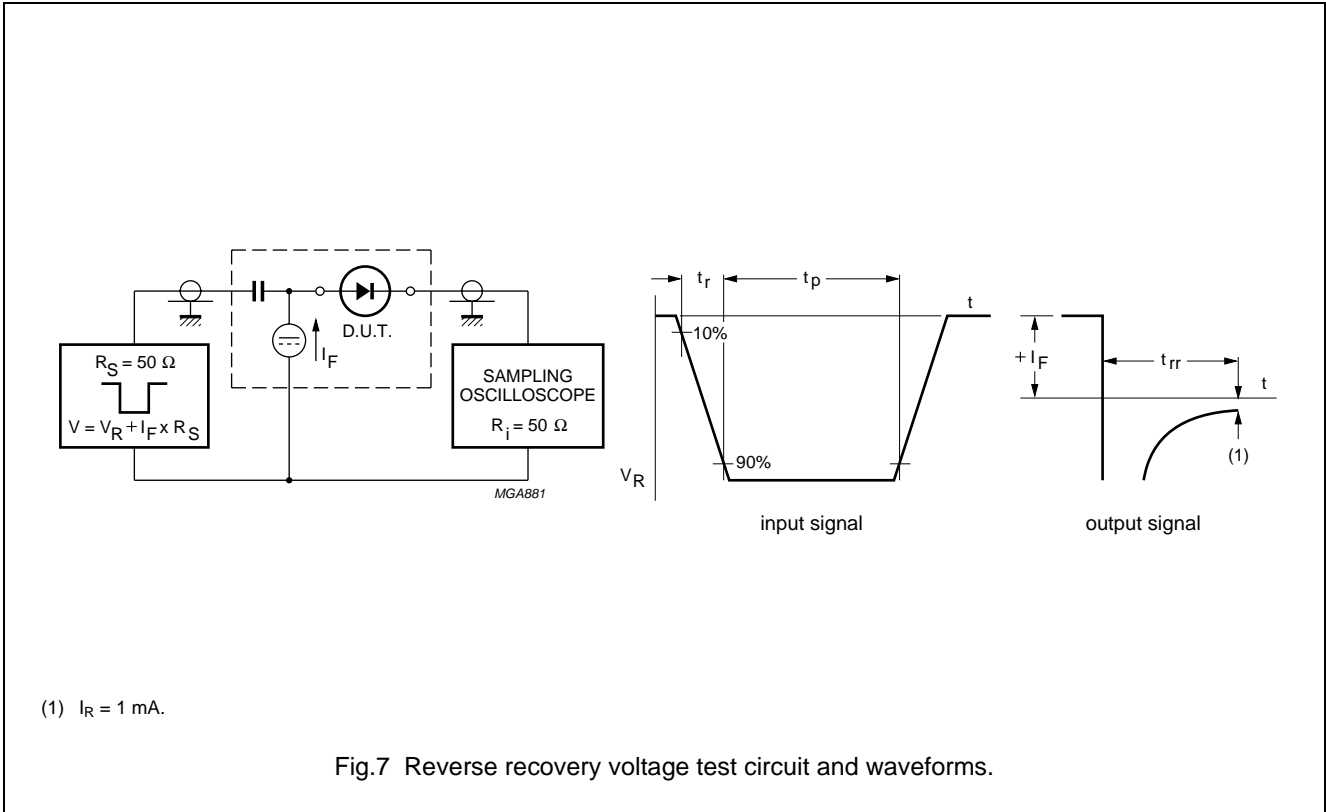
High-speed switching diode

BAS216



High-speed switching diode

BAS216



High-speed switching diode

BAS216

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 1.90 | 1.40 1.10 | 0.1 |

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

High-speed switching diode

BAS216

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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Customer notification

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