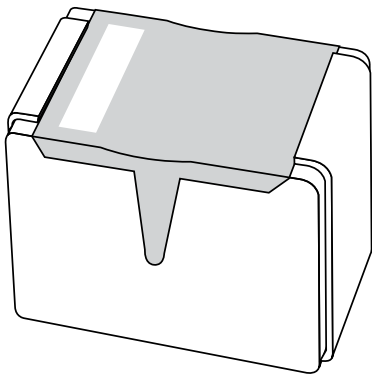


DATA SHEET



BAS216

High-speed switching diode

Product data sheet
Supersedes data of 1999 Apr 22

2002 May 28

High-speed switching diode

BAS216

FEATURES

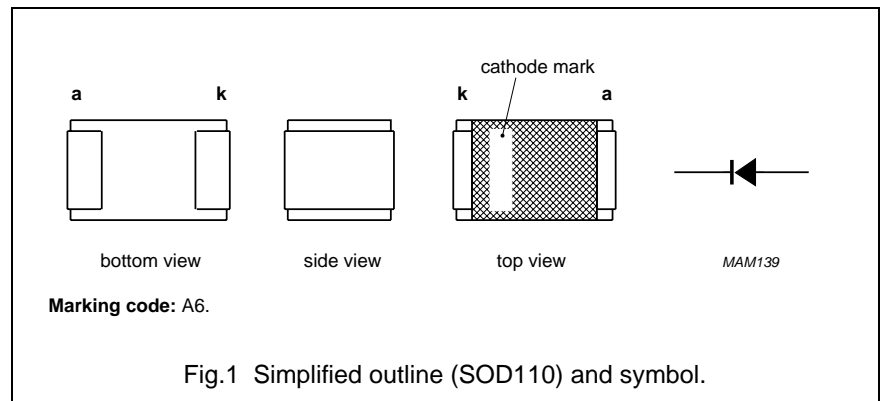
- Small ceramic SMD package
- High switching speed: max. 4 ns
- Continuous reverse voltage: max. 75 V
- Repetitive peak reverse voltage: max. 85 V
- Repetitive peak forward current: max. 500 mA.

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 $I_F = 1\text{ mA}$ $I_F = 10\text{ mA}$ $I_F = 50\text{ mA}$ $I_F = 150\text{ mA}$ | – – – – | 715 855 1 1.25 | mV mV V V |
| I_R | reverse current | see Fig.5 $V_R = 25\text{ V}$ $V_R = 75\text{ V}$ $V_R = 25\text{ V}; T_j = 150\text{ °C}$ $V_R = 75\text{ V}; T_j = 150\text{ °C}$ | – – – – | 30 1 30 50 | nA μA μA 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 |

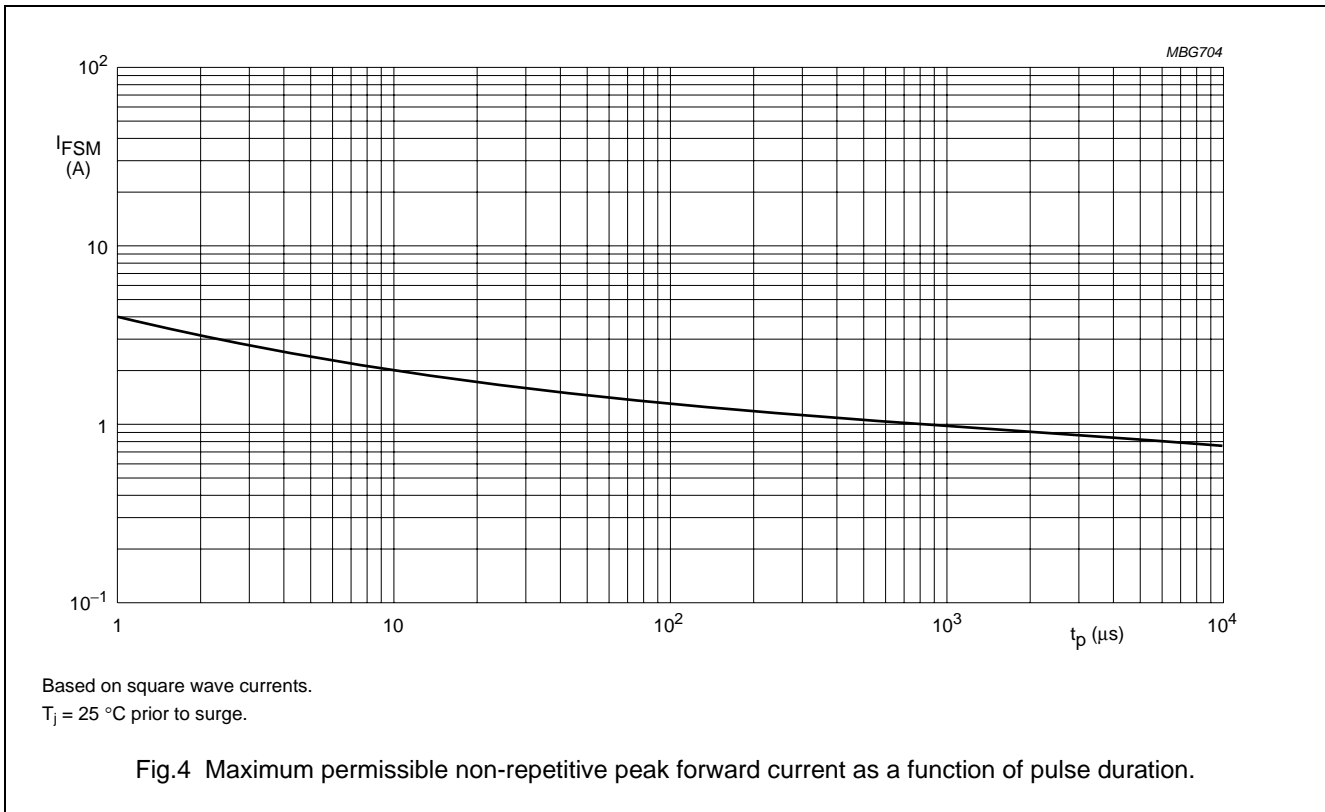
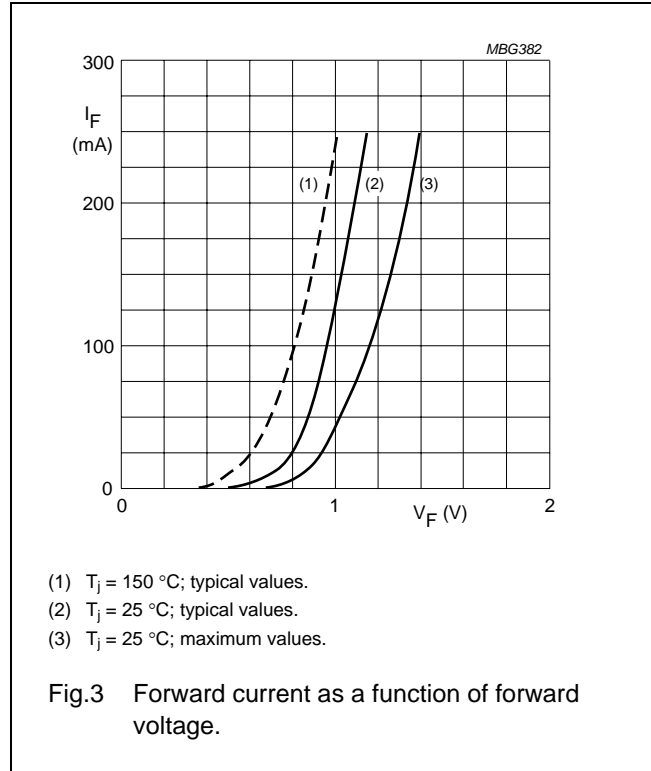
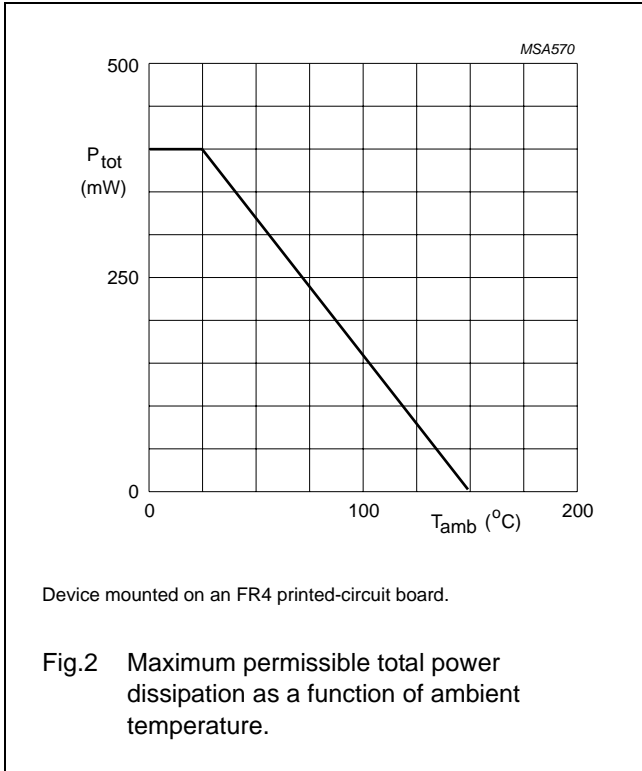
Note

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

High-speed switching diode

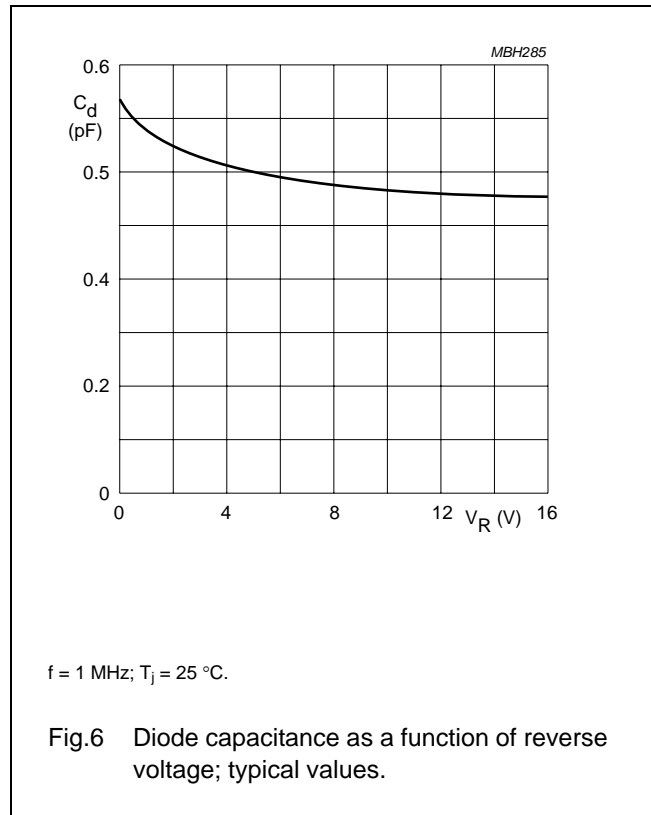
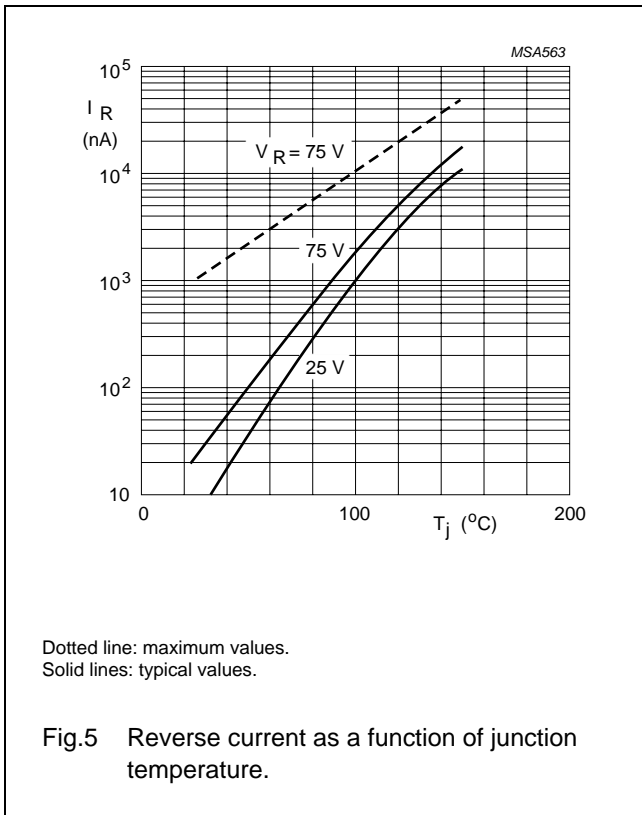
BAS216

GRAPHICAL DATA



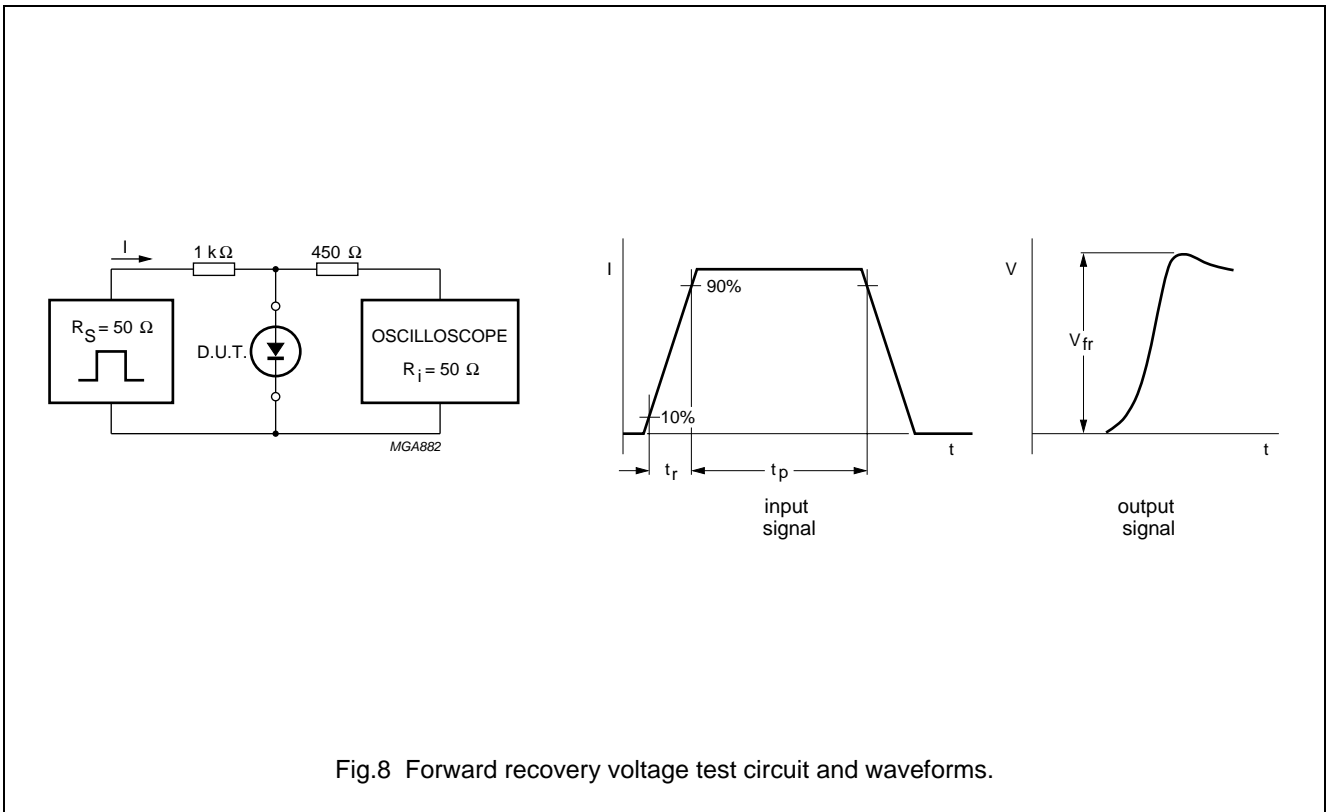
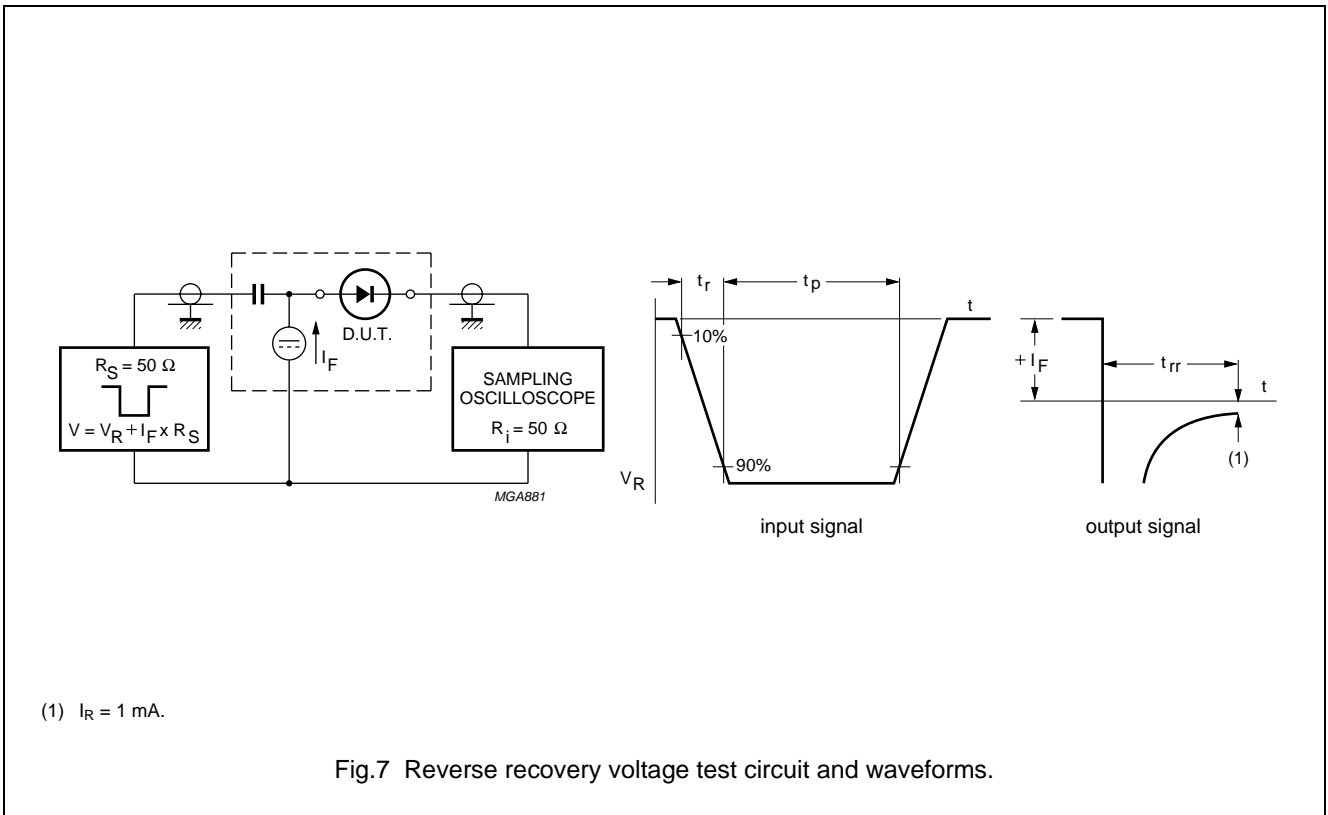
High-speed switching diode

BAS216



High-speed switching diode

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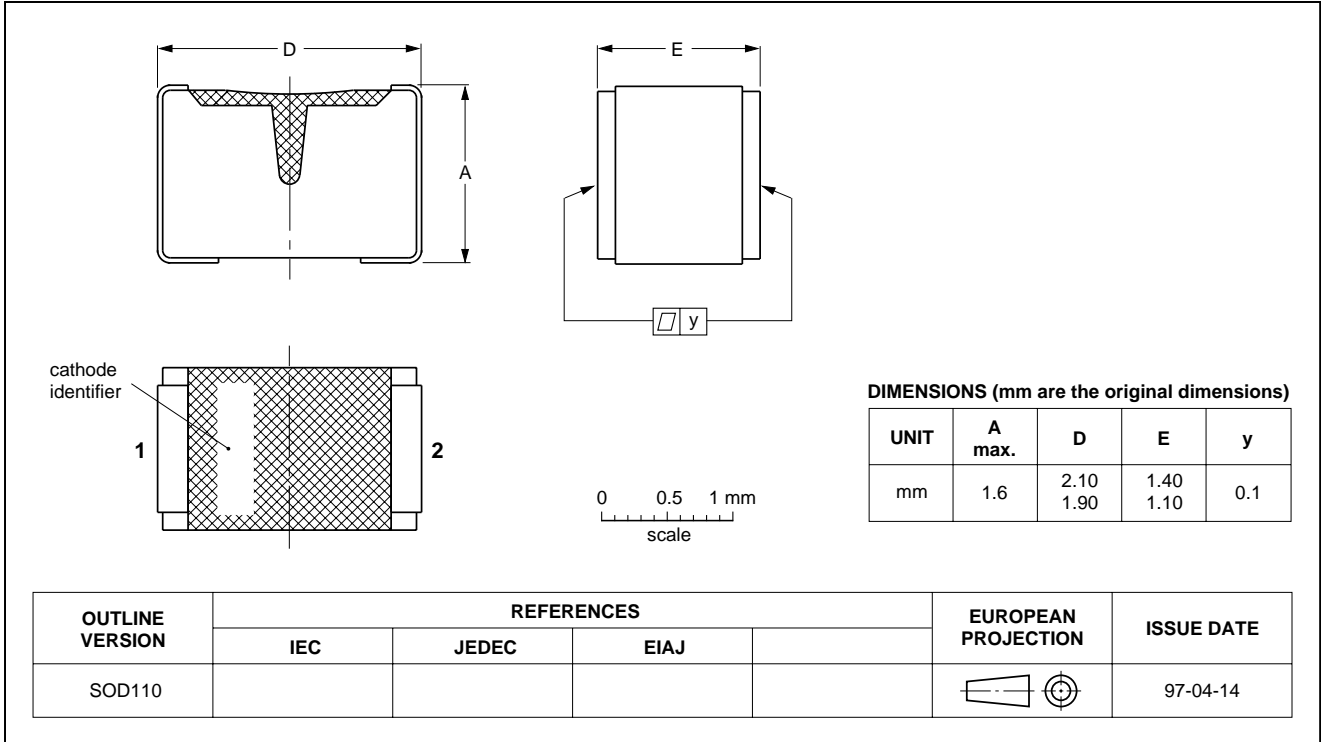
High-speed switching diode

BAS216

PACKAGE OUTLINE

Very small ceramic rectangular surface mounted package

SOD110



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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Customer notification

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