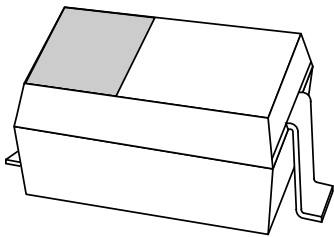


DATA SHEET



BAS321 General purpose diode

Product specification

1999 Feb 09

General purpose diode

BAS321

FEATURES

- Small plastic SMD package
- Switching speed: max. 50 ns
- General application
- Continuous reverse voltage: max. 200 V
- Repetitive peak reverse voltage: max. 250 V
- Repetitive peak forward current: max. 625 mA.

APPLICATIONS

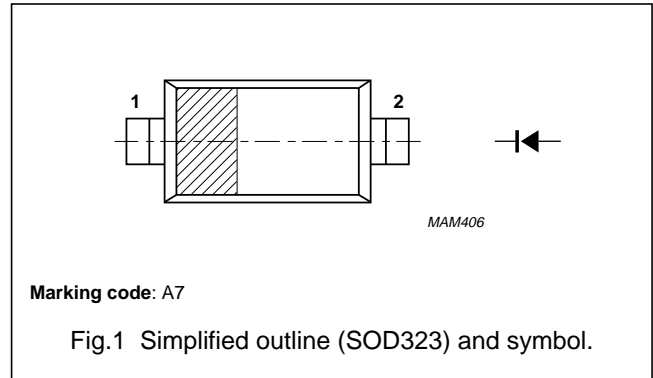
- General purpose switching in e.g. surface mounted circuits.

DESCRIPTION

The BAS321 is a general purpose diode fabricated in planar technology and encapsulated in a plastic SOD323 package.

PINNING

| PIN | DESCRIPTION |
|-----|-------------|
| 1 | cathode |
| 2 | anode |



LIMITING VALUES

In accordance with the Absolute Maximum Rating System (IEC 134).

| SYMBOL | PARAMETER | CONDITIONS | MIN. | MAX. | UNIT |
|-----------|-------------------------------------|--|------|---------------|-------------|
| V_{RRM} | repetitive peak reverse voltage | | – | 250 | V |
| V_R | continuous reverse voltage | | – | 200 | V |
| I_F | continuous forward current | see Fig. 2; note 1 | – | 250 | mA |
| I_{FRM} | repetitive peak forward current | $t_p < 0.5$ ms; $\delta \leq 0.25$ | – | 625 | mA |
| I_{FSM} | non-repetitive peak forward current | square wave; $T_j = 25$ °C prior to surge; see Fig. 4 $t = 1$ μ s $t = 100$ μ s $t = 10$ ms | – | 9 3 1.7 | A A A |
| P_{tot} | total power dissipation | $T_{amb} = 25$ °C; note 1 | – | 300 | mW |
| T_{stg} | storage temperature | | –65 | +150 | °C |
| T_j | junction temperature | | – | 150 | °C |

Note

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

General purpose diode

BAS321

ELECTRICAL CHARACTERISTICS

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

| SYMBOL | PARAMETER | CONDITIONS | MAX. | UNIT |
|----------|-----------------------|--|------------|---------------------|
| V_F | forward voltage | see Fig. 3 $I_F = 100\text{ mA}$ $I_F = 200\text{ mA}$ | 1 1.25 | V V |
| I_R | reverse current | see Fig. 5 $V_R = 200\text{ V}$ $V_R = 200\text{ V}; T_j = 150\text{ °C}$ | 100 100 | nA μA |
| C_d | diode capacitance | $f = 1\text{ MHz}; V_R = 0$; see Fig. 6 | 2 | pF |
| t_{rr} | reverse recovery time | when switched from $I_F = 30\text{ mA}$ to $I_R = 30\text{ mA}; R_L = 100\ \Omega$; measured at $I_R = 3\text{ mA}$; see Fig.8 | 50 | ns |

THERMAL CHARACTERISTICS

| SYMBOL | PARAMETER | CONDITIONS | VALUE | UNIT |
|---------------|---|-------------------------------|-------|------|
| $R_{th\ j-s}$ | thermal resistance from junction to soldering point | $T_s = 90\text{ °C}$; note 1 | 130 | K/W |
| $R_{th\ j-a}$ | thermal resistance from junction to ambient | note 2 | 366 | K/W |

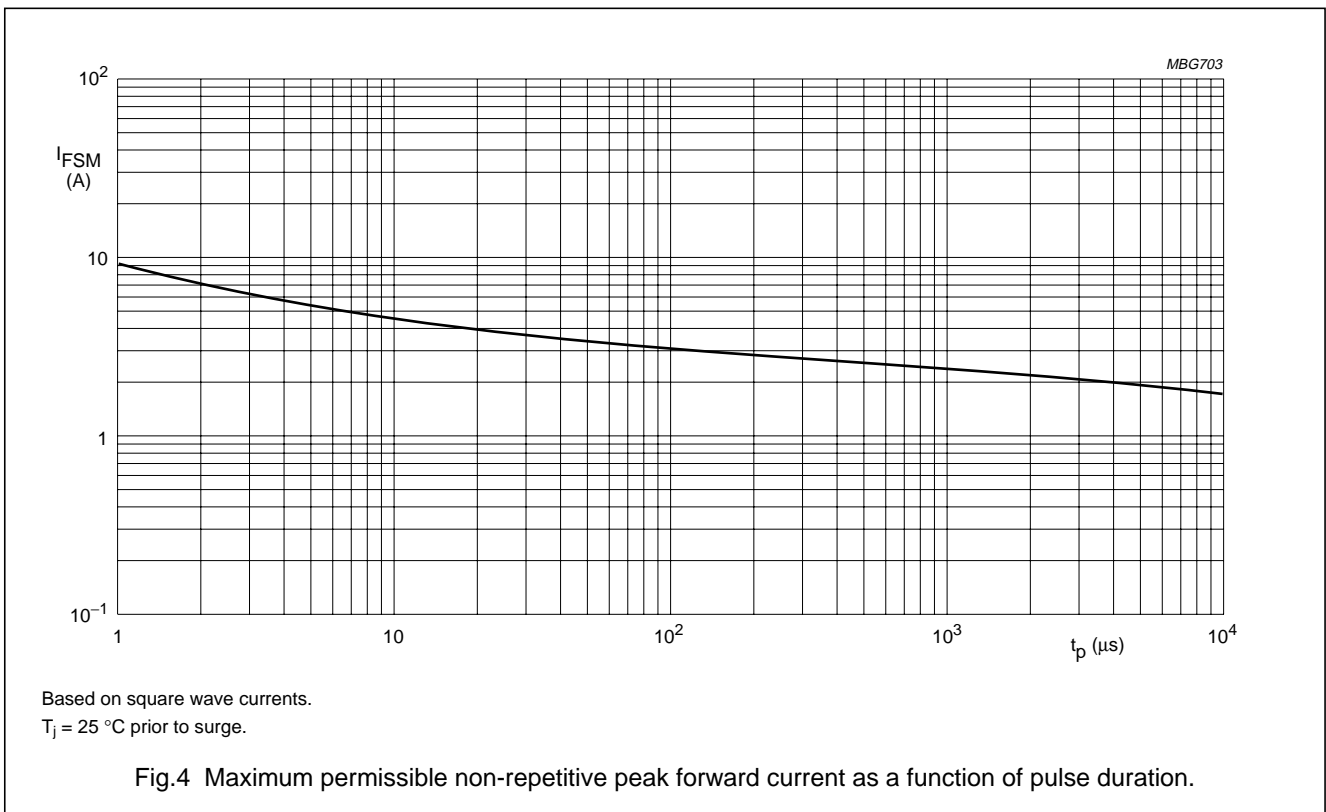
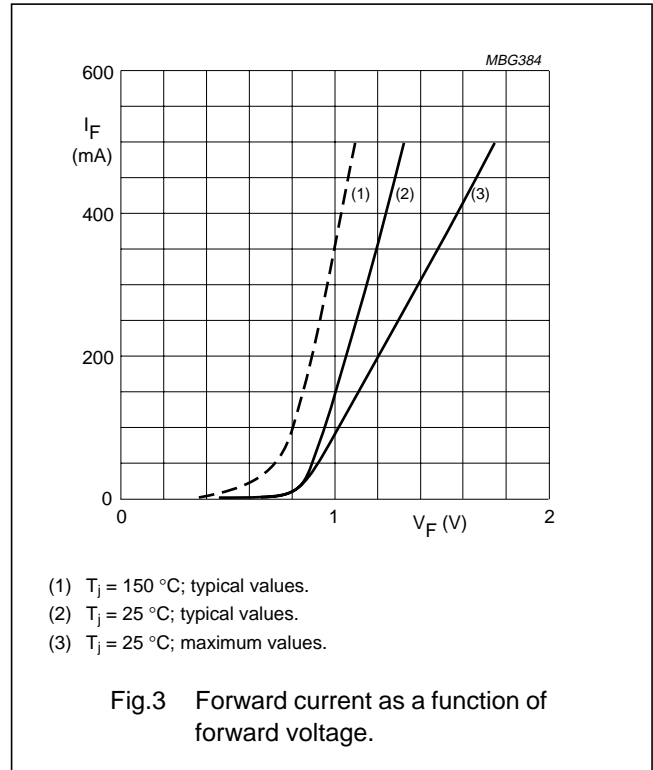
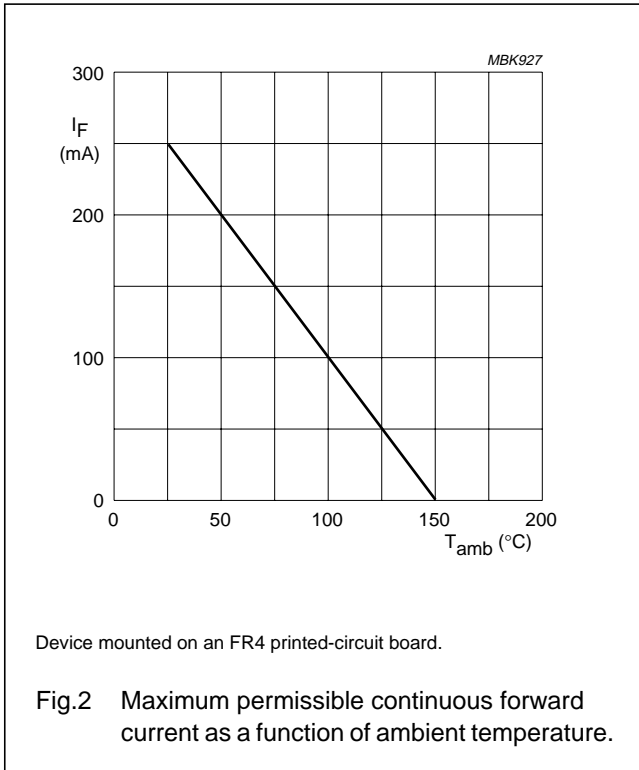
Notes

1. Soldering point of cathode tab.
2. Device mounted on an FR4 printed circuit board.

General purpose diode

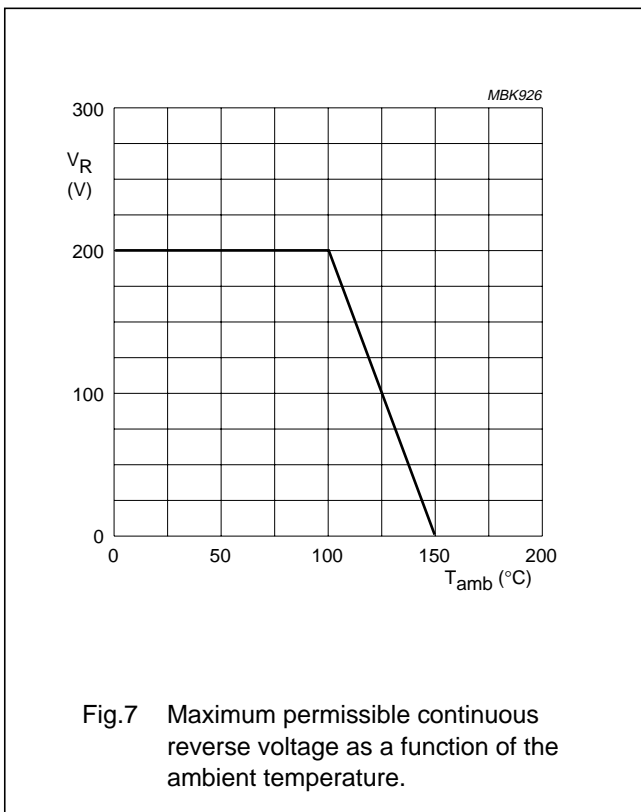
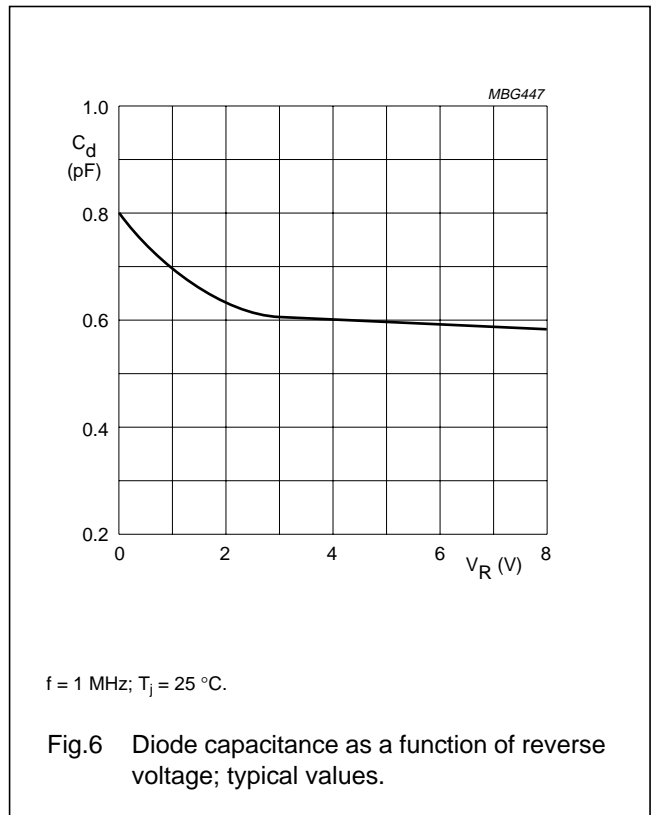
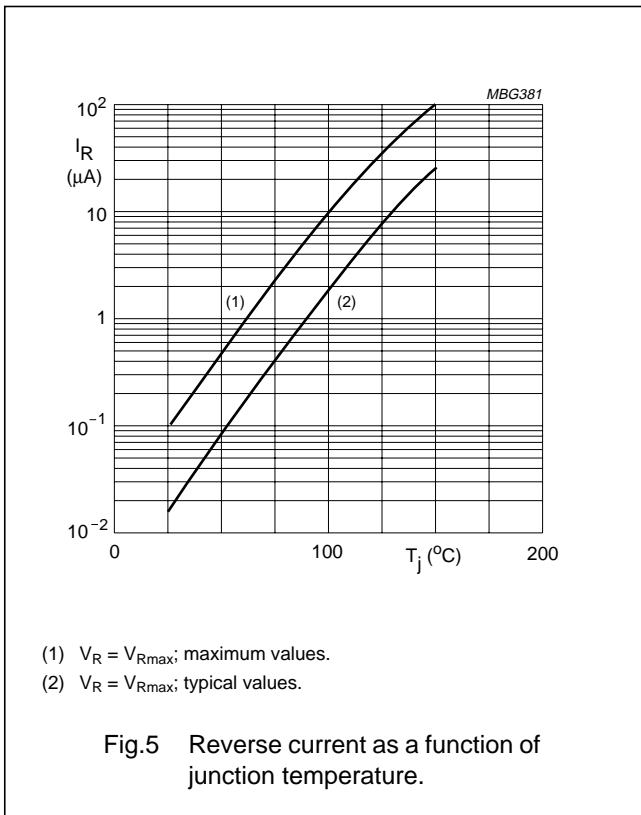
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GRAPHICAL DATA



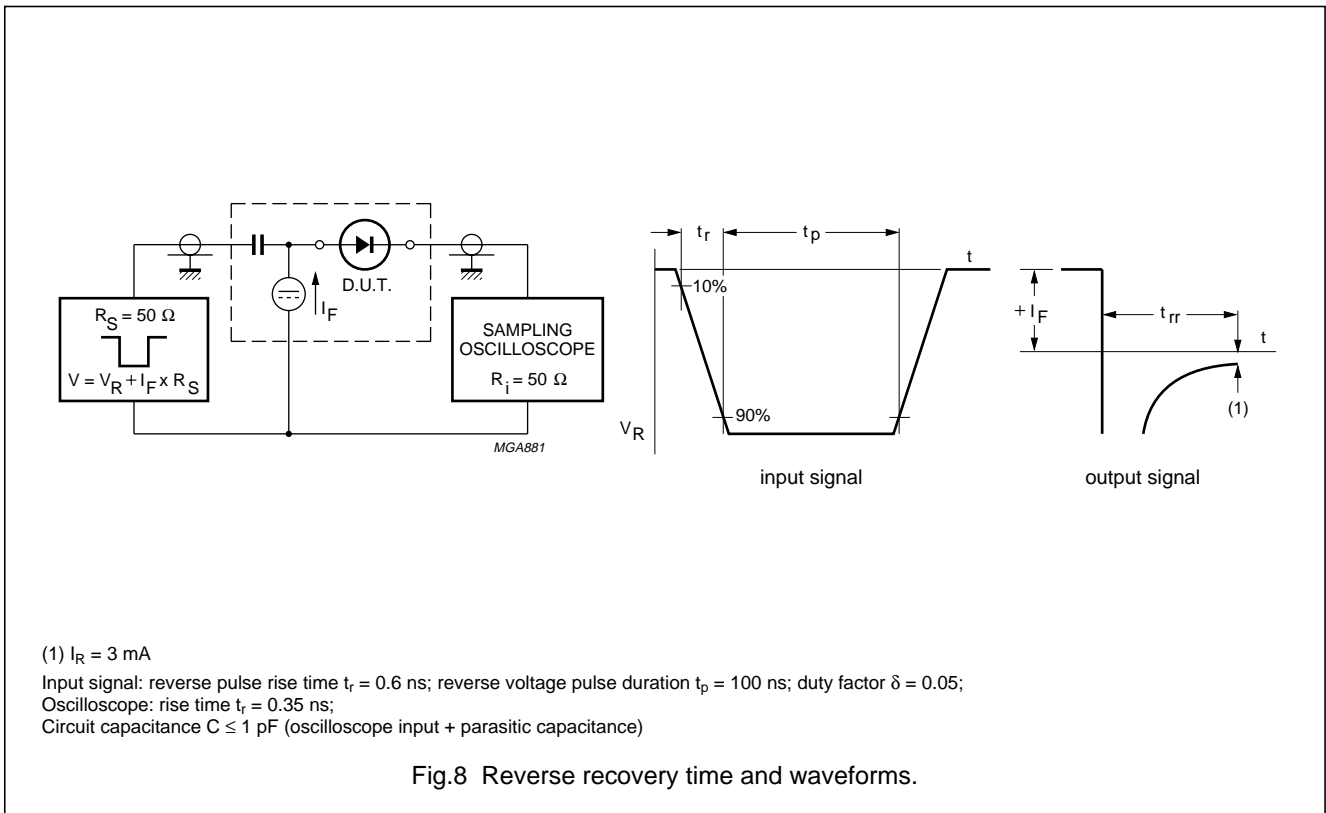
General purpose diode

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General purpose diode

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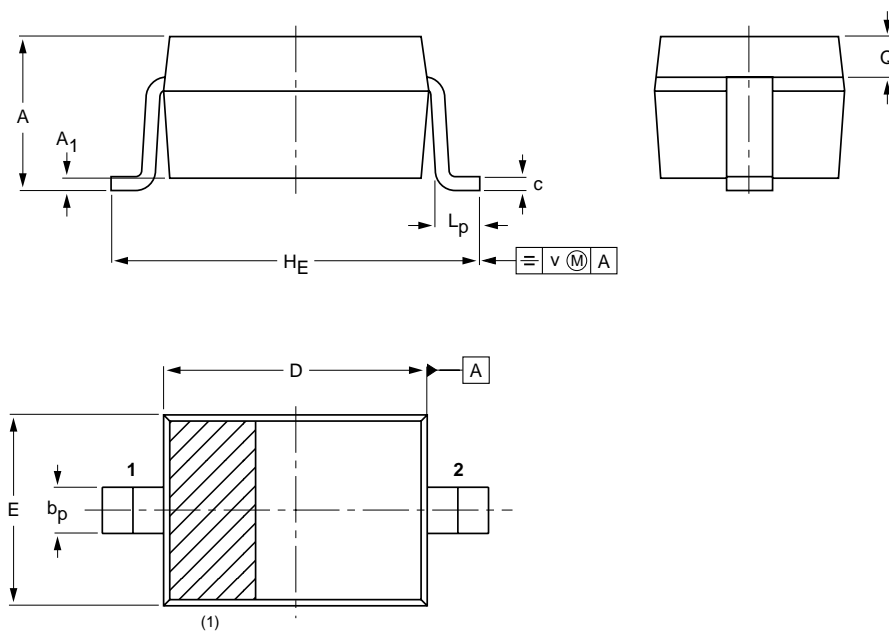
General purpose diode

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PACKAGE OUTLINE

Plastic surface mounted package; 2 leads

SOD323



DIMENSIONS (mm are the original dimensions)

| UNIT | A | A ₁ max. | b _p | c | D | E | H _E | L _p | Q | v |
|------|------------|------------------------|----------------|--------------|------------|--------------|----------------|----------------|--------------|-----|
| mm | 1.1 0.8 | +0.05 -0.05 | 0.40 0.25 | 0.25 0.10 | 1.8 1.6 | 1.35 1.15 | 2.7 2.3 | 0.45 0.15 | 0.25 0.15 | 0.2 |

Note

1. The marking band indicate the cathode.

| OUTLINE VERSION | REFERENCES | | | | EUROPEAN PROJECTION | ISSUE DATE |
|--------------------|------------|-------|------|--|------------------------|------------|
| | IEC | JEDEC | EIAJ | | | |
| SOD323 | | | | | | 97-12-10 |

 General purpose diode

BAS321

DEFINITIONS

| | |
|---|---|
| Data Sheet Status | |
| Objective specification | This data sheet contains target or goal specifications for product development. |
| Preliminary specification | This data sheet contains preliminary data; supplementary data may be published later. |
| Product specification | This data sheet contains final product specifications. |
| Limiting values | |
| Limiting values given are in accordance with the Absolute Maximum Rating System (IEC 134). 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. | |
| Application information | |
| Where application information is given, it is advisory and does not form part of the specification. | |

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These products are not designed for use in life support appliances, devices, or systems where malfunction of these products can reasonably be expected to result in personal injury. Philips customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Philips for any damages resulting from such improper use or sale.

General purpose diode

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NOTES

General purpose diode

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NOTES

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NOTES

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