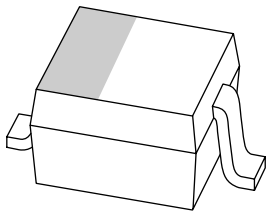


DATA SHEET



BAS321 General purpose diode

Product data sheet
Supersedes data of 1999 Feb 09

2004 Jan 26

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

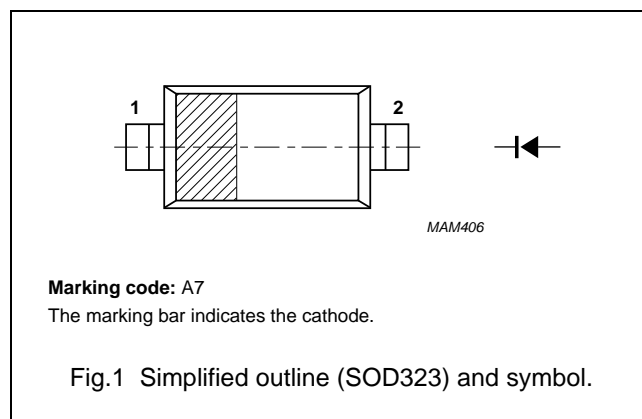
- General purpose switching in e.g. surface mounted circuits.

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



ORDERING INFORMATION

TYPE NUMBER	PACKAGE		
	NAME	DESCRIPTION	VERSION
BAS321	—	plastic surface mounted package; 2 leads	SOD323

LIMITING VALUES

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

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	—	9	A
		$t = 100$ μ s	—	3	A
		$t = 10$ ms	—	1.7	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

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 $I_R = 30\text{ mA}; R_L = 100\text{ }\Omega$; 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

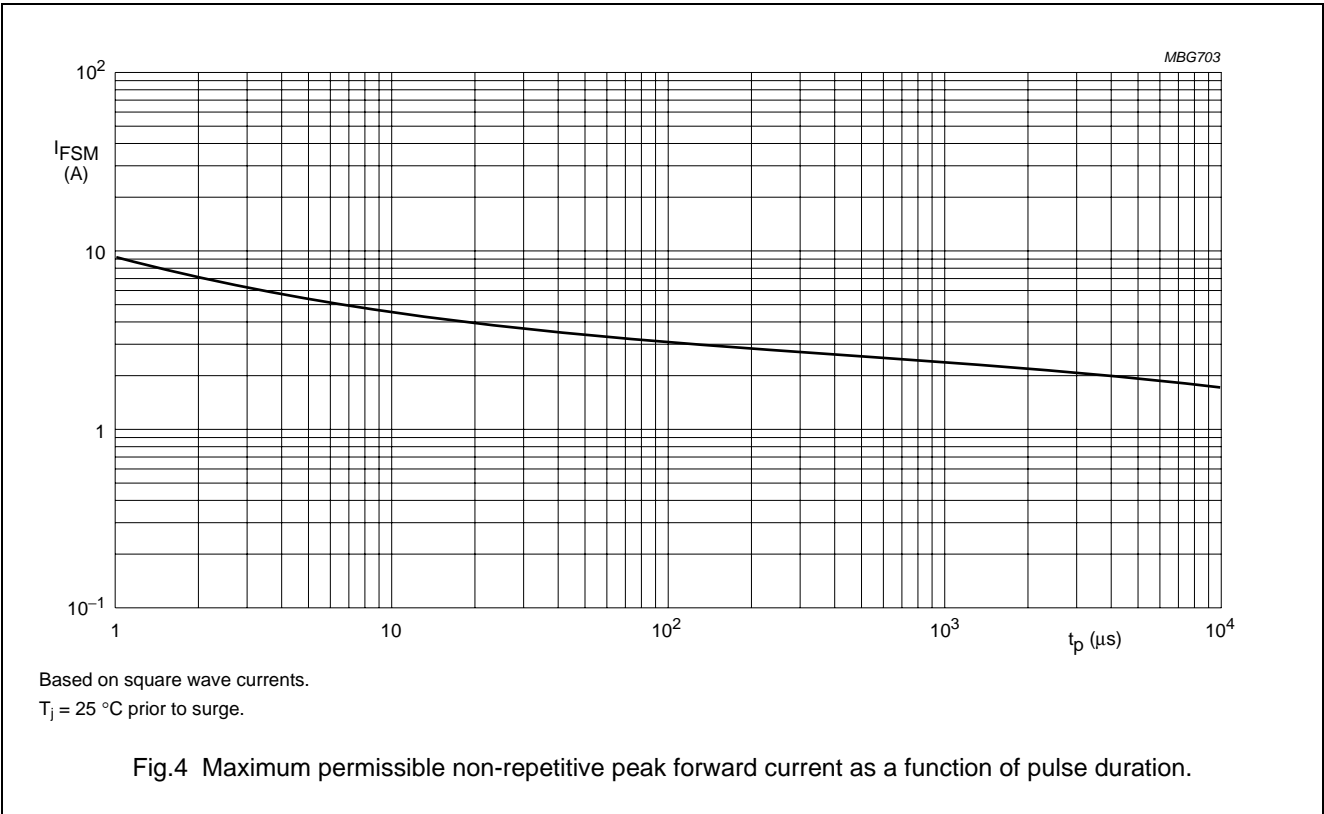
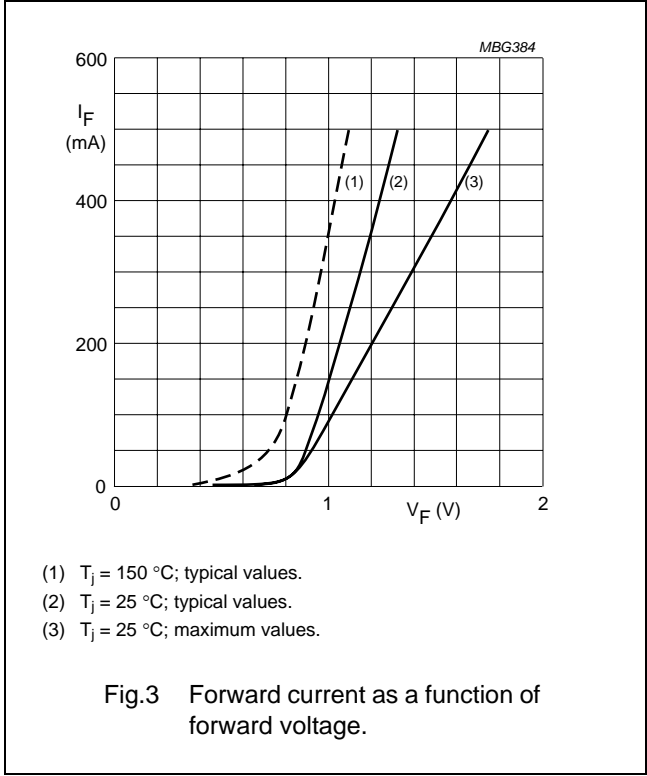
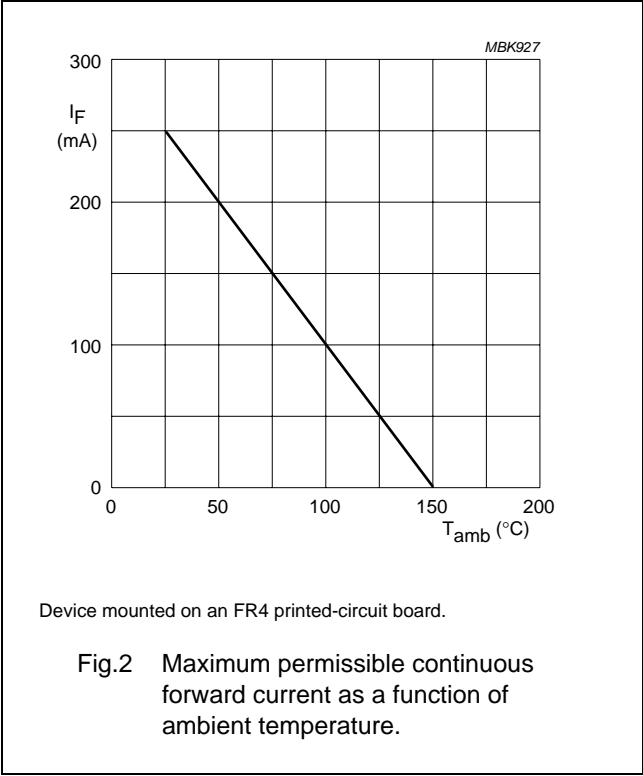
Notes

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

General purpose diode

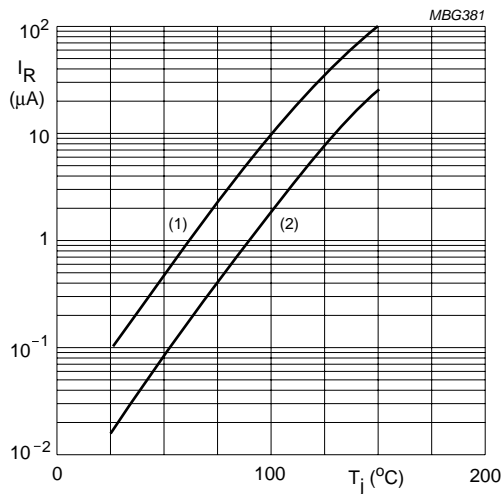
BAS321

GRAPHICAL DATA



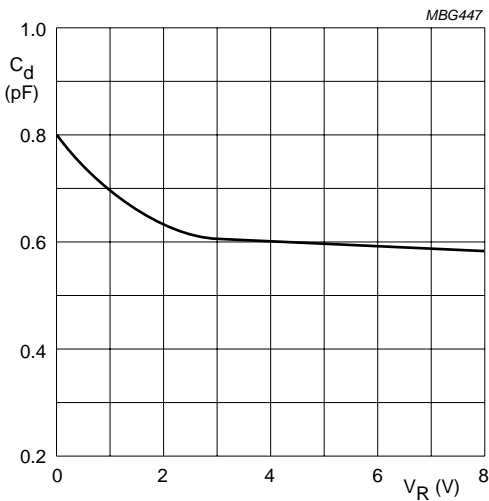
General purpose diode

BAS321



- (1) $V_R = V_{Rmax}$; maximum values.
- (2) $V_R = V_{Rmax}$; typical values.

Fig.5 Reverse current as a function of junction temperature.



$f = 1\text{ MHz}$; $T_j = 25\text{ }^{\circ}C$.

Fig.6 Diode capacitance as a function of reverse voltage; typical values.

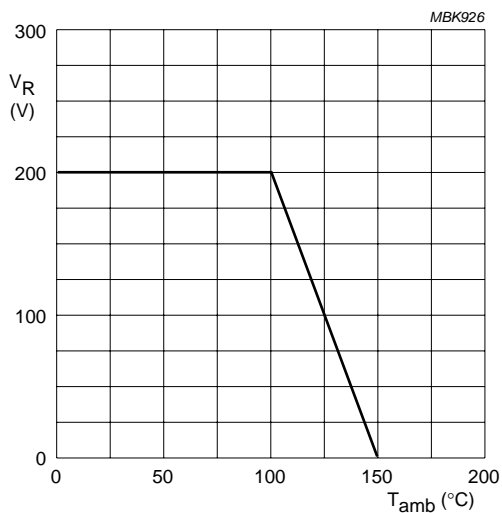
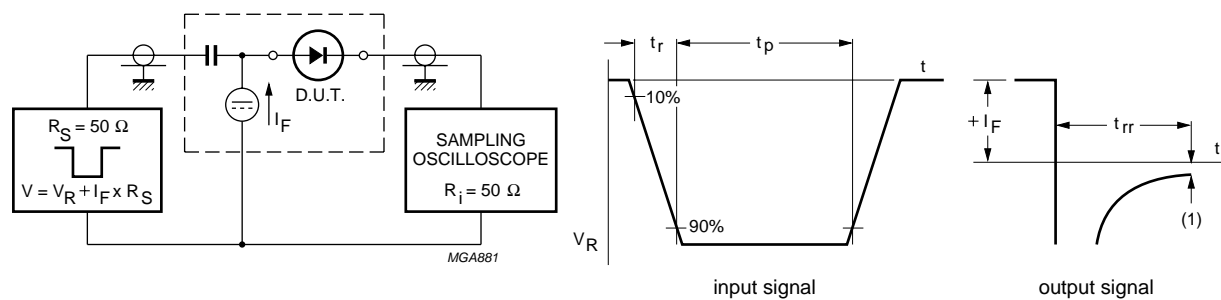


Fig.7 Maximum permissible continuous reverse voltage as a function of the ambient temperature.

General purpose diode

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(1) $I_R = 3\text{ mA}$

Input signal: reverse pulse rise time $t_r = 0.6\text{ ns}$; reverse voltage pulse duration $t_p = 100\text{ ns}$; duty factor $\delta = 0.05$;

Oscilloscope: rise time $t_r = 0.35\text{ ns}$;

Circuit capacitance $C \leq 1\text{ pF}$ (oscilloscope input + parasitic capacitance)

Fig.8 Reverse recovery time and waveforms.

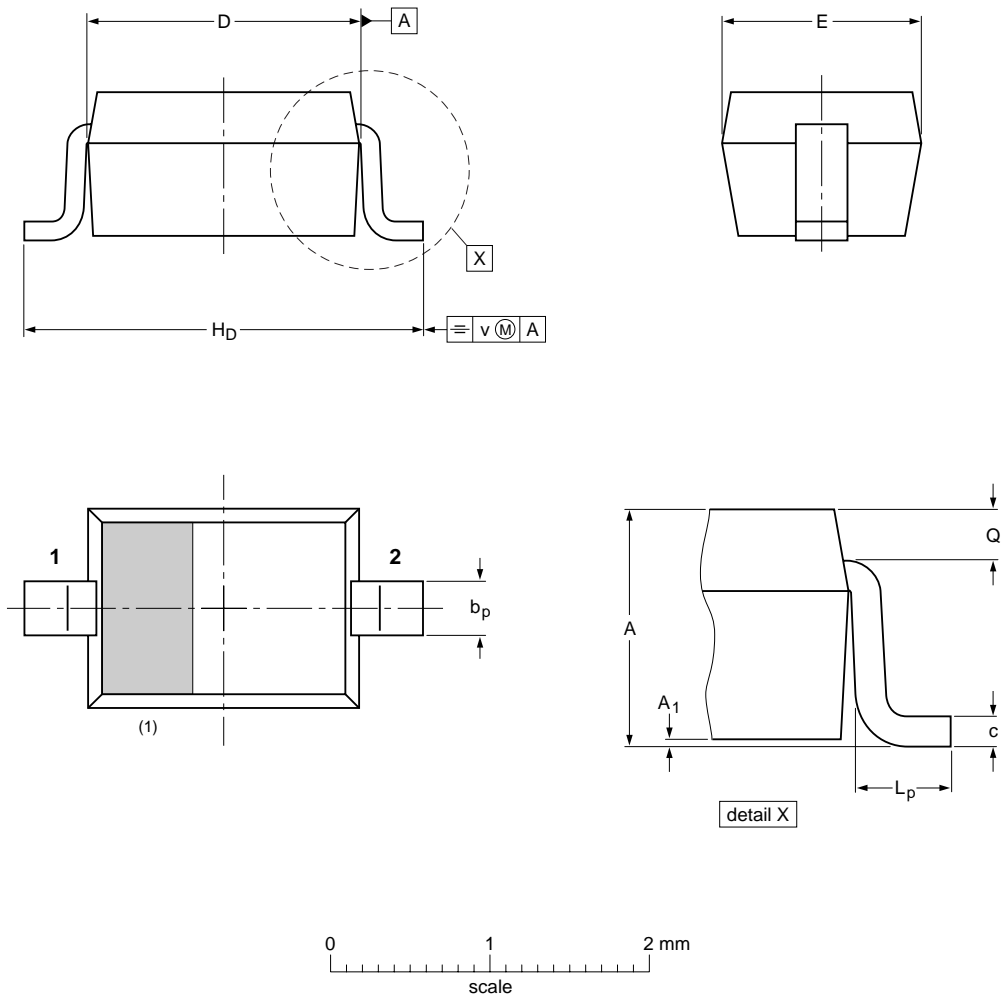
General purpose diode

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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 _D	L _p	Q	v
mm	1.1 0.8	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 bar indicates the cathode

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	JEITA			
SOD323			SC-76			03-12-17 06-03-16

General purpose diode

BAS321

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.

Notes

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

This data sheet was changed to reflect the new company name NXP Semiconductors, including new legal definitions and disclaimers. No changes were made to the technical content, except for package outline drawings which were updated to the latest version.

Contact information

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