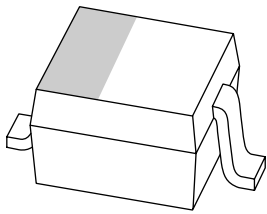


# DATA SHEET



## **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

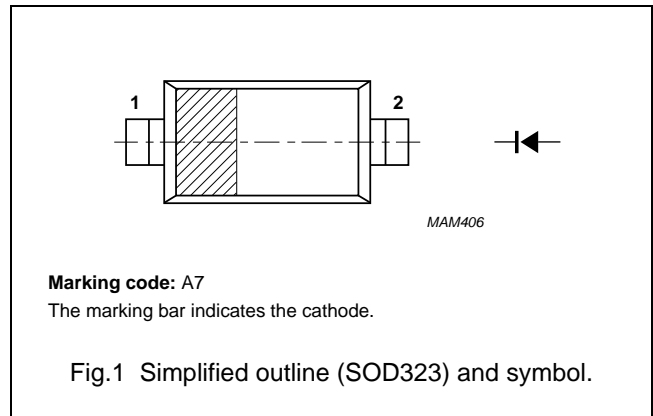
- General purpose switching in e.g. surface mounted circuits.

## 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			
		$t = 1$ $\mu$ s	–	9	A
		$t = 100$ $\mu$ 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 $\mu\text{A}$
$C_d$	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

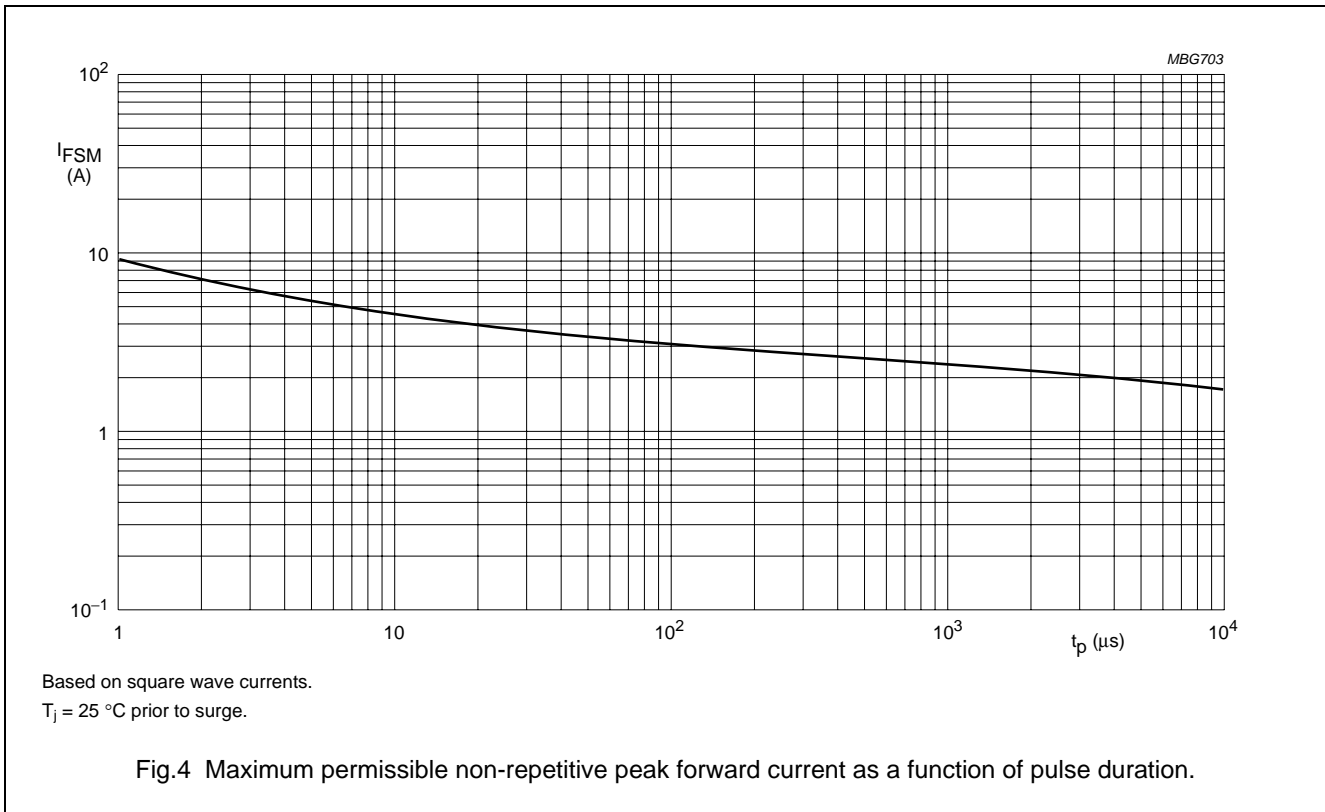
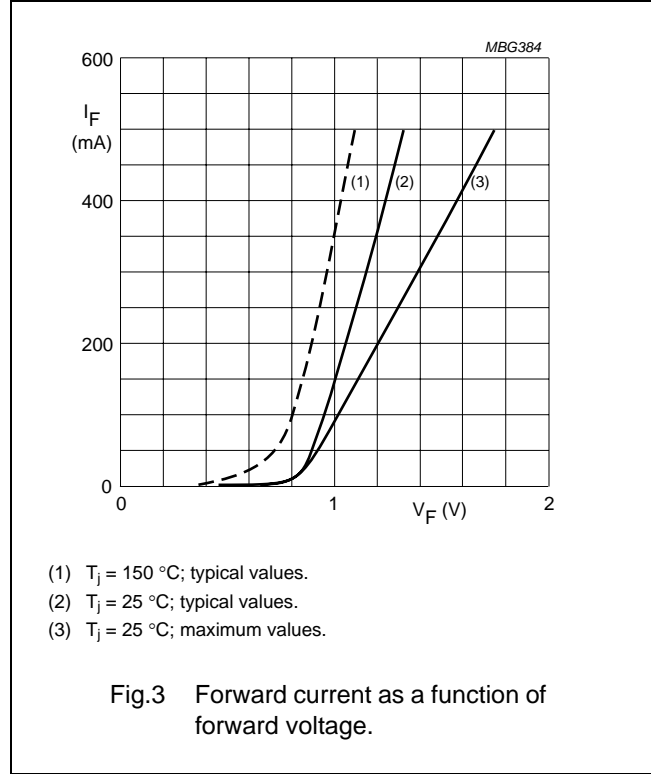
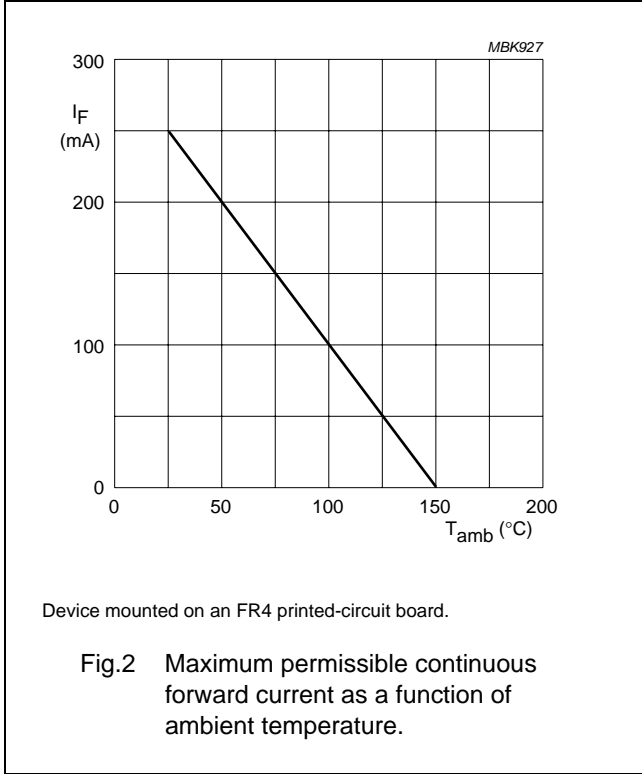
**Notes**

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

# General purpose diode

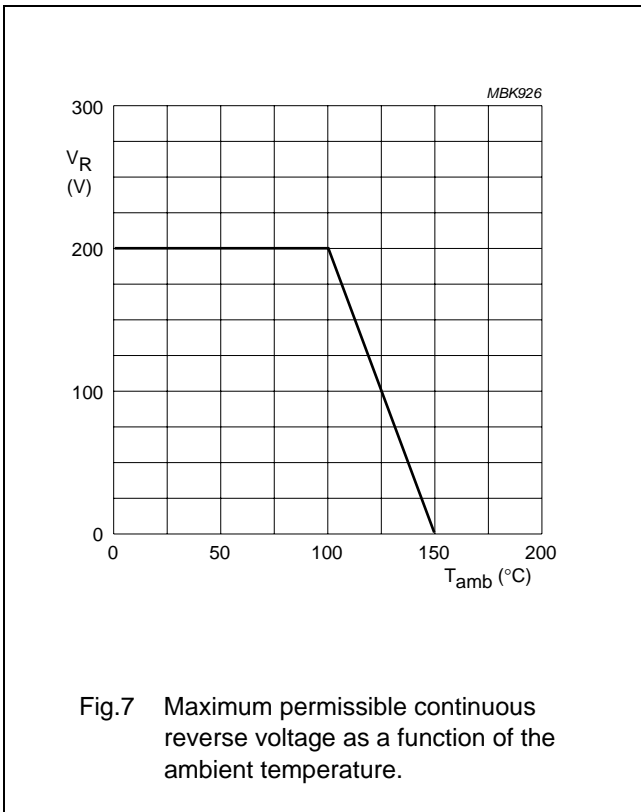
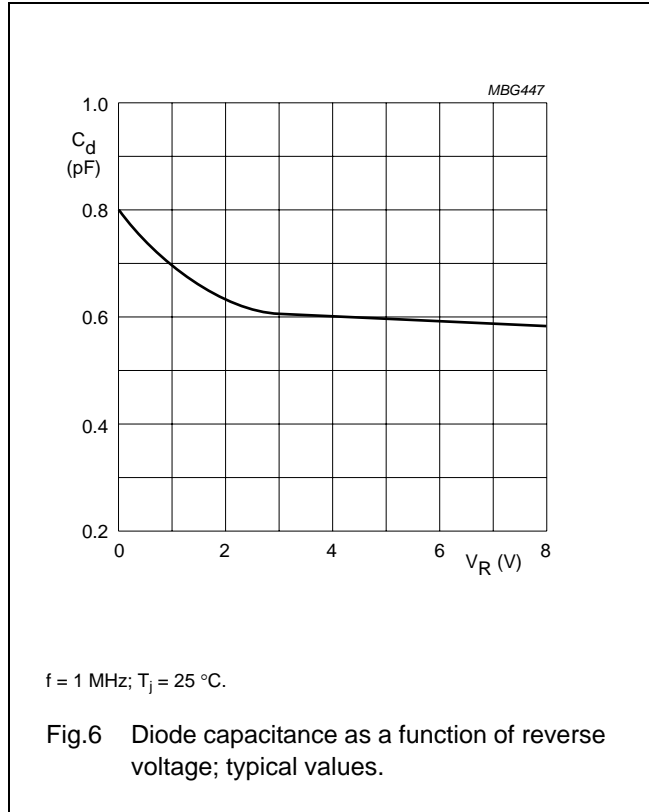
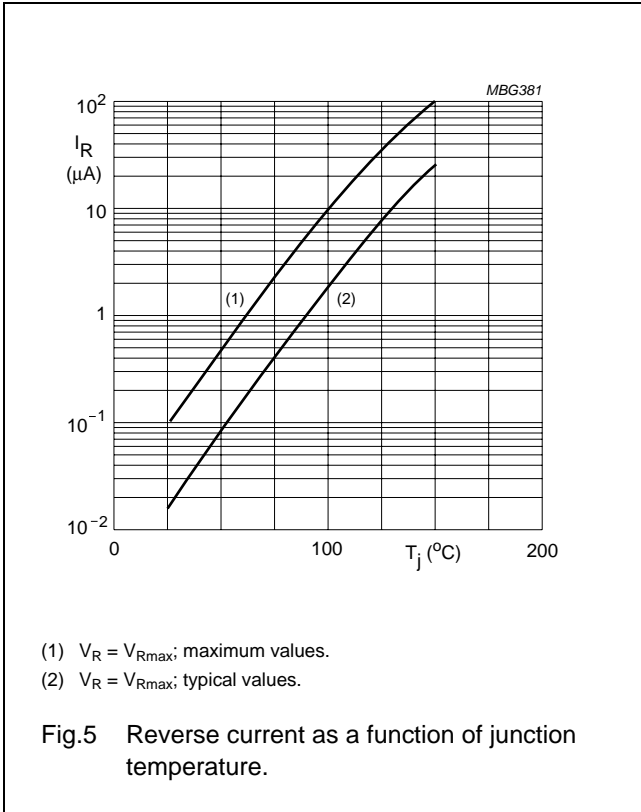
# BAS321

## GRAPHICAL DATA



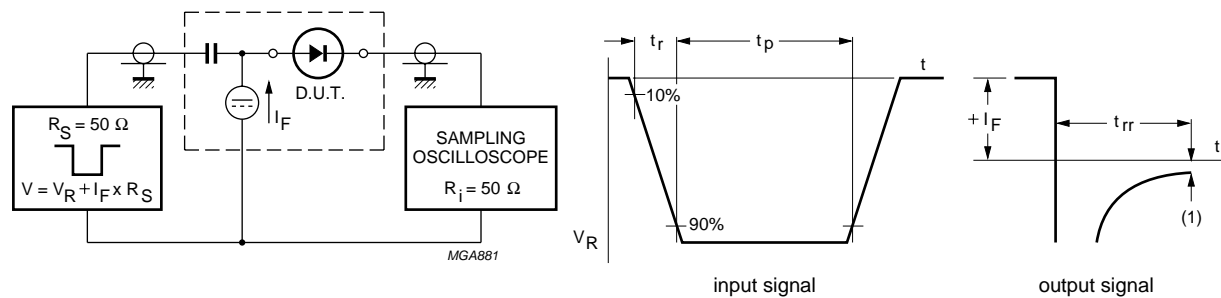
General purpose diode

BAS321



General purpose diode

BAS321



(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.

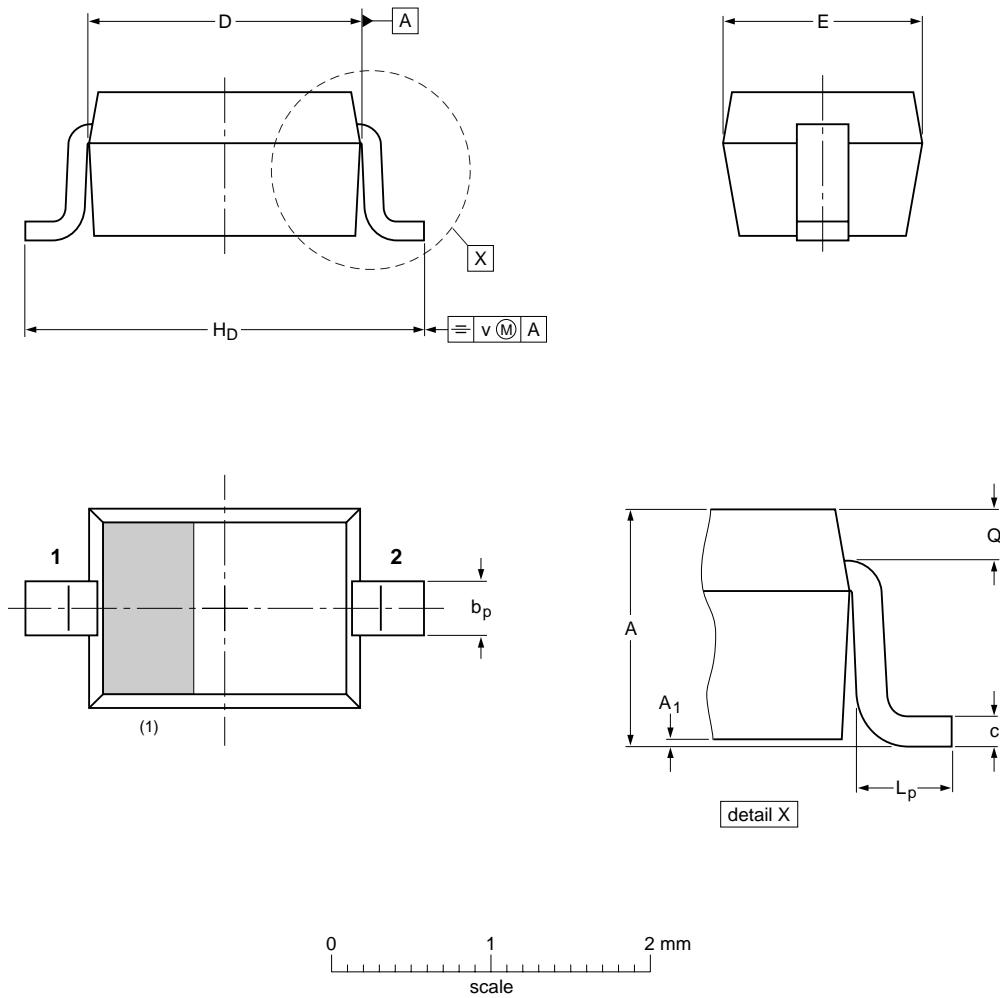
General purpose diode

BAS321

PACKAGE OUTLINE

Plastic surface-mounted package; 2 leads

SOD323



DIMENSIONS (mm are the original dimensions)

UNIT	A	A <sub>1</sub> max	b <sub>p</sub>	c	D	E	H <sub>D</sub>	L <sub>p</sub>	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		<del>03-12-17</del> 06-03-16

# General purpose diode

BAS321

## DATA SHEET STATUS

DOCUMENT STATUS <sup>(1)</sup>	PRODUCT STATUS <sup>(2)</sup>	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**

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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