DISCRETE SEMICONDUCTORS



Product specification Supersedes data of 1999 Feb 09 2004 Jan 26



HILIP

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.

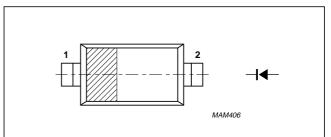
DESCRIPTION

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

ORDERING INFORMATION

PINNING

PIN	DESCRIPTION
1	cathode
2	anode



Marking code: A7 The marking bar indicates the cathode.

Fig.1 Simplified outline (SOD323) and symbol.

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

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	$t_p < 0.5 \text{ ms}; \delta \le 0.25$	-	625	mA
I _{FSM}	non-repetitive peak forward current	square wave; T _j = 25 °C prior to surge; see Fig.4			
		t = 1 μs	-	9	A
		t = 100 μs	_	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
Tj	junction temperature		_	150	°C

Note

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

BAS321

CHARACTERISTICS

 $T_j = 25 \ ^{\circ}C$ unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MAX.	UNIT
V _F	forward voltage	see Fig.3		
		I _F = 100 mA	1	V
		I _F = 200 mA	1.25	V
I _R	reverse current	see Fig.5		
		V _R = 200 V	100	nA
		V _R = 200 V; T _j = 150 °C	100	μA
C _d	diode capacitance	$f = 1 \text{ MHz}; V_R = 0; \text{ see Fig.6}$	2	pF
t _{rr}	reverse recovery time	when switched from $I_F = 30$ mA to $I_R = 30$ mA; $R_L = 100 \Omega$; measured at $I_R = 3$ 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°C; note 1	130	K/W
R _{th(j-a)}	thermal resistance from junction to ambient	note 2	366	K/W

Notes

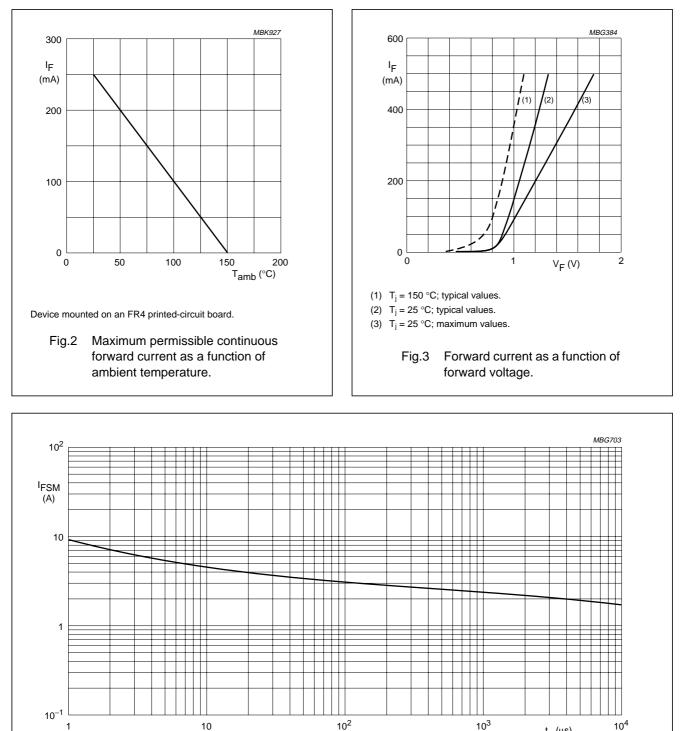
1. Soldering point of cathode tab.

2. Device mounted on an FR4 printed circuit board.

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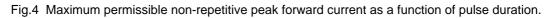
t_p (μs)

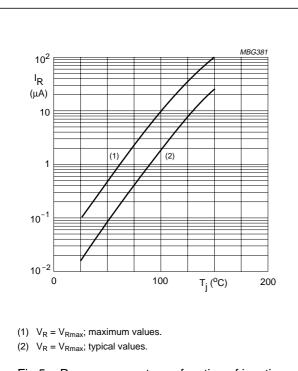
GRAPHICAL DATA

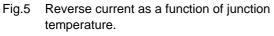


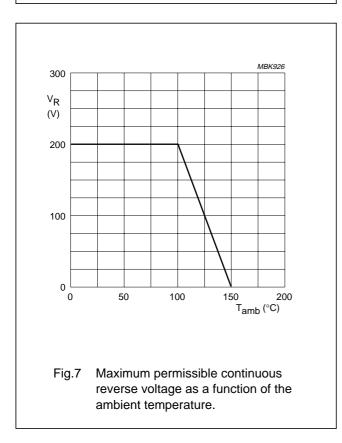
Based on square wave currents.

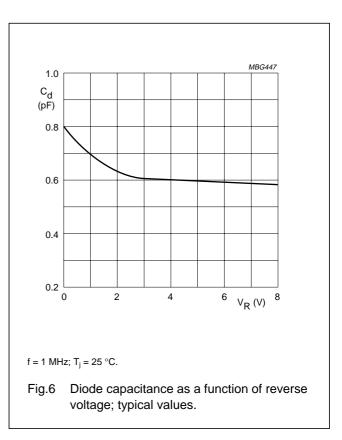
 $T_j = 25 \ ^{\circ}C$ prior to surge.

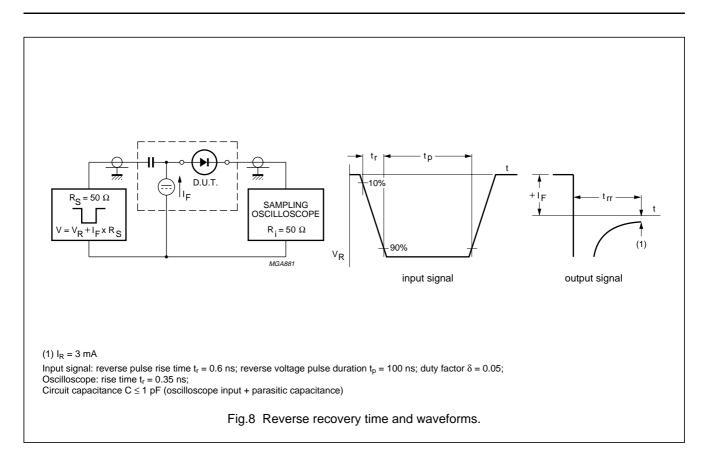






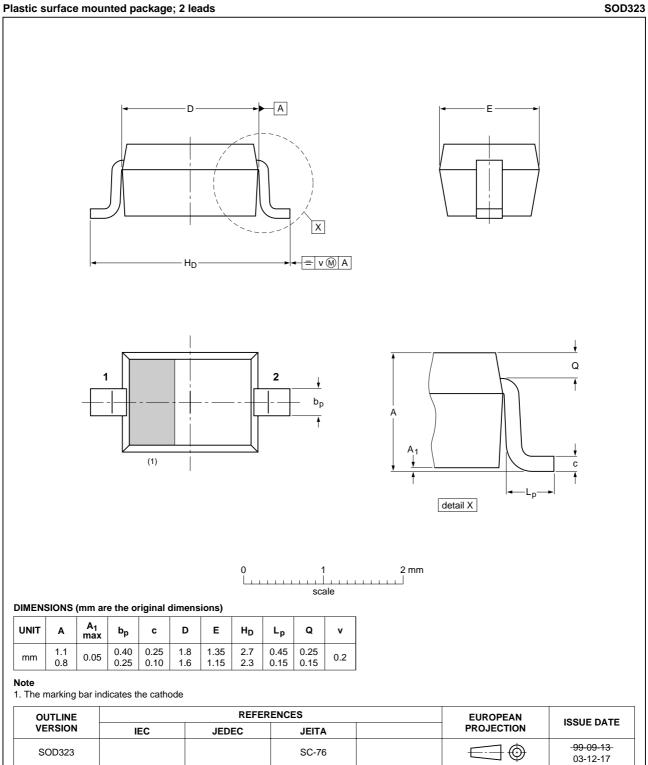






PACKAGE OUTLINE





BAS321

DATA SHEET STATUS

LEVEL	DATA SHEET STATUS ⁽¹⁾	PRODUCT STATUS ⁽²⁾⁽³⁾	DEFINITION
I	Objective data	Development	This data sheet contains data from the objective specification for product development. Philips Semiconductors reserves the right to change the specification in any manner without notice.
11	Preliminary data	Qualification	This data sheet contains data from the preliminary specification. Supplementary data will be published at a later date. Philips Semiconductors reserves the right to change the specification without notice, in order to improve the design and supply the best possible product.
	Product data	Production	This data sheet contains data from the product specification. Philips Semiconductors reserves the right to make changes at any time in order to improve the design, manufacturing and supply. Relevant changes will be communicated via a Customer Product/Process Change Notification (CPCN).

Notes

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- 2. The product status of the device(s) described in this data sheet may have changed since this data sheet was published. The latest information is available on the Internet at URL http://www.semiconductors.philips.com.
- 3. For data sheets describing multiple type numbers, the highest-level product status determines the data sheet status.

DEFINITIONS

Short-form specification — The data in a short-form specification is extracted from a full data sheet with the same type number and title. For detailed information see the relevant data sheet or data handbook.

Limiting values definition — Limiting values given are in accordance with the Absolute Maximum Rating System (IEC 60134). 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.

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Contact information

For additional information please visit http://www.semiconductors.philips.com. Fax: +31 40 27 24825 For sales offices addresses send e-mail to: sales.addresses@www.semiconductors.philips.com.

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