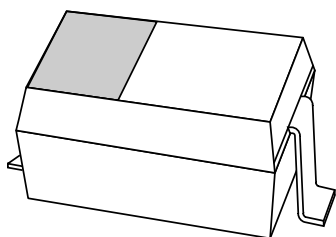


DATA SHEET



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

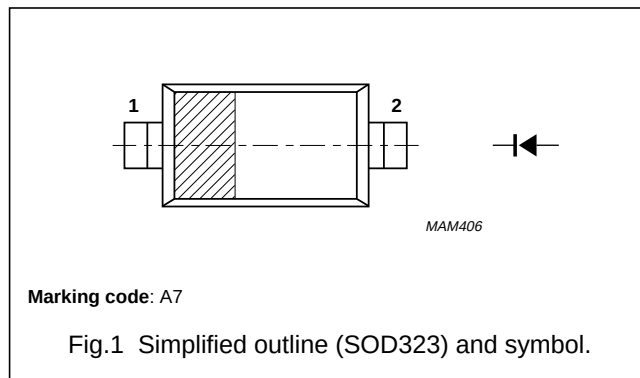
- General purpose switching in e.g. surface mounted circuits.

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	–	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

ELECTRICAL CHARACTERISTICS

$T_j = 25\text{ }^{\circ}\text{C}$ 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 $V_R = 200\text{ V}$ $V_R = 200\text{ V}; T_j = 150\text{ }^{\circ}\text{C}$	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	$T_s = 90^{\circ}\text{C}$; note 1	130	K/W
$R_{th\ j-a}$	thermal resistance from junction to ambient	note 2	366	K/W

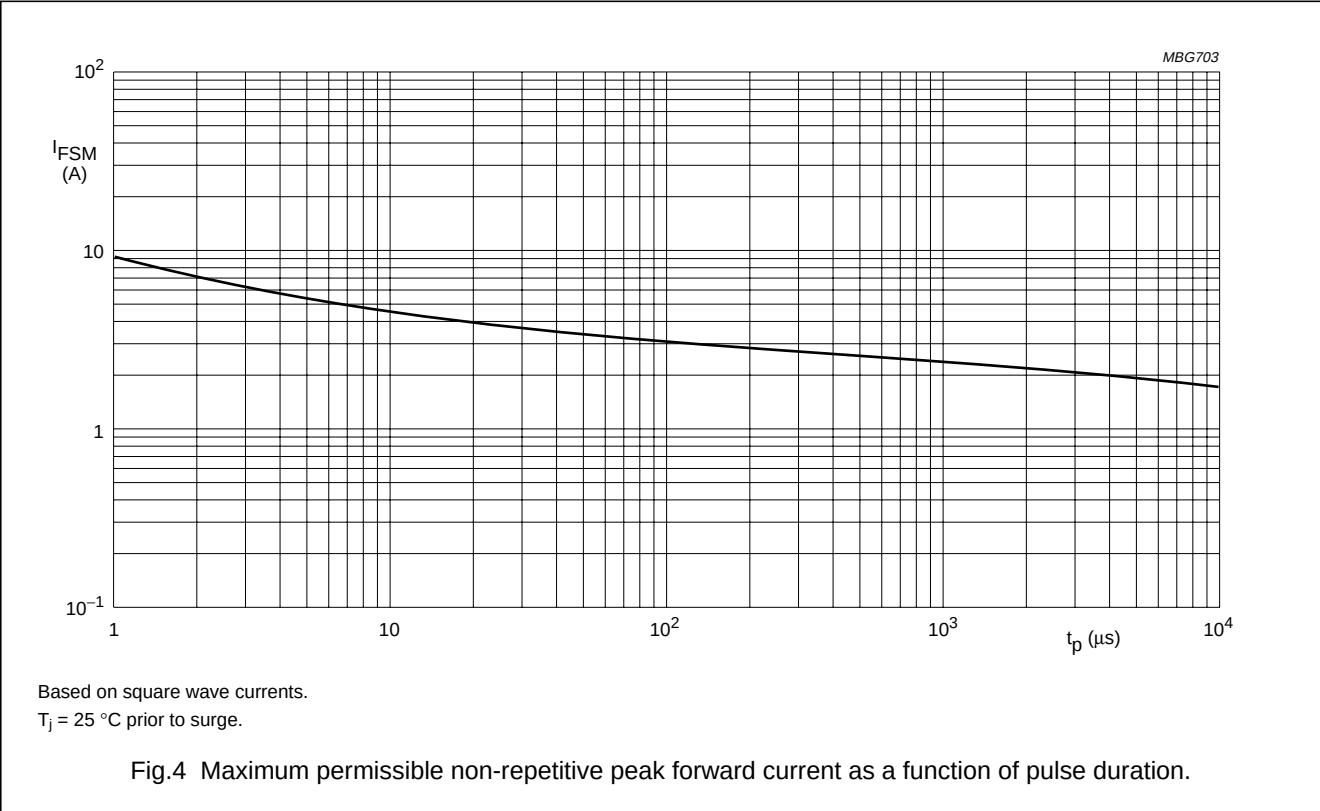
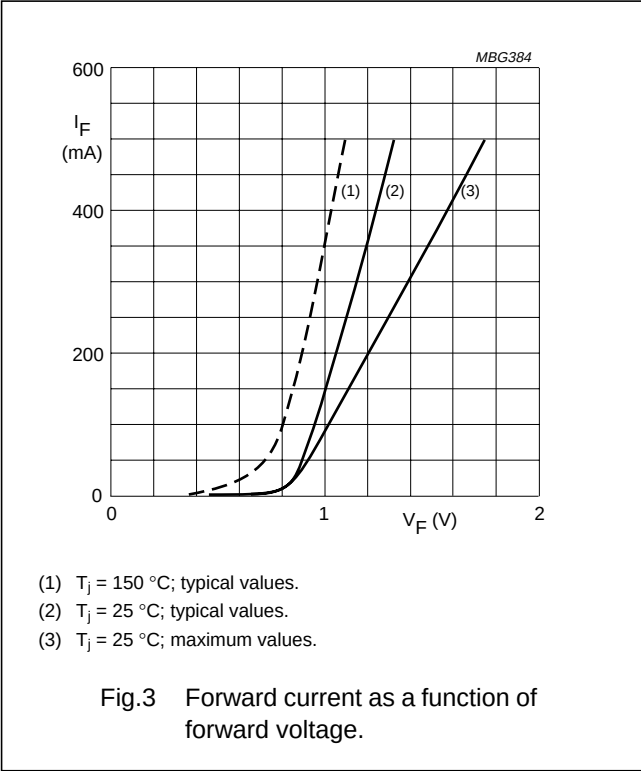
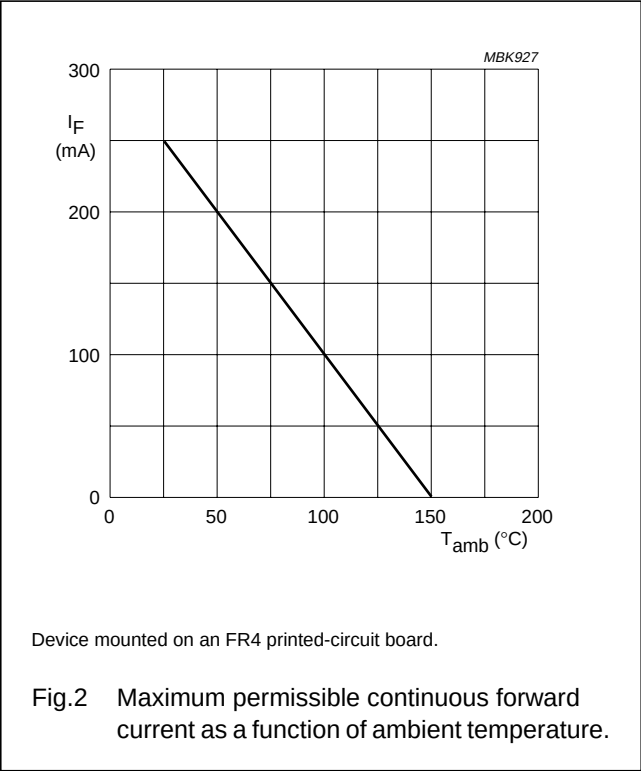
Notes

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

General purpose diode

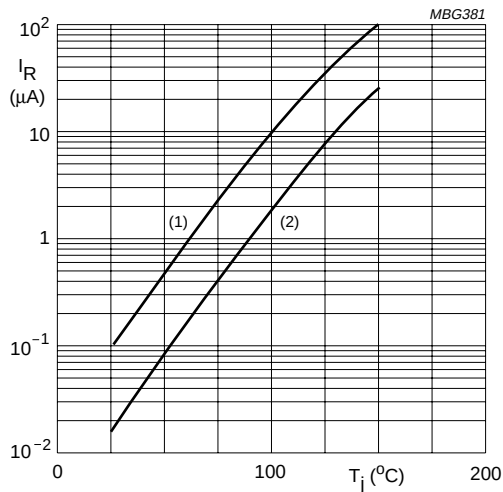
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GRAPHICAL DATA



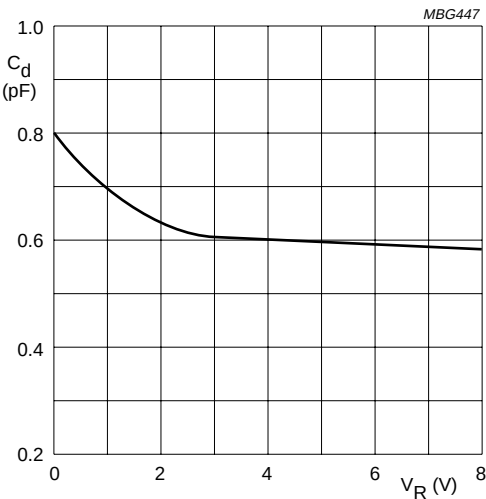
General purpose diode

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

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



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

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

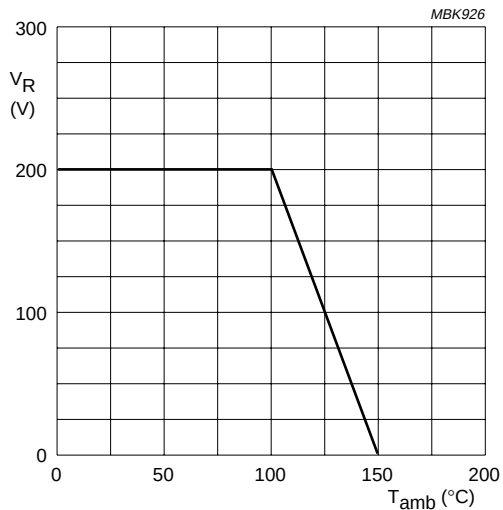
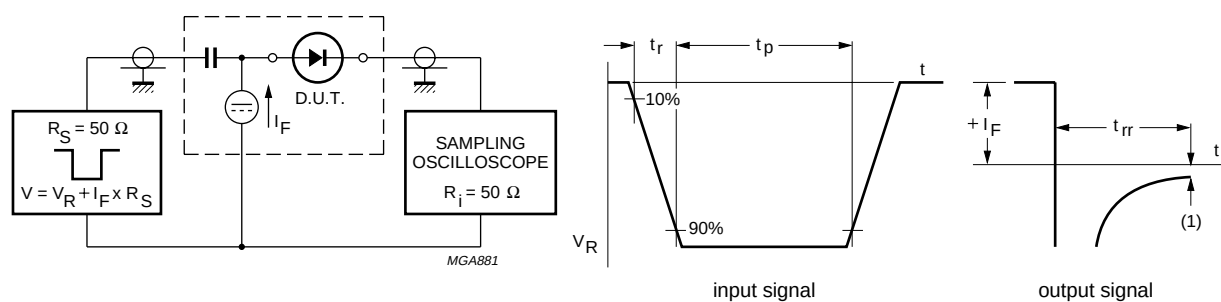


Fig.7 Maximum permissible continuous reverse voltage as a function of the ambient temperature.

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.

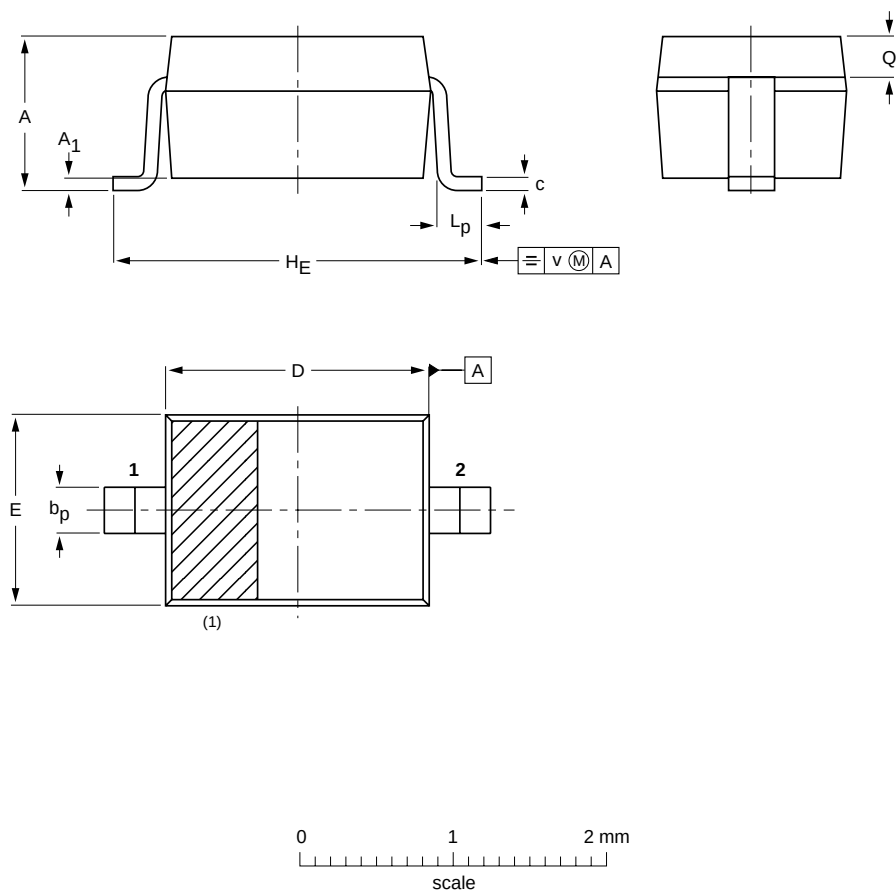
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PACKAGE OUTLINE

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

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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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NOTES

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NOTES

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NOTES

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