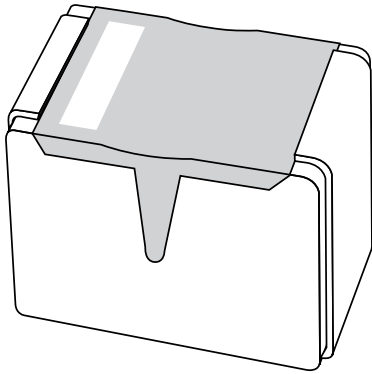


DATA SHEET



BAS221 General purpose diode

Product specification
Supersedes data of 1999 May 07

2002 May 28

General purpose diode

BAS221

FEATURES

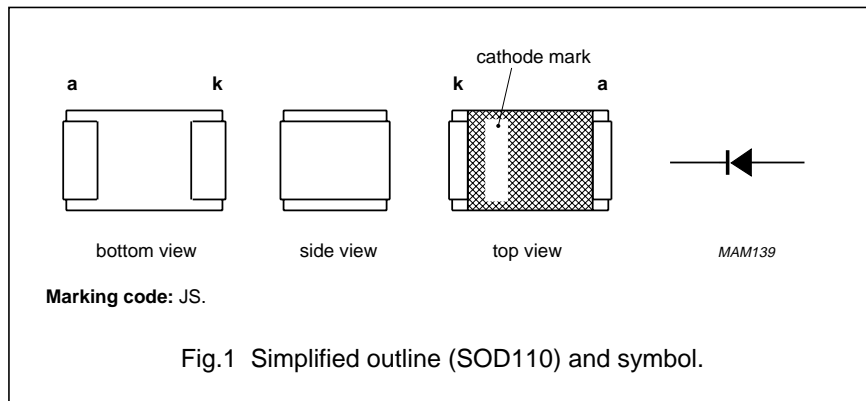
- Small ceramic SMD package
- Switching speed: max. 50 ns
- General application
- Continuous reverse voltage: max. 200 V
- Repetitive peak reverse voltage: max. 250 V
- Repetitive peak forward current: max. 1 A.

APPLICATIONS

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

DESCRIPTION

The BAS221 is a general purpose diode fabricated in planar technology, encapsulated in a SOD110 very small ceramic SMD package.



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	note 1; see Fig.2	–	300	mA
I_{FRM}	repetitive peak forward current	$t_p < 0.5 \text{ ms}$; $\delta \leq 0.25$	–	1	A
I_{FSM}	non-repetitive peak forward current	square wave; $T_j = 25 \text{ }^\circ\text{C}$ prior to surge; see Fig.4			
		$t = 1 \text{ } \mu\text{s}$	–	20	A
		$t = 100 \text{ } \mu\text{s}$	–	7	A
		$t = 10 \text{ ms}$	–	2	A
P_{tot}	total power dissipation	$T_{amb} = 25 \text{ }^\circ\text{C}$; note 1	–	400	mW
T_{stg}	storage temperature		–65	+150	$^\circ\text{C}$
T_j	junction temperature		–	150	$^\circ\text{C}$

Note

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

General purpose diode

BAS221

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j-tp}$	thermal resistance from junction to tie-point		200	K/W
$R_{th\ j-a}$	thermal resistance from junction to ambient	note 1	315	K/W

Note

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

ELECTRICAL CHARACTERISTICS

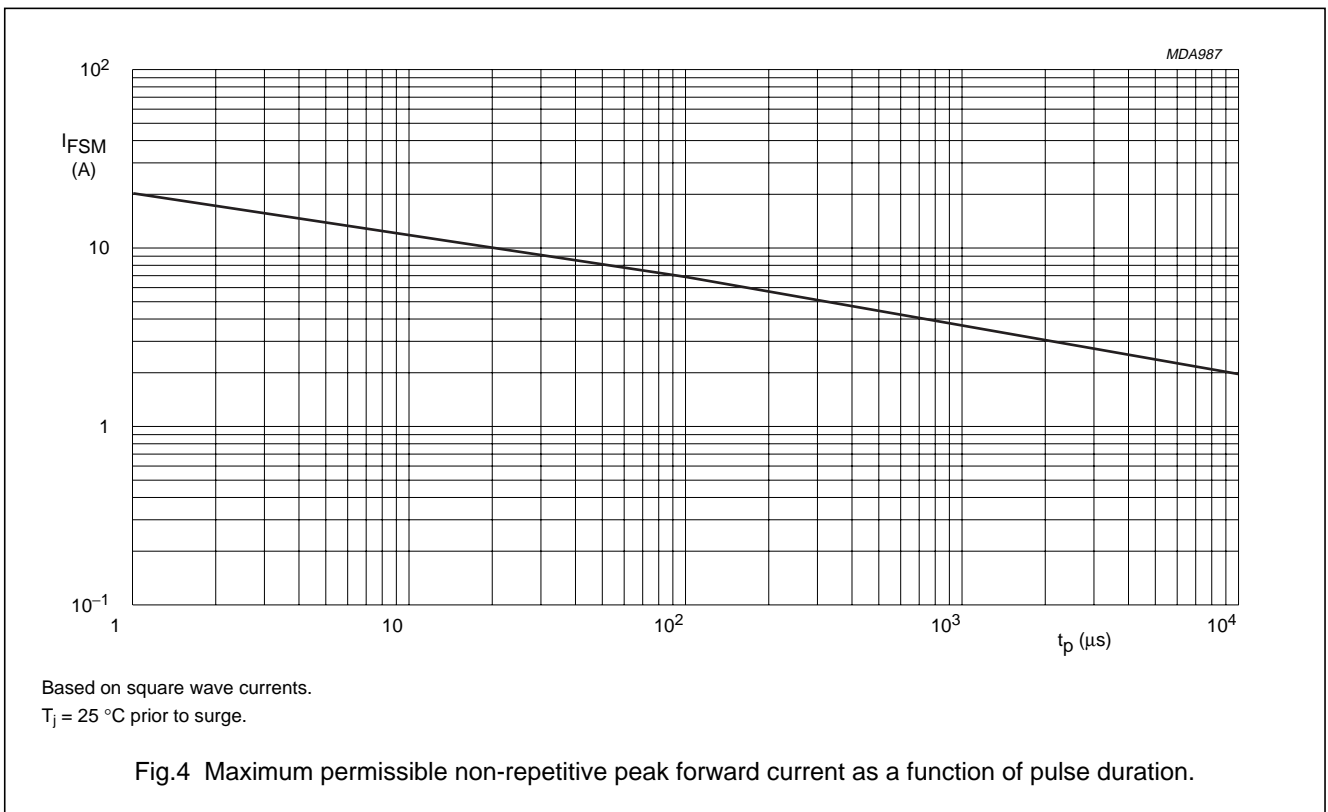
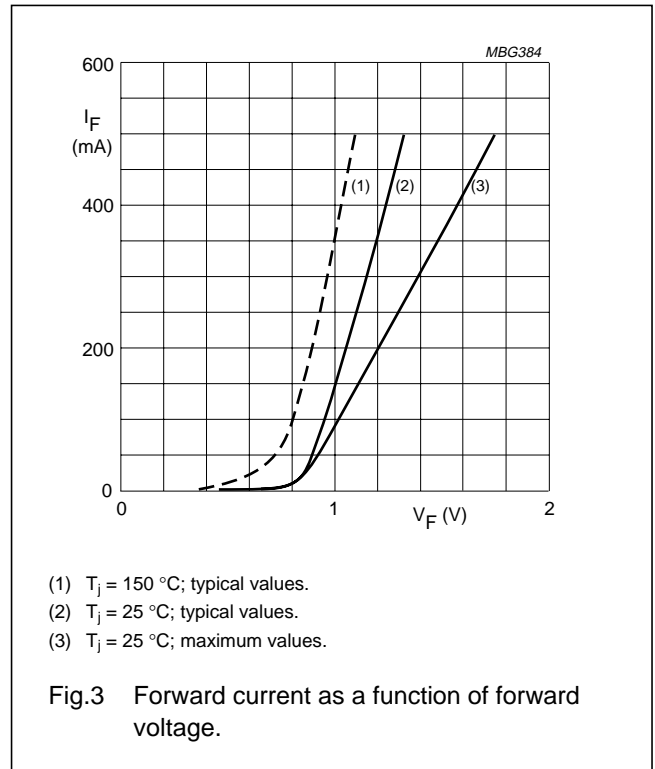
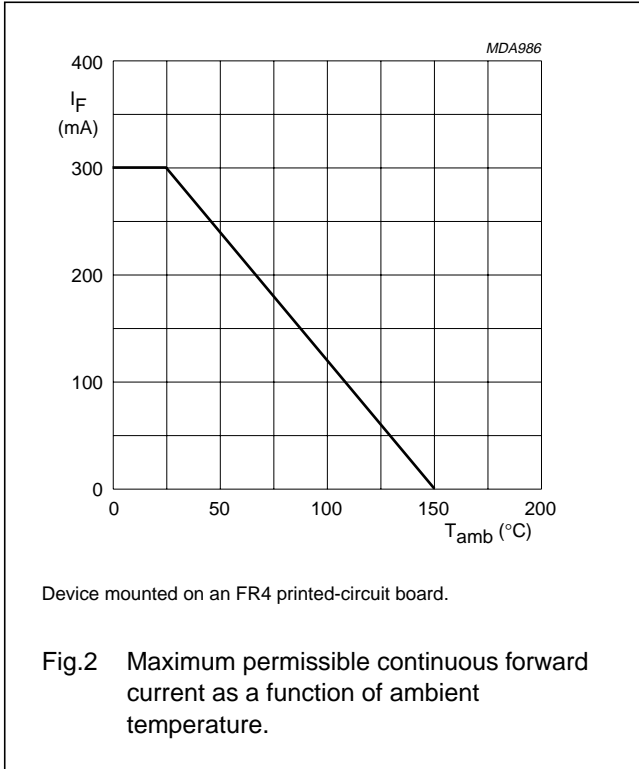
$T_j = 25\text{ °C}$ unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MAX.	UNIT
V_F	forward voltage	see Fig.3 $I_F = 100\text{ mA}$ $I_F = 200\text{ mA}$ $I_F = 300\text{ mA}$	1 1.25 1.4	V 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.7	50	ns

General purpose diode

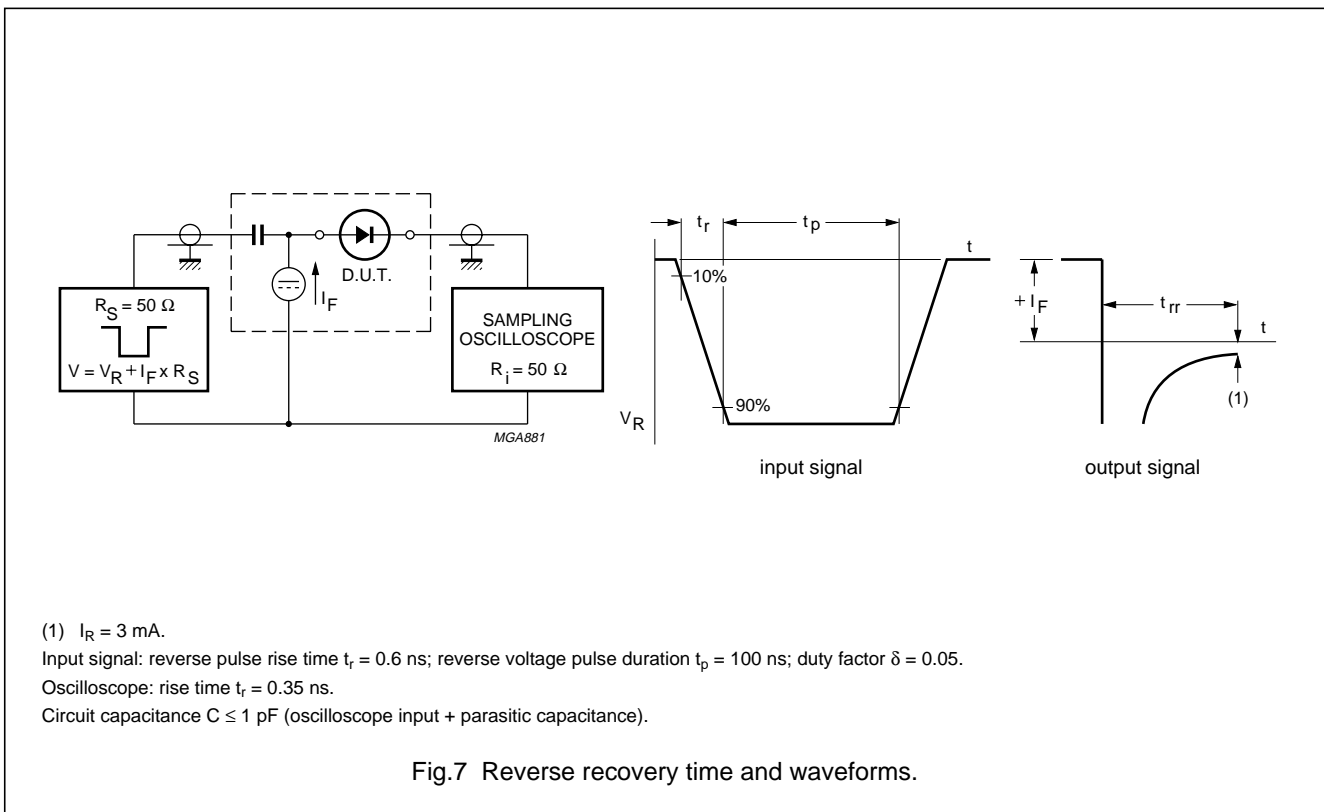
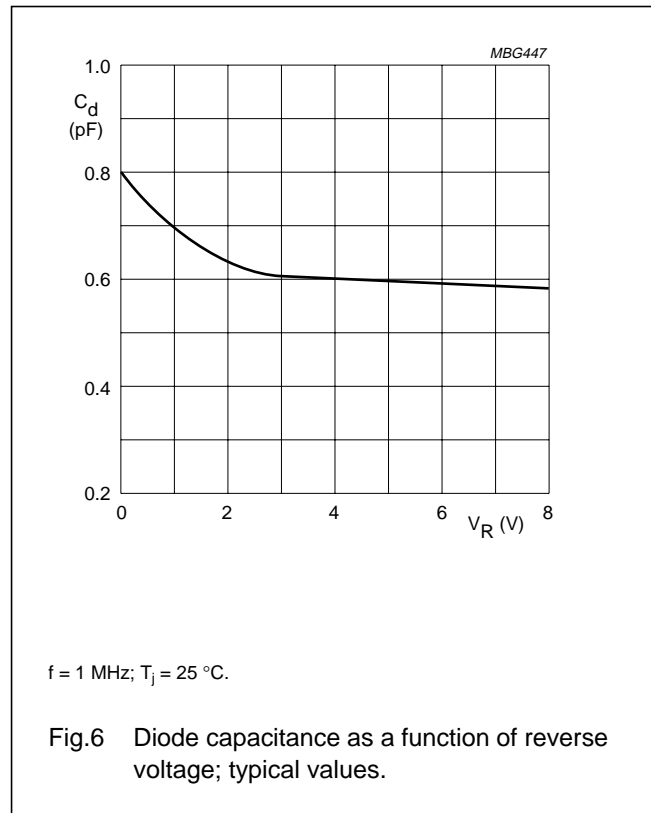
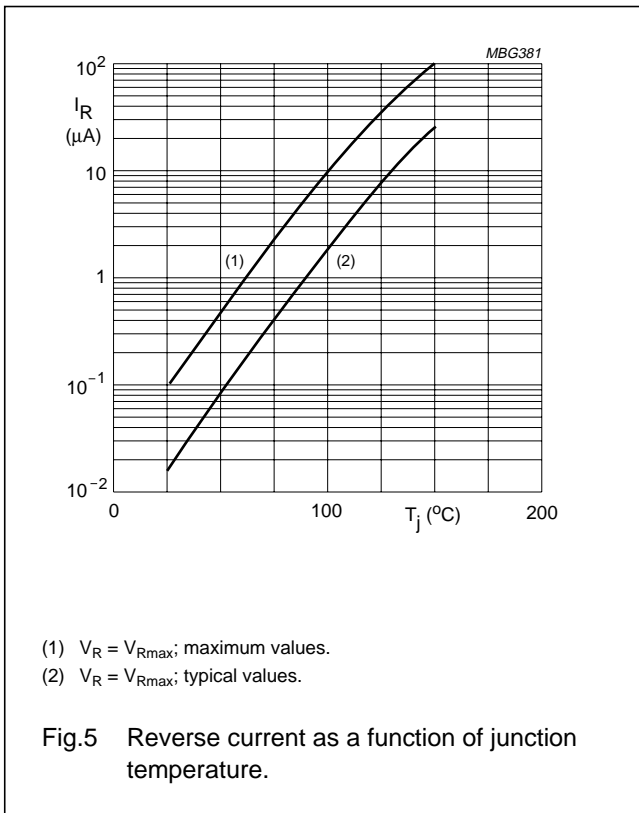
BAS221

GRAPHICAL DATA



General purpose diode

BAS221



(1) $I_R = 3$ mA.
 Input signal: reverse pulse rise time $t_r = 0.6$ ns; reverse voltage pulse duration $t_p = 100$ ns; duty factor $\delta = 0.05$.
 Oscilloscope: rise time $t_r = 0.35$ ns.
 Circuit capacitance $C \leq 1$ pF (oscilloscope input + parasitic capacitance).

General purpose diode

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PACKAGE OUTLINE

Very small ceramic rectangular surface mounted package

SOD110

DIMENSIONS (mm are the original dimensions)

UNIT	A max.	D	E	y
mm	1.6	2.10 1.90	1.40 1.10	0.1

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ			
SOD110						97-04-14

General purpose diode

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DATA SHEET STATUS

DATA SHEET STATUS ⁽¹⁾	PRODUCT STATUS ⁽²⁾	DEFINITIONS
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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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