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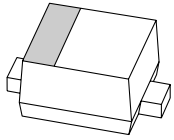
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BAP1321-02

Silicon PIN diode

Rev. 02 — 3 January 2008

Product data sheet

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NXP Semiconductors

Silicon PIN diode

BAP1321-02

FEATURES

- High voltage, current controlled
- RF resistor for RF attenuators and switches
- Low diode capacitance
- Low diode forward resistance
- Very low series inductance
- For applications up to 3 GHz.

APPLICATIONS

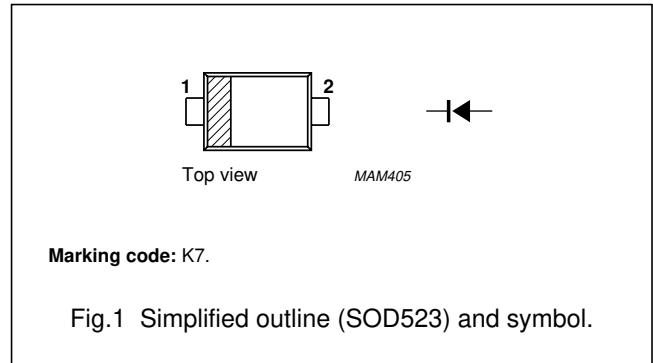
- RF attenuators and switches.

DESCRIPTION

Planar PIN diode in a SOD523 ultra small SMD plastic package.

PINNING

PIN	DESCRIPTION
1	cathode
2	anode



LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V_R	continuous reverse voltage		–	60	V
I_F	continuous forward current		–	100	mA
P_{tot}	total power dissipation	$T_s \leq 90\text{ }^\circ\text{C}$	–	715	mW
T_{stg}	storage temperature		–65	+150	$^\circ\text{C}$
T_j	junction temperature		–65	+150	$^\circ\text{C}$

Silicon PIN diode

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ELECTRICAL CHARACTERISTICST_j = 25 °C unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	TYP.	MAX.	UNIT
V _F	forward voltage	I _F = 50 mA	0.95	1.1	V
I _R	reverse leakage current	V _R = 60 V	–	100	nA
C _d	diode capacitance	V _R = 0; f = 1 MHz	0.4	–	pF
		V _R = 1 V; f = 1 MHz	0.35	0.45	pF
		V _R = 20 V; f = 1 MHz	0.25	0.32	pF
r _D	diode forward resistance	f = 100 MHz; note 1			
		I _F = 0.5 mA	3.4	5.0	Ω
		I _F = 1 mA	2.4	3.6	Ω
		I _F = 10 mA	1.2	1.8	Ω
S ₂₁ ²	isolation	V _R = 0; f = 900 MHz	16.3	–	dB
		V _R = 0; f = 1800 MHz	11.4	–	dB
		V _R = 0; f = 2450 MHz	9.2	–	dB
		I _F = 0.5 mA; f = 900 MHz	0.23	–	dB
S ₂₁ ²	insertion loss	I _F = 0.5 mA; f = 1800 MHz	0.27	–	dB
		I _F = 0.5 mA; f = 2450 MHz	0.33	–	dB
		I _F = 1 mA; f = 900 MHz	0.18	–	dB
S ₂₁ ²	insertion loss	I _F = 1 mA; f = 1800 MHz	0.22	–	dB
		I _F = 1 mA; f = 2450 MHz	0.27	–	dB
		I _F = 10 mA; f = 900 MHz	0.10	–	dB
S ₂₁ ²	insertion loss	I _F = 10 mA; f = 1800 MHz	0.16	–	dB
		I _F = 10 mA; f = 2450 MHz	0.20	–	dB
		I _F = 100 mA; f = 900 MHz	0.08	–	dB
S ₂₁ ²	insertion loss	I _F = 100 mA; f = 1800 MHz	0.13	–	dB
		I _F = 100 mA; f = 2450 MHz	0.18	–	dB
τ _L	charge carrier life time	when switched from I _F = 10 mA to I _R = 6 mA; R _L = 100 Ω; measured at I _R = 3 mA	0.5	–	μs
L _S	series inductance	I _F = 100 mA; f = 100 MHz	0.6	–	nH

Note

1. Guaranteed on AQL basis: inspection level S4, AQL 1.0.

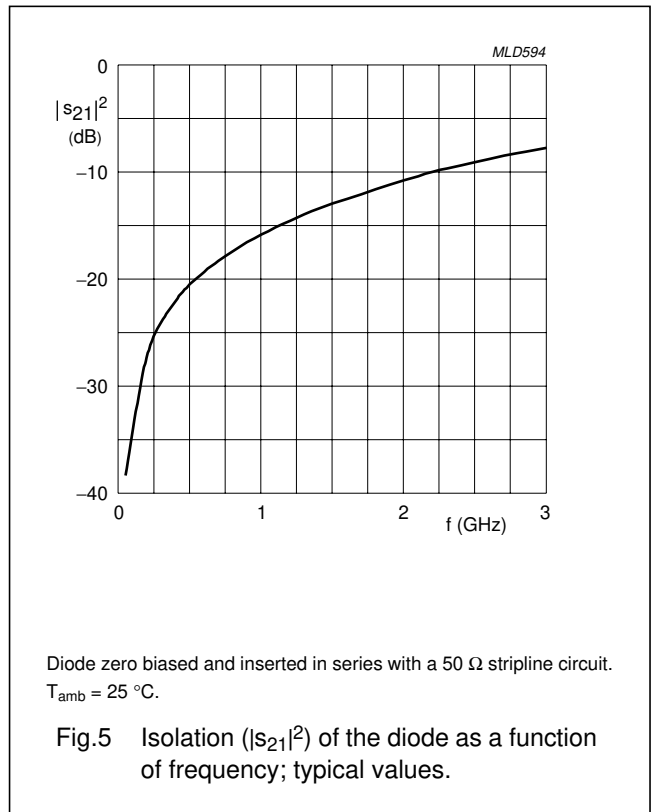
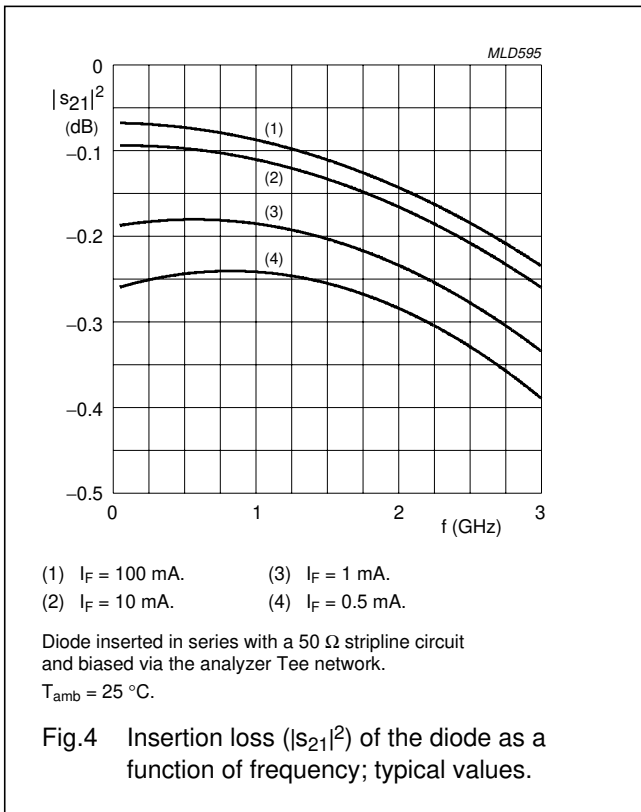
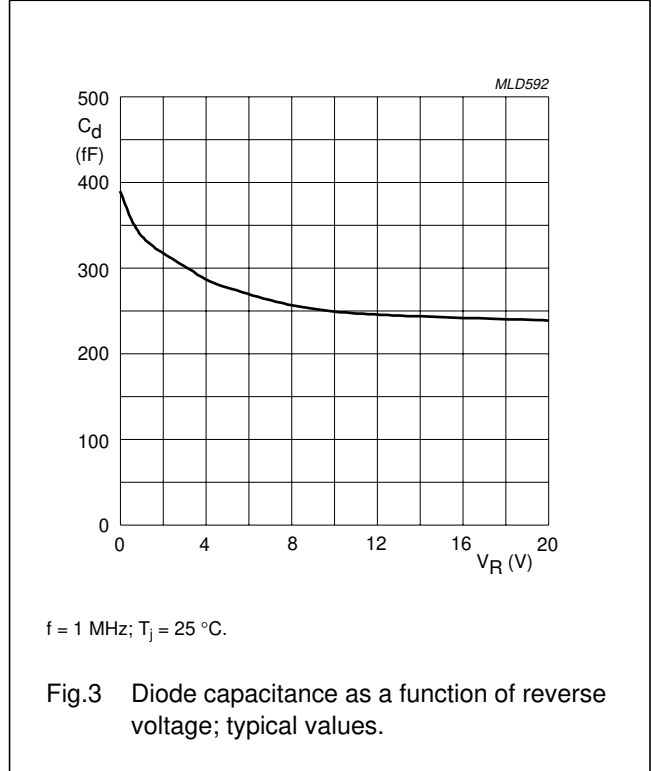
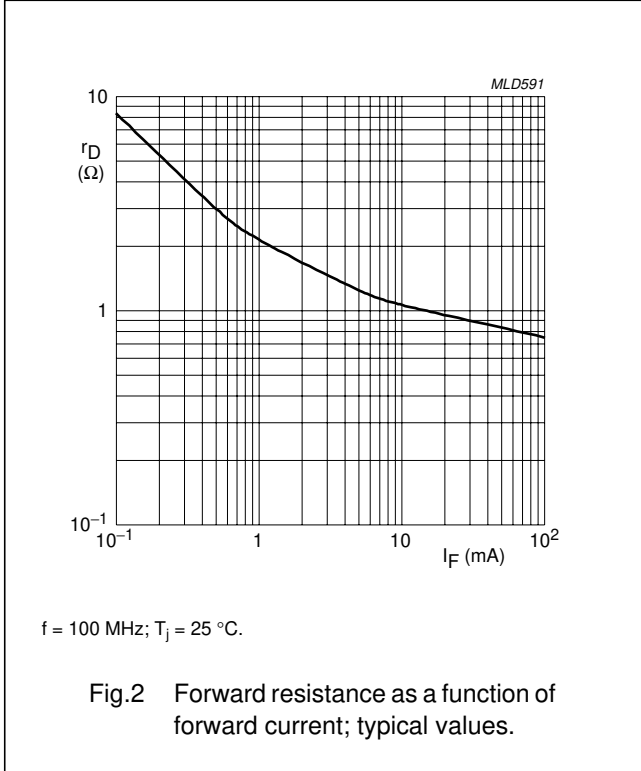
THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	VALUE	UNIT
R _{th j-s}	thermal resistance from junction to soldering point	85	K/W

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GRAPHICAL DATA



Silicon PIN diode

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PACKAGE OUTLINE

Plastic surface-mounted package; 2 leads

SOD523

0 0.5 1 mm
scale

DIMENSIONS (mm are the original dimensions)

UNIT	A	b _p	c	D	E	H _E	v
mm	0.65 0.58	0.34 0.26	0.17 0.11	1.25 1.15	0.85 0.75	1.65 1.55	0.1

Note
1. The marking bar indicates the cathode.

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	JEITA			
SOD523			SC-79			02-12-13 06-03-16

Legal information

Data sheet status

Document status ^{[1][2]}	Product status ^[3]	Definition
Objective [short] data sheet	Development	This document contains data from the objective specification for product development.
Preliminary [short] data sheet	Qualification	This document contains data from the preliminary specification.
Product [short] data sheet	Production	This document contains the product specification.

[1] Please consult the most recently issued document before initiating or completing a design.

[2] The term 'short data sheet' is explained in section "Definitions".

[3] 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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Revision history

Revision history

Document ID	Release date	Data sheet status	Change notice	Supersedes
BAP1321-02_N_2	20080103	Product data sheet	-	BAP1321-02_1
Modifications:	• Package outline drawing on page 5 changed			
BAP1321-02_1 (9397 750 08131)	20010417	Product specification	-	-

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