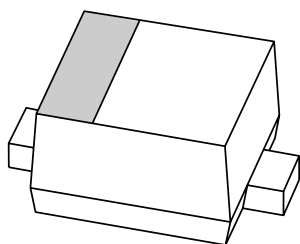


DATA SHEET



BAP1321-02 Silicon PIN diode

Product specification

2001 Apr 17

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.

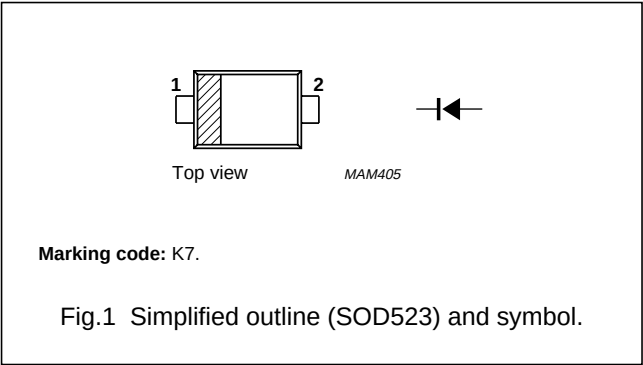
LIMITING VALUES

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	$^{\circ}\text{C}$

PINNING

PIN	DESCRIPTION
1	cathode
2	anode



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
		I _F = 100 mA	0.85	1.3	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
S ₂₁ ²	insertion loss	I _F = 0.5 mA; f = 900 MHz	0.23	–	dB
		I _F = 0.5 mA; f = 1800 MHz	0.27	–	dB
		I _F = 0.5 mA; f = 2450 MHz	0.33	–	dB
S ₂₁ ²	insertion loss	I _F = 1 mA; f = 900 MHz	0.18	–	dB
		I _F = 1 mA; f = 1800 MHz	0.22	–	dB
		I _F = 1 mA; f = 2450 MHz	0.27	–	dB
S ₂₁ ²	insertion loss	I _F = 10 mA; f = 900 MHz	0.10	–	dB
		I _F = 10 mA; f = 1800 MHz	0.16	–	dB
		I _F = 10 mA; f = 2450 MHz	0.20	–	dB
S ₂₁ ²	insertion loss	I _F = 100 mA; f = 900 MHz	0.08	–	dB
		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.

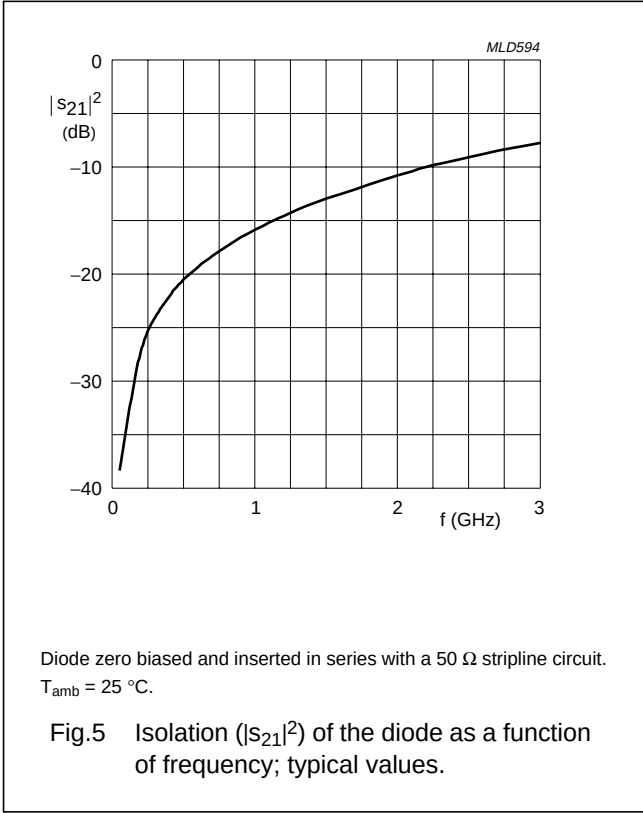
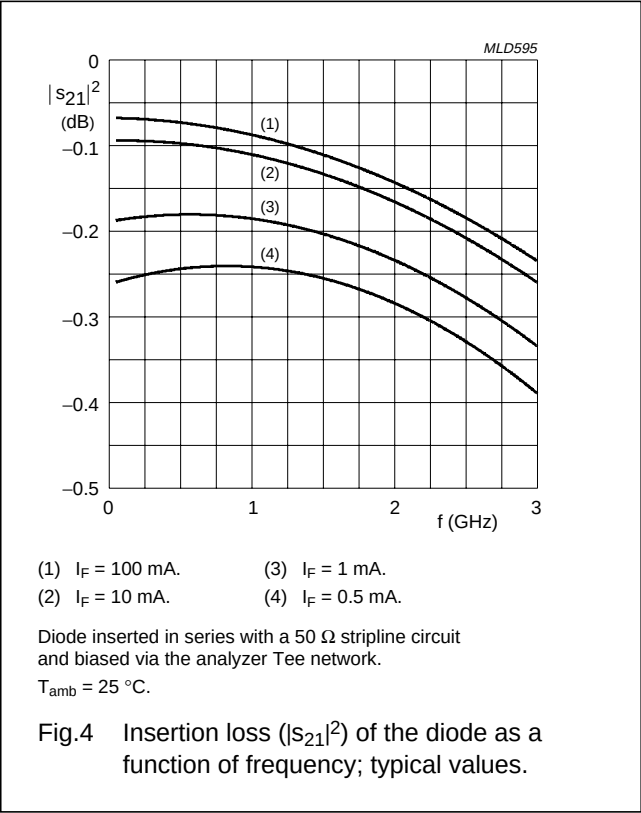
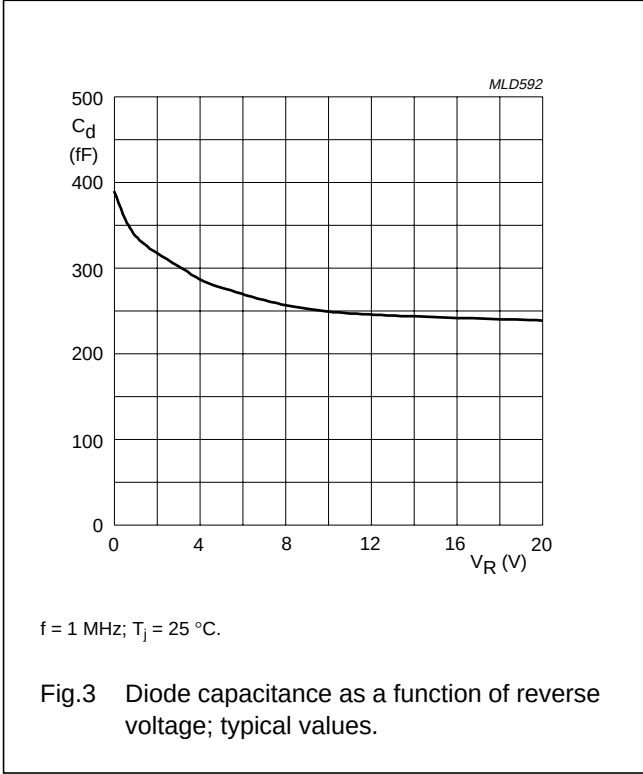
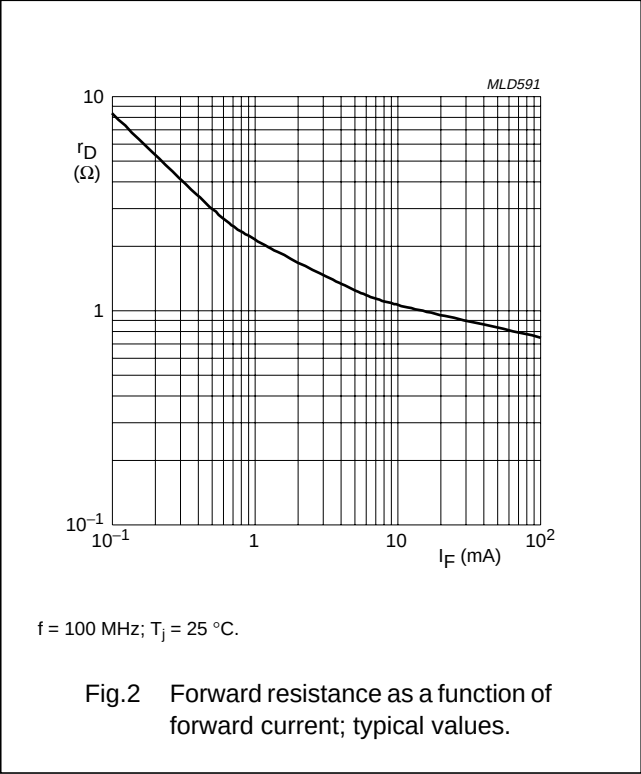
THERMAL CHARACTERISTICS

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

Silicon PIN diode

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GRAPHICAL DATA



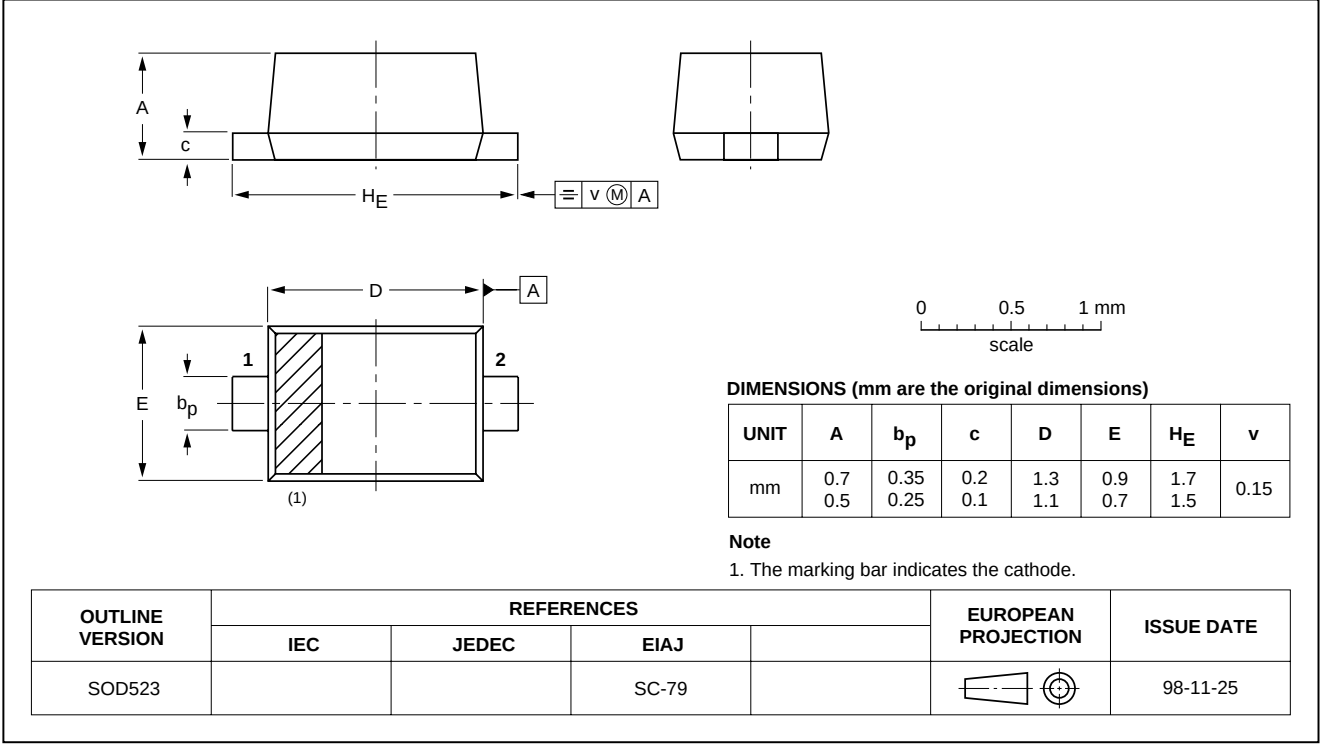
Silicon PIN diode

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PACKAGE OUTLINE

Plastic surface mounted package; 2 leads

SOD523



Silicon PIN diode

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DATA SHEET STATUS

DATA SHEET STATUS ⁽¹⁾	PRODUCT STATUS ⁽²⁾	DEFINITIONS
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.
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.
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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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Silicon PIN diode

BAP1321-02

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