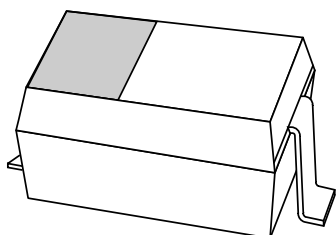


DATA SHEET



BAP1321-03 Silicon PIN diode

Product specification
Supersedes data of 2001 Apr 17

2001 May 11

Silicon PIN diode

BAP1321-03

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 SOD323 ultra small SMD plastic package.

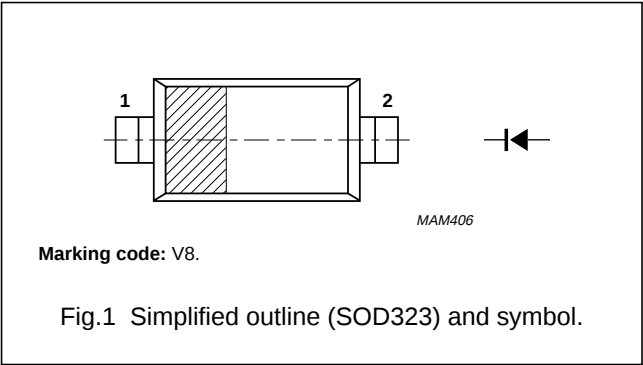
LIMITING VALUES

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	$T_s \leq 90\text{ }^{\circ}\text{C}$	–	500	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	16.6	–	dB
		V _R = 0; f = 1800 MHz	11.6	–	dB
		V _R = 0; f = 2450 MHz	9.2	–	dB
S ₂₁ ²	insertion loss	I _F = 0.5 mA; f = 900 MHz	0.26	–	dB
		I _F = 0.5 mA; f = 1800 MHz	0.35	–	dB
		I _F = 0.5 mA; f = 2450 MHz	0.44	–	dB
S ₂₁ ²	insertion loss	I _F = 1 mA; f = 900 MHz	0.20	–	dB
		I _F = 1 mA; f = 1800 MHz	0.29	–	dB
		I _F = 1 mA; f = 2450 MHz	0.38	–	dB
S ₂₁ ²	insertion loss	I _F = 10 mA; f = 900 MHz	0.13	–	dB
		I _F = 10 mA; f = 1800 MHz	0.22	–	dB
		I _F = 10 mA; f = 2450 MHz	0.32	–	dB
S ₂₁ ²	insertion loss	I _F = 100 mA; f = 900 MHz	0.10	–	dB
		I _F = 100 mA; f = 1800 MHz	0.20	–	dB
		I _F = 100 mA; f = 2450 MHz	0.29	–	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	1.5	–	nH

Note

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

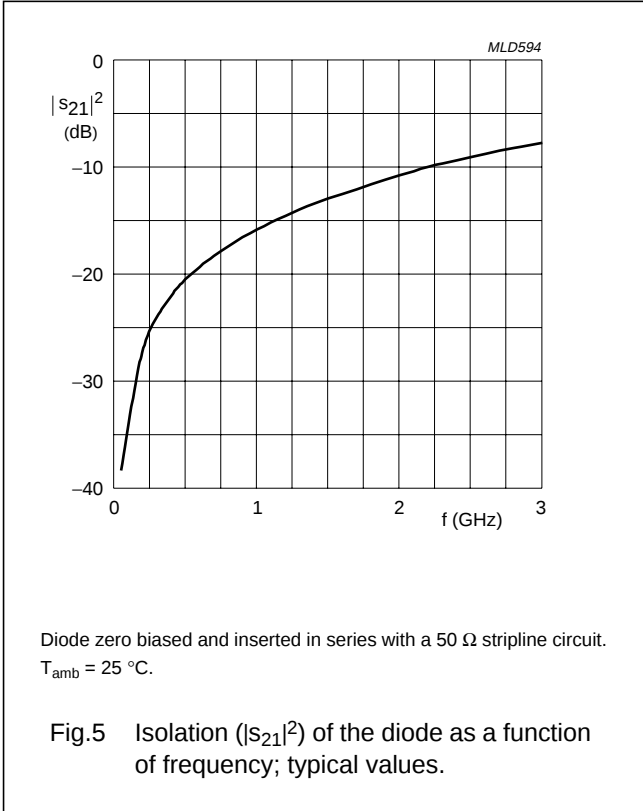
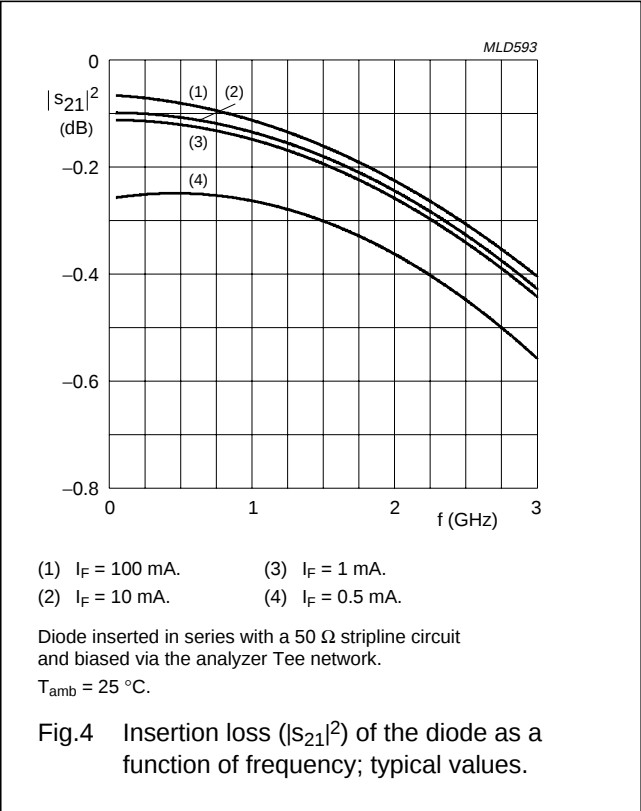
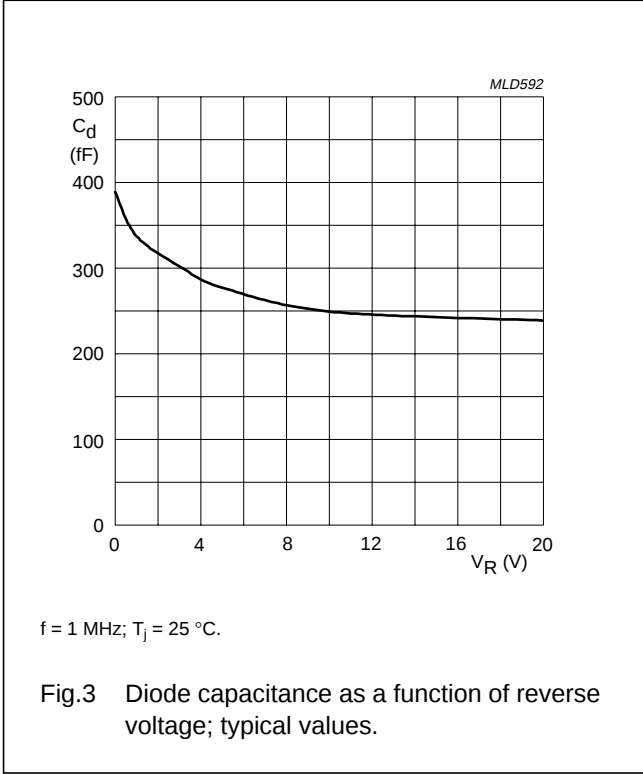
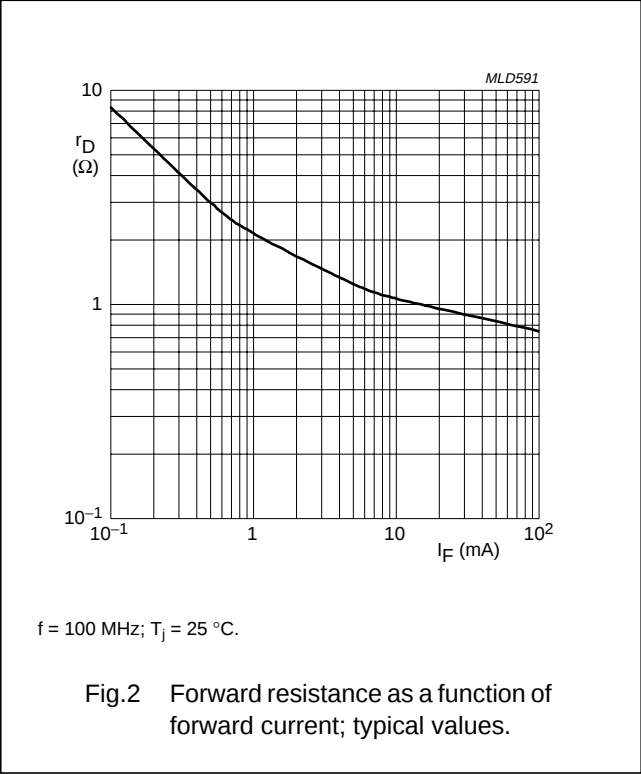
THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	VALUE	UNIT
R _{th j-s}	thermal resistance from junction to soldering point	120	K/W

Silicon PIN diode

BAP1321-03

GRAPHICAL DATA



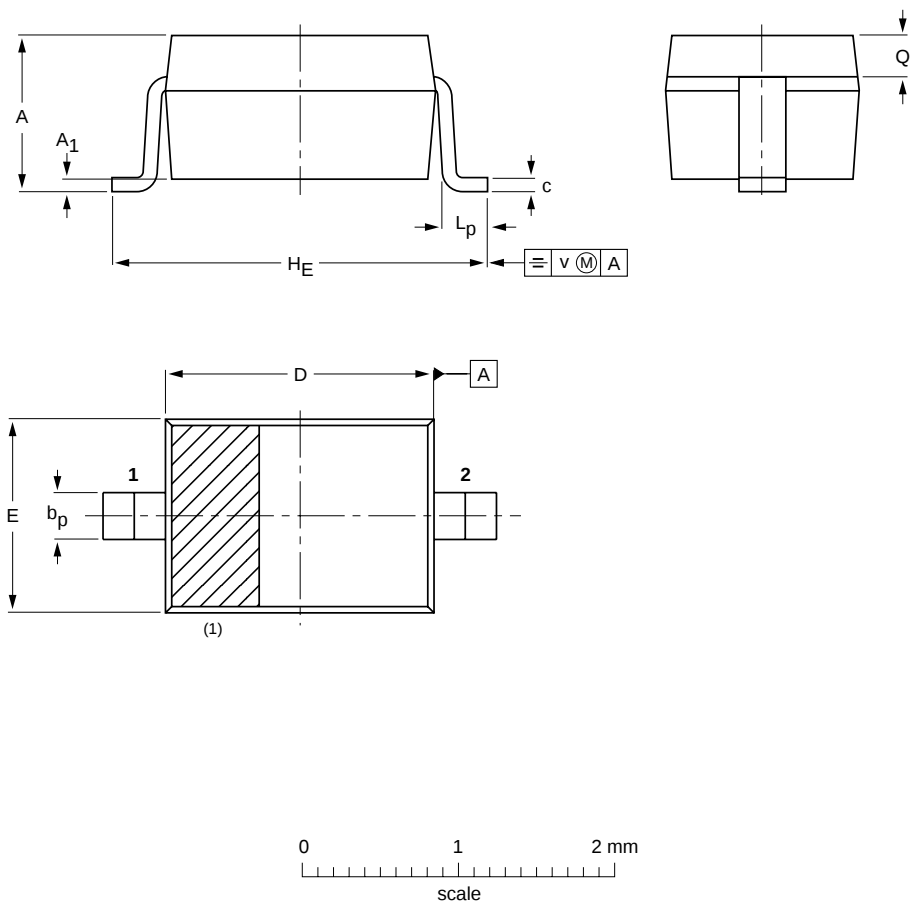
Silicon PIN diode

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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 bar indicates the cathode.

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ			
SOD323			SC-76			98-09-14 99-09-13

Silicon PIN diode

BAP1321-03

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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Silicon PIN diode

BAP1321-03

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