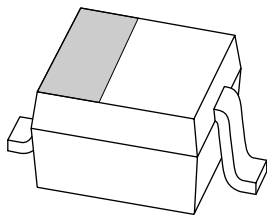


DATA SHEET



BAP63-03 Silicon PIN diode

Product specification
Supersedes data of 2001 May 18

2004 Feb 11

Silicon PIN diode

BAP63-03

FEATURES

- High speed switching for RF signals
- Low diode capacitance
- Low diode forward resistance
- Very low series inductance
- For applications up to 3 GHz.

APPLICATIONS

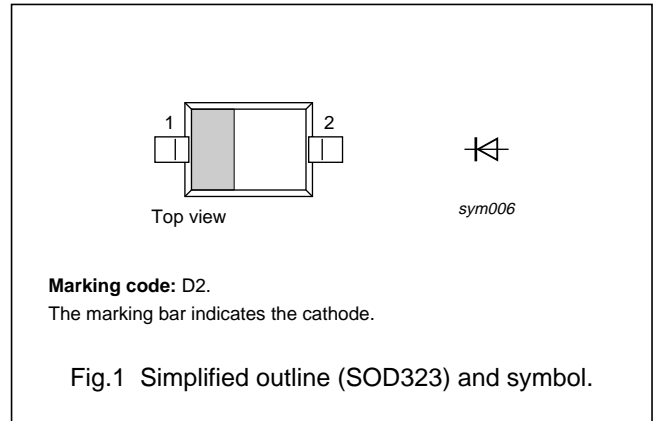
- RF attenuators and switches.

DESCRIPTION

Planar PIN diode in a SOD323 small SMD plastic package.

PINNING

PIN	DESCRIPTION
1	cathode
2	anode



ORDERING INFORMATION

TYPE NUMBER	PACKAGE		
	NAME	DESCRIPTION	VERSION
BAP63-03	-	plastic surface mounted package; 2 leads	SOD323

LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V_R	continuous reverse voltage		-	50	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	$^\circ\text{C}$

Silicon PIN diode

BAP63-03

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 = 35 V	–	10	nA
C _d	diode capacitance	V _R = 0; f = 1 MHz	0.4	–	pF
		V _R = 1 V; f = 1 MHz	0.35	–	pF
		V _R = 20 V; f = 1 MHz	0.27	0.32	pF
r _D	diode forward resistance	I _F = 0.5 mA; f = 100 MHz; note 1	2.5	3.5	Ω
		I _F = 1 mA; f = 100 MHz; note 1	1.95	3	Ω
		I _F = 10 mA; f = 100 MHz; note 1	1.17	1.8	Ω
		I _F = 100 mA; f = 100 MHz; note 1	0.9	1.5	Ω
S ₂₁ ²	isolation	V _R = 0; f = 900 MHz	15.4	–	dB
		V _R = 0; f = 1800 MHz	10.1	–	dB
		V _R = 0; f = 2450 MHz	7.8	–	dB
S ₂₁ ²	insertion loss	I _F = 0.5 mA; f = 900 MHz	0.21	–	dB
		I _F = 0.5 mA; f = 1800 MHz	0.28	–	dB
		I _F = 0.5 mA; f = 2450 MHz	0.38	–	dB
S ₂₁ ²	insertion loss	I _F = 1 mA; f = 900 MHz	0.18	–	dB
		I _F = 1 mA; f = 1800 MHz	0.26	–	dB
		I _F = 1 mA; f = 2450 MHz	0.35	–	dB
S ₂₁ ²	insertion loss	I _F = 10 mA; f = 900 MHz	0.13	–	dB
		I _F = 10 mA; f = 1800 MHz	0.20	–	dB
		I _F = 10 mA; f = 2450 MHz	0.30	–	dB
S ₂₁ ²	insertion loss	I _F = 100 mA; f = 900 MHz	0.10	–	dB
		I _F = 100 mA; f = 1800 MHz	0.18	–	dB
		I _F = 100 mA; f = 2450 MHz	0.28	–	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	310	–	ns
L _S	series inductance		1.5	–	nH

Note

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

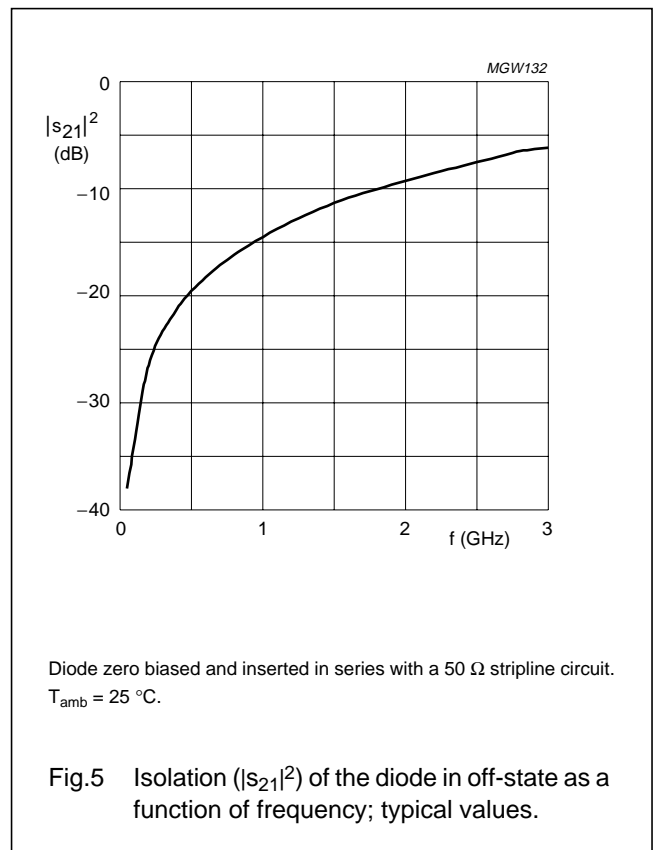
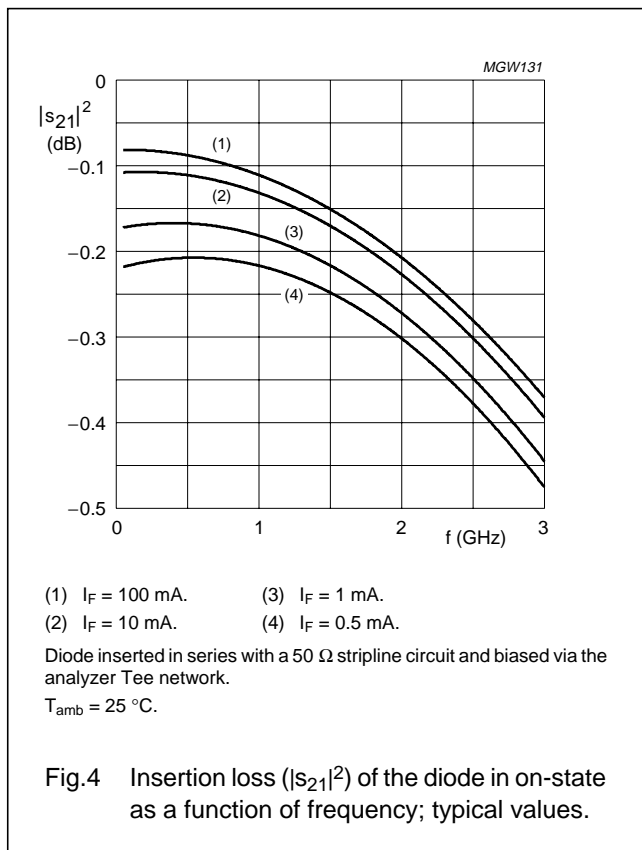
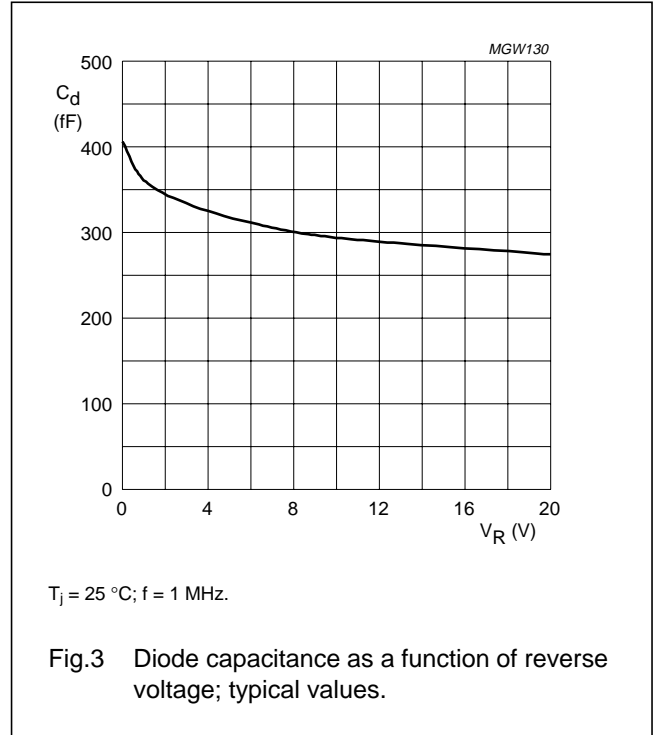
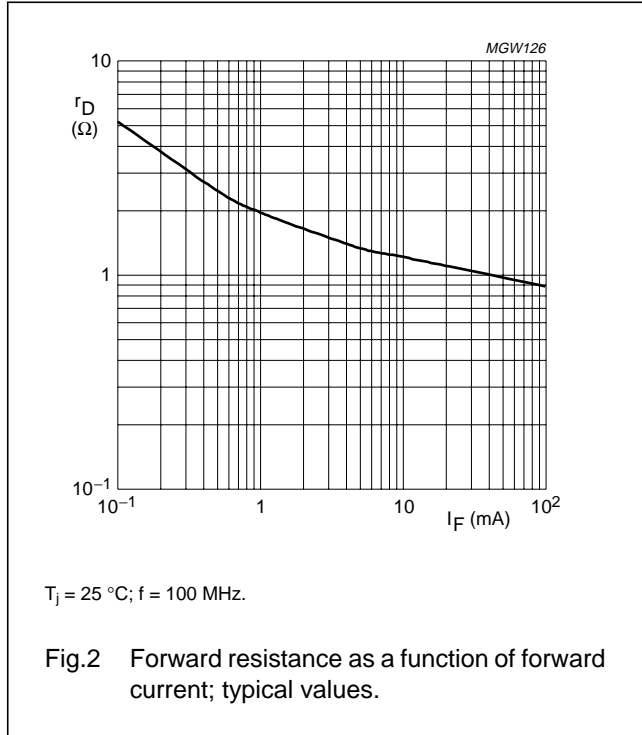
THERMAL CHARACTERISTICS

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

Silicon PIN diode

BAP63-03

GRAPHICAL DATA



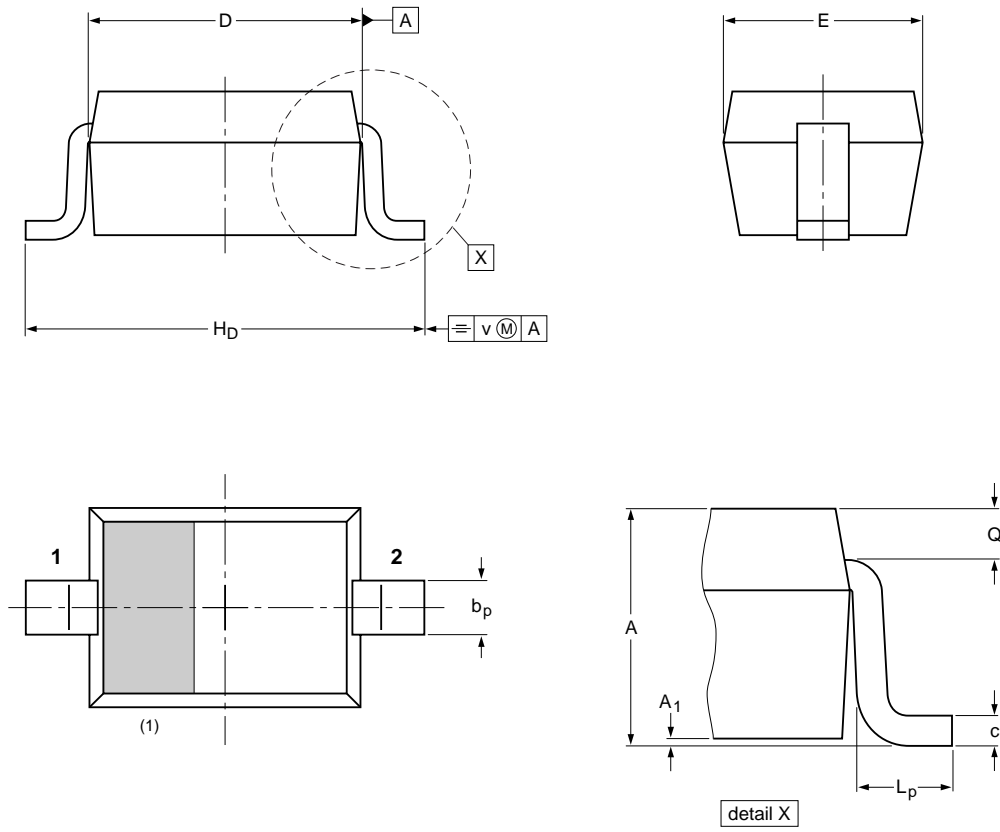
Silicon PIN diode

BAP63-03

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 _D	L _p	Q	v
mm	1.1 0.8	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	JEITA		
SOD323			SC-76		99-09-13 03-12-17

Silicon PIN diode

BAP63-03

DATA SHEET STATUS

LEVEL	DATA SHEET STATUS ⁽¹⁾	PRODUCT STATUS ⁽²⁾⁽³⁾	DEFINITION
I	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.
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3. For data sheets describing multiple type numbers, the highest-level product status determines the data sheet status.

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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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