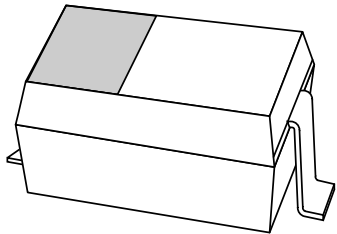


DATA SHEET



BAP65-03 Silicon PIN diode

Product specification
Supersedes data of 2001 May 07

2001 May 11

Silicon PIN diode

BAP65-03

FEATURES

- High voltage, current controlled
- RF resistor for RF switches
- Low diode capacitance
- Low diode forward resistance (low loss)
- Very low series inductance.

APPLICATIONS

- RF attenuators and switches
- Bandswitch for TV tuners
- Series diode for mobile communication transmit/receive switch.

DESCRIPTION

Planar PIN diode in a SOD323 small SMD plastic package.

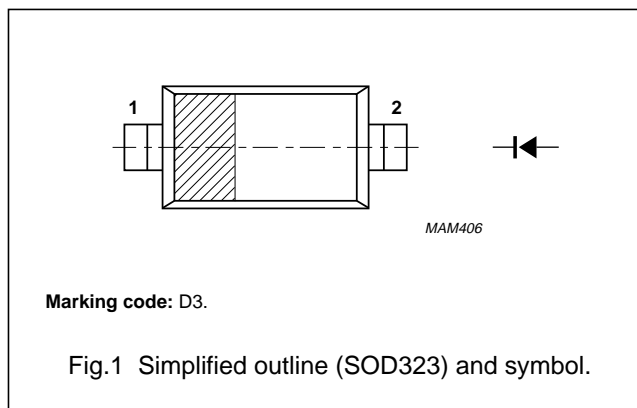
LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V_R	continuous reverse voltage		–	30	V
I_F	continuous forward current		–	100	mA
P_{tot}	total power dissipation	$T_s \leq 90\text{ °C}$	–	500	mW
T_{stg}	storage temperature		–65	+150	°C
T_j	junction temperature		–65	+150	°C

PINNING

PIN	DESCRIPTION
1	cathode
2	anode



Silicon PIN diode

BAP65-03

ELECTRICAL CHARACTERISTICST_j = 25 °C unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	TYP.	MAX.	UNIT
V _F	forward voltage	I _F = 50 mA	0.9	1.1	V
I _R	reverse leakage current	V _R = 20 V	–	20	nA
C _d	diode capacitance	V _R = 0 V; f = 1 MHz	0.65	–	pF
		V _R = 1 V; f = 1 MHz	0.55	0.9	pF
		V _R = 3 V; f = 1 MHz	0.5	0.8	pF
		V _R = 20 V; f = 1 MHz	0.375	–	pF
r _D	diode forward resistance	I _F = 1 mA; f = 100 MHz	1	–	Ω
		I _F = 5 mA; f = 100 MHz; note 1	0.65	0.95	Ω
		I _F = 10 mA; f = 100 MHz; note 1	0.56	0.9	Ω
		I _F = 100 mA; f = 100 MHz	0.35	–	Ω
S ₂₁ ²	isolation	V _R = 0; f = 900 MHz	10.2	–	dB
		V _R = 0; f = 1800 MHz	5.8	–	dB
		V _R = 0; f = 2450 MHz	4.1	–	dB
S ₂₁ ²	insertion loss	I _F = 1 mA; f = 900 MHz	0.1	–	dB
		I _F = 1 mA; f = 1800 MHz	0.14	–	dB
		I _F = 1 mA; f = 2450 MHz	0.18	–	dB
S ₂₁ ²	insertion loss	I _F = 5 mA; f = 900 MHz	0.06	–	dB
		I _F = 5 mA; f = 1800 MHz	0.1	–	dB
		I _F = 5 mA; f = 2450 MHz	0.14	–	dB
S ₂₁ ²	insertion loss	I _F = 10 mA; f = 900 MHz	0.06	–	dB
		I _F = 10 mA; f = 1800 MHz	0.1	–	dB
		I _F = 10 mA; f = 2450 MHz	0.13	–	dB
S ₂₁ ²	insertion loss	I _F = 100 mA; f = 900 MHz	0.05	–	dB
		I _F = 100 mA; f = 1800 MHz	0.1	–	dB
		I _F = 100 mA; f = 2450 MHz	0.14	–	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	0.17	–	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.

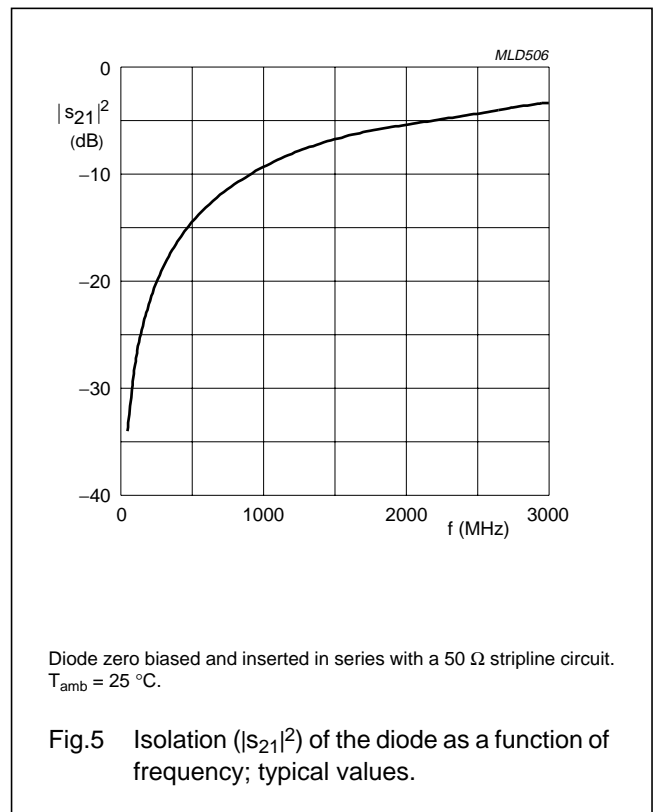
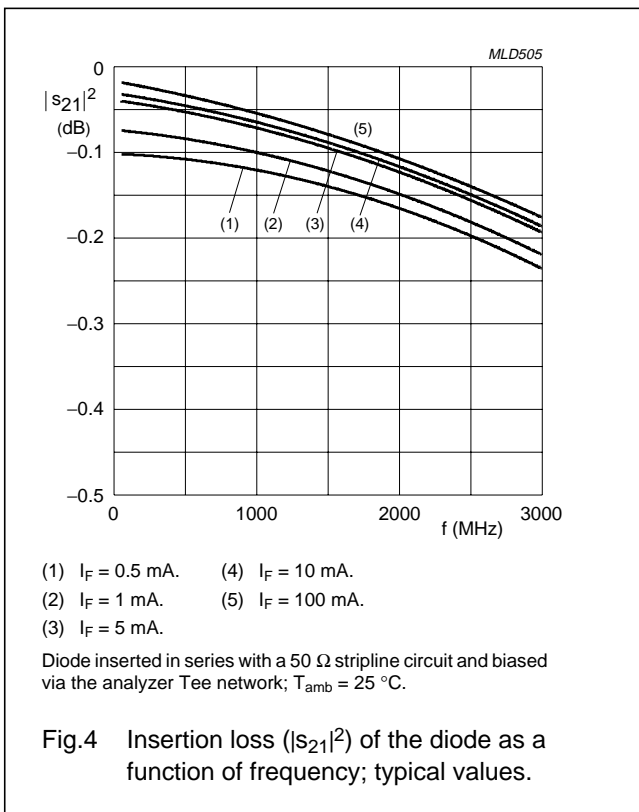
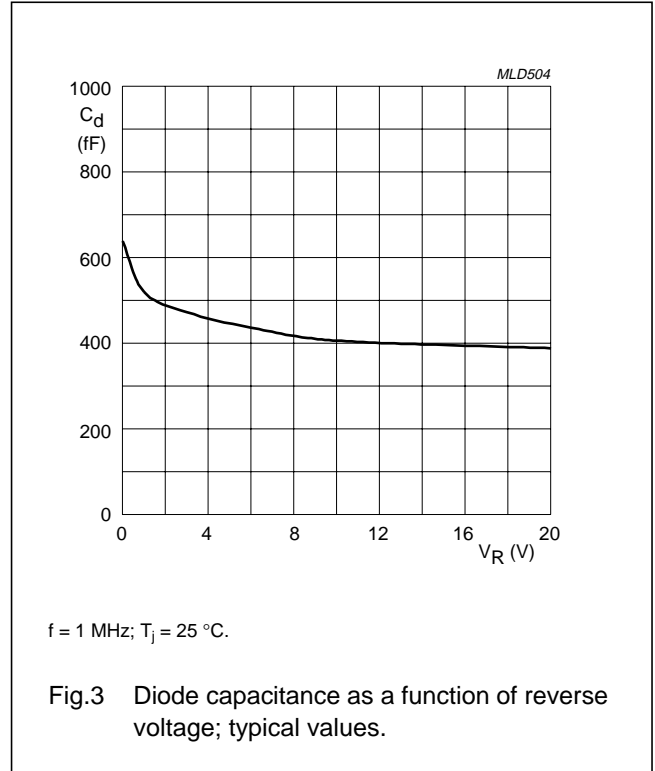
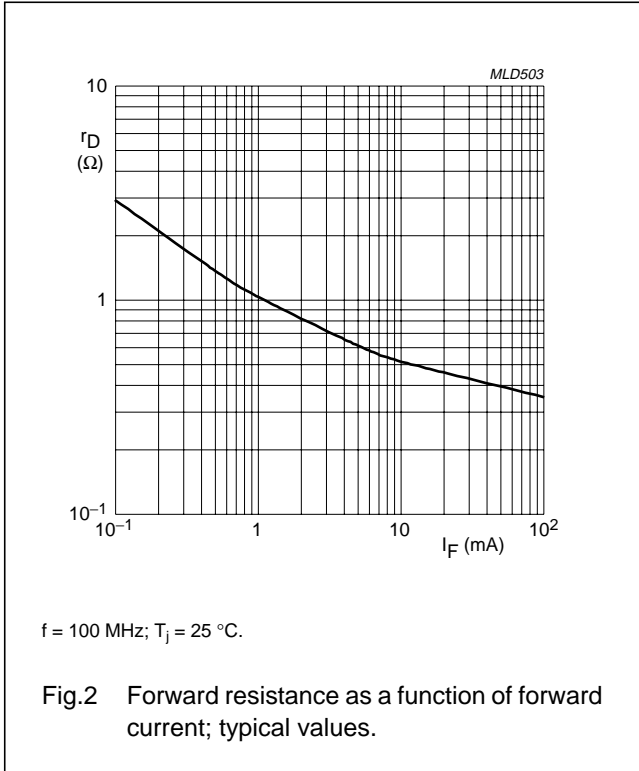
THERMAL CHARACTERISTICS

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

Silicon PIN diode

BAP65-03

GRAPHICAL DATA



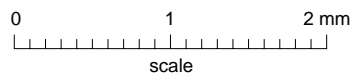
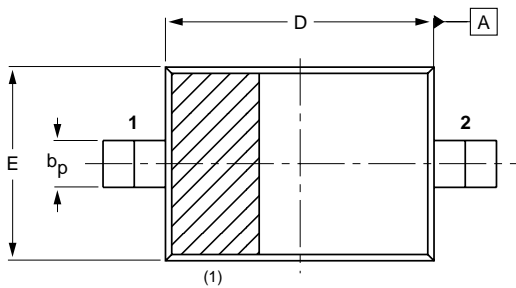
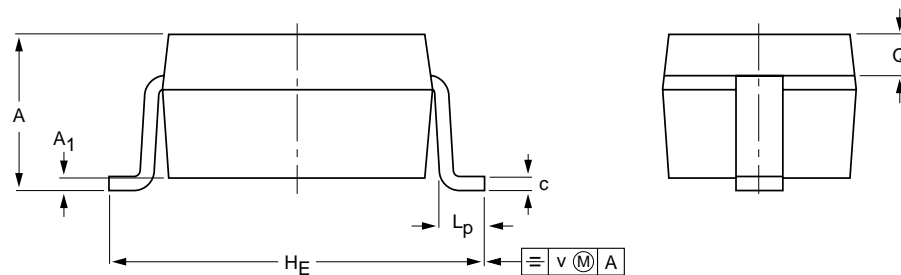
Silicon PIN diode

BAP65-03

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 _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

BAP65-03

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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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Notes

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Silicon PIN diode

BAP65-03

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