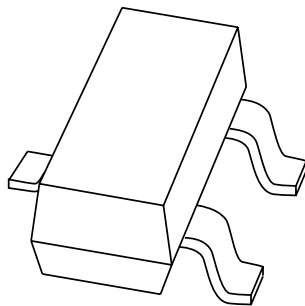


DATA SHEET



BAP65-05 Silicon PIN diode

Product specification

2001 May 07

Silicon PIN diode

BAP65-05

FEATURES

- Two elements in common cathode configuration
- High voltage, current controlled
- RF resistor for RF switches
- Low diode capacitance
- Low diode forward resistance (low loss).

APPLICATIONS

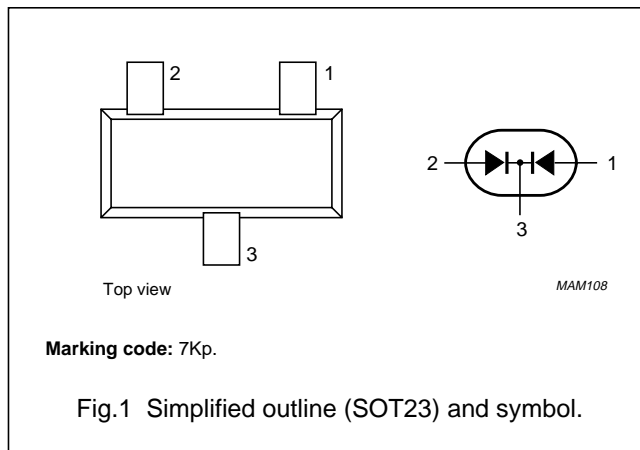
- RF attenuators and switches
- Bandswitch for TV tuners
- Series diode for mobile communication transmit-receive switch.

DESCRIPTION

Tow planar PIN diodes in a SOT23 small SMD plastic package.

PINNING

PIN	DESCRIPTION
1	anode (a ₁)
2	anode (a ₂)
3	common cathode



LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
Per diode					
V _R	continuous reverse voltage		–	30	V
I _F	continuous forward current		–	100	mA
P _{tot}	total power dissipation	T _s ≤ 90 °C	–	250	mW
T _{stg}	storage temperature		–65	+150	°C
T _j	junction temperature		–65	+150	°C

Silicon PIN diode

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ELECTRICAL CHARACTERISTICST_j = 25 °C unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	TYP.	MAX.	UNIT
Per diode					
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	0.7	–	pF
		V _R = 1 V; f = 1 MHz	0.575	0.9	pF
		V _R = 3 V; f = 1 MHz	0.525	0.8	pF
		V _R = 20 V; f = 1 MHz	0.425	–	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	9.4	–	dB
		V _R = 0; f = 1800 MHz	4.8	–	dB
		V _R = 0; f = 2450 MHz	3.1	–	dB
S ₂₁ ²	insertion loss	I _F = 1 mA; f = 900 MHz	0.1	–	dB
		I _F = 1 mA; f = 1800 MHz	0.18	–	dB
		I _F = 1 mA; f = 2450 MHz	0.28	–	dB
S ₂₁ ²	insertion loss	I _F = 5 mA; f = 900 MHz	0.08	–	dB
		I _F = 5 mA; f = 1800 MHz	0.16	–	dB
		I _F = 5 mA; f = 2450 MHz	0.26	–	dB
S ₂₁ ²	insertion loss	I _F = 10 mA; f = 900 MHz	0.07	–	dB
		I _F = 10 mA; f = 1800 MHz	0.15	–	dB
		I _F = 10 mA; f = 2450 MHz	0.25	–	dB
S ₂₁ ²	insertion loss	I _F = 100 mA; f = 900 MHz	0.06	–	dB
		I _F = 100 mA; f = 1800 MHz	0.14	–	dB
		I _F = 100 mA; f = 2450 MHz	0.24	–	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	1.4	–	nH

Note

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

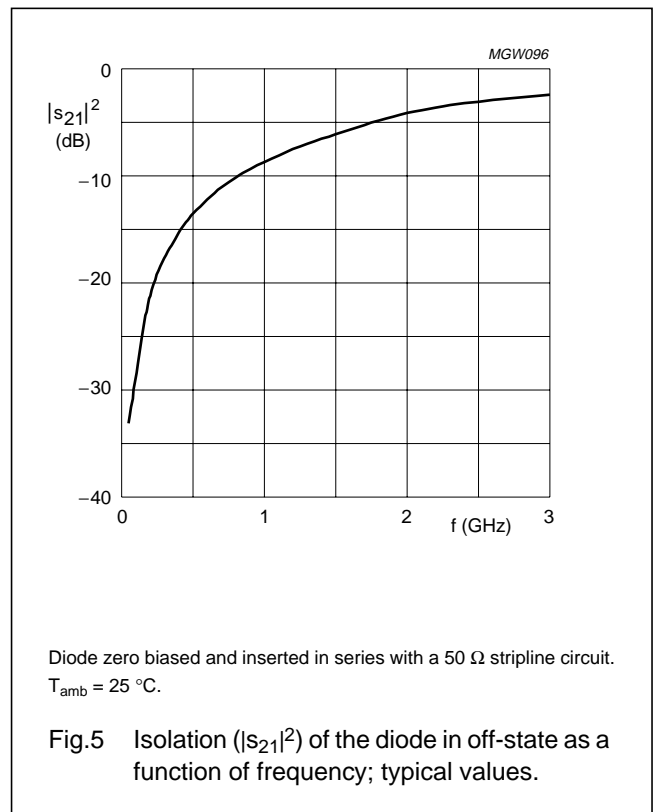
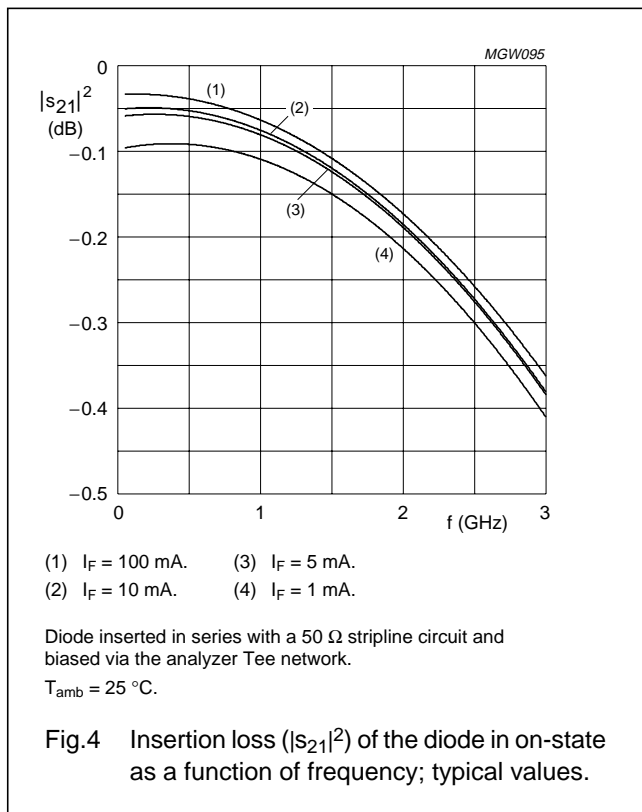
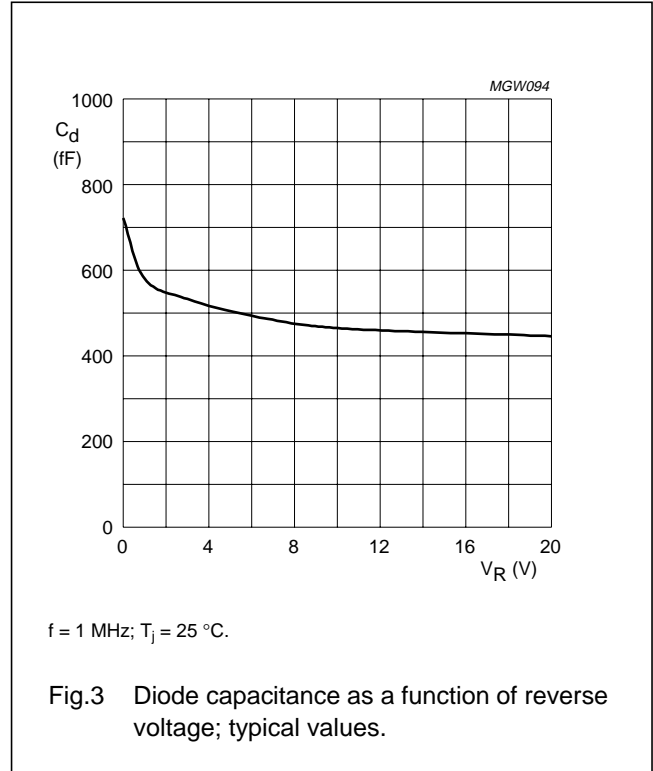
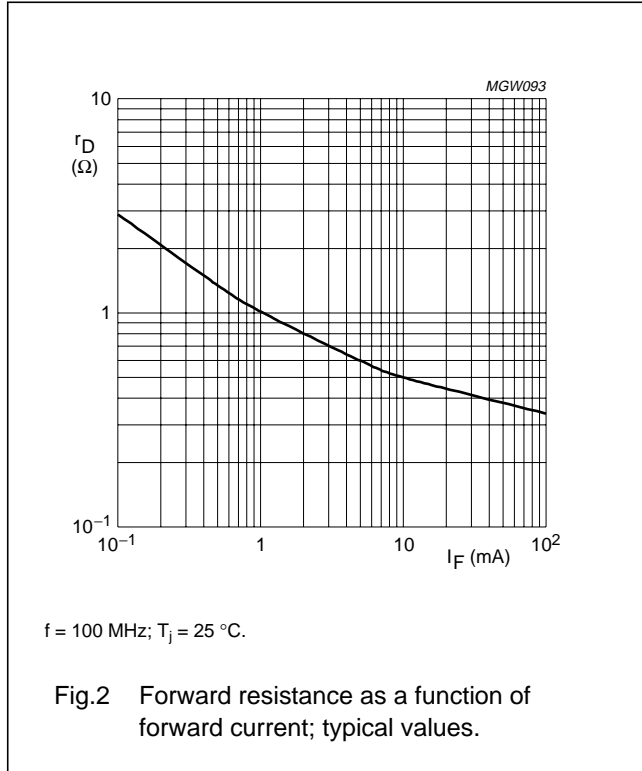
THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	VALUE	UNIT
R _{th j-s}	thermal resistance from junction to soldering point	220	K/W

Silicon PIN diode

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GRAPHICAL DATA



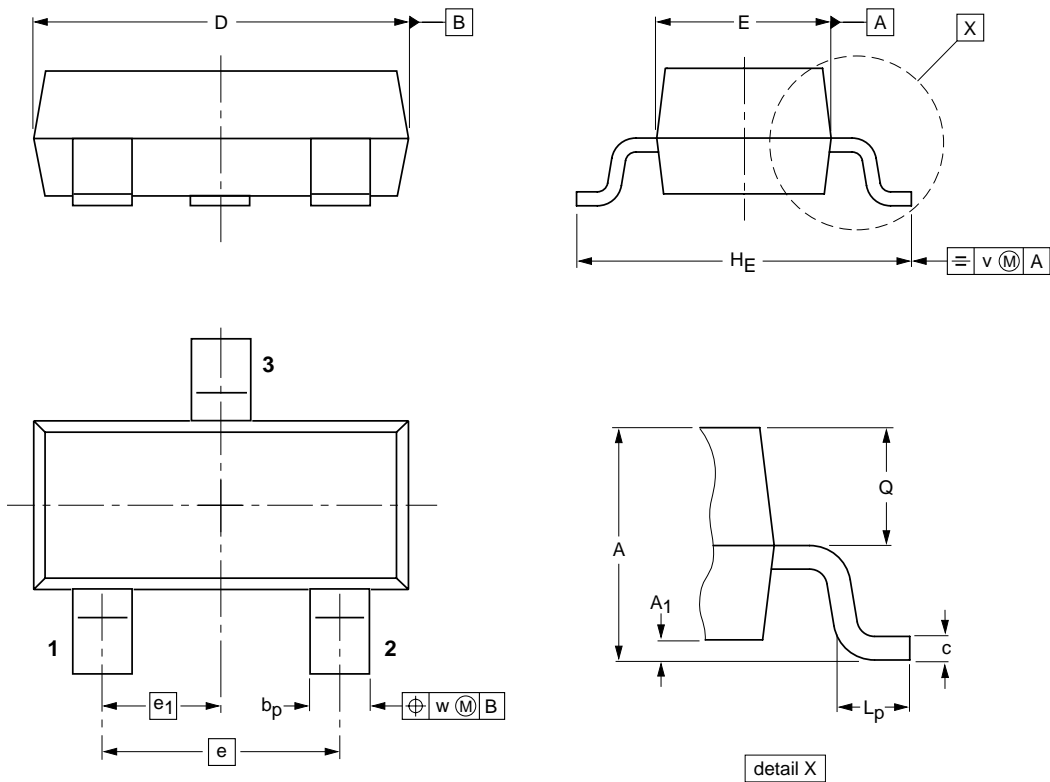
Silicon PIN diode

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PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT23



DIMENSIONS (mm are the original dimensions)

UNIT	A	A ₁ max.	b _p	c	D	E	e	e ₁	H _E	L _p	Q	v	w
mm	1.1 0.9	0.1	0.48 0.38	0.15 0.09	3.0 2.8	1.4 1.2	1.9	0.95	2.5 2.1	0.45 0.15	0.55 0.45	0.2	0.1

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ			
SOT23		TO-236AB				97-02-28 99-09-13

Silicon PIN diode

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DATA SHEET STATUS

DATA SHEET STATUS ⁽¹⁾	PRODUCT STATUS ⁽²⁾	DEFINITIONS
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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

BAP65-05

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