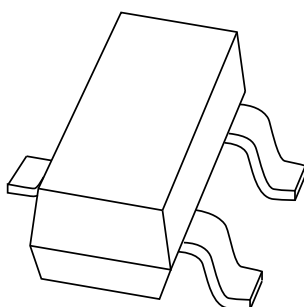


DATA SHEET



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

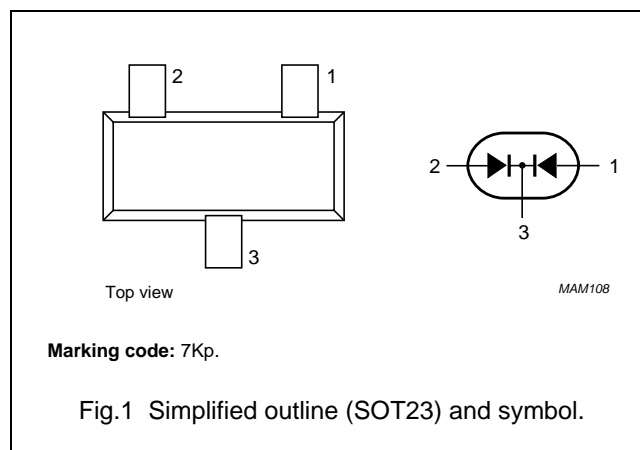
- RF attenuators and switches
- Bandswitch for TV tuners
- Series diode for mobile communication transmit-receive switch.

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

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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.

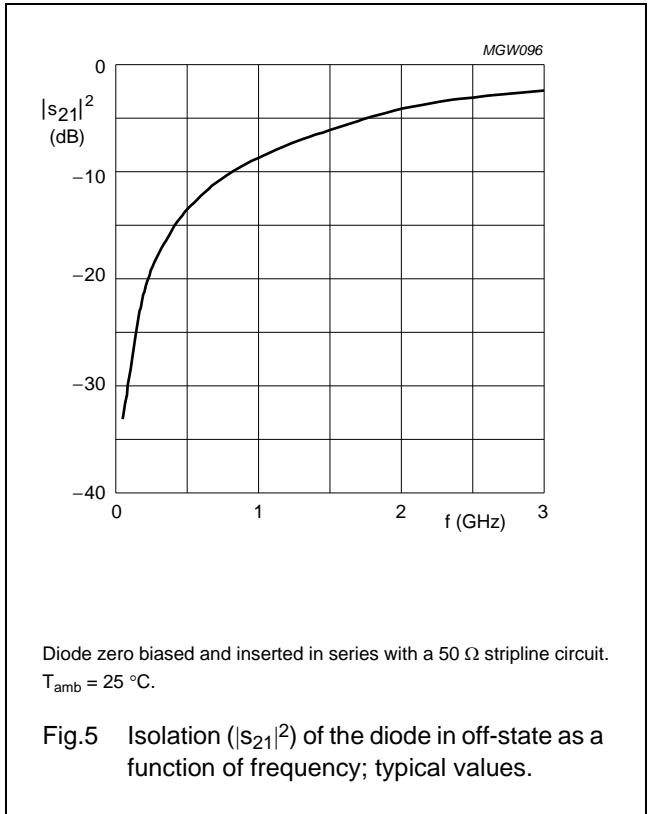
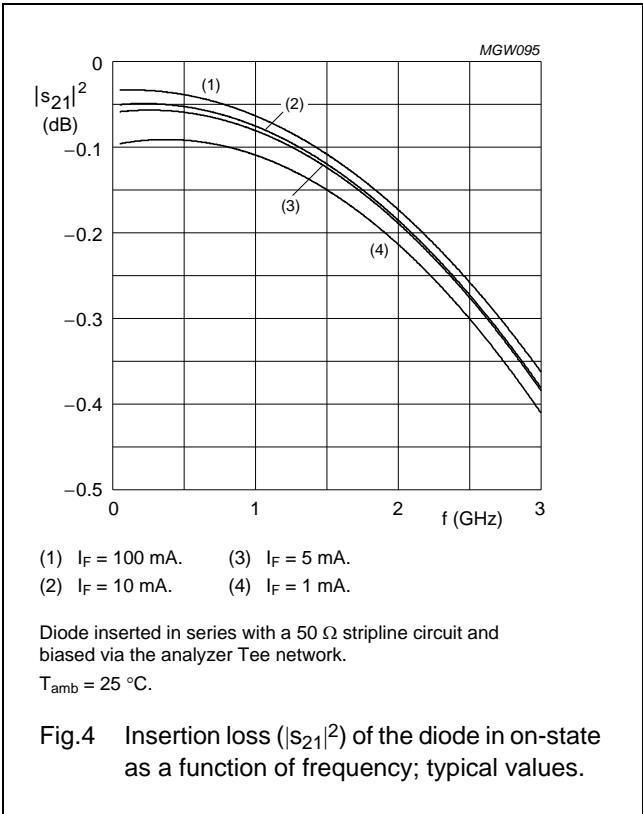
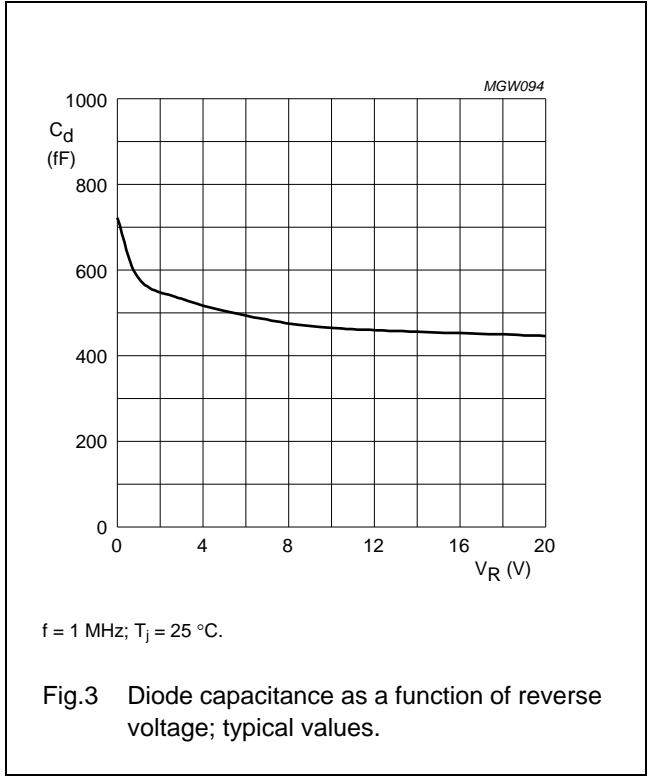
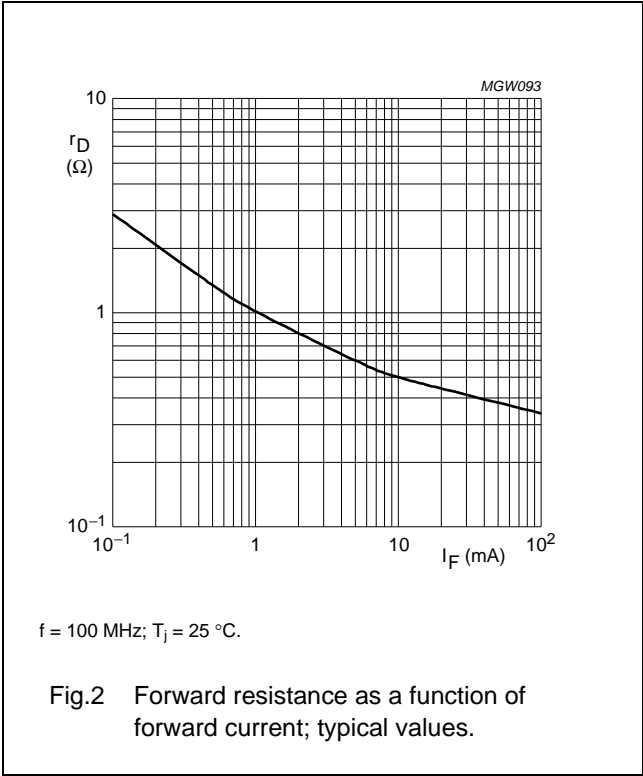
THERMAL CHARACTERISTICS

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

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GRAPHICAL DATA



Silicon PIN diode

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PACKAGE OUTLINE

Plastic surface-mounted package; 3 leads

SOT23

Technical drawing of the BAP65-05 package showing top, side, and bottom views with dimensions D, B, E, A, H_E, Q, A₁, c, L_p, e, e₁, b_p, and a detail X of the lead profile.

0 1 2 mm
scale

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	JEITA			
SOT23		TO-236AB				04-11-04 06-03-16

Silicon PIN diode

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DATA SHEET STATUS

DOCUMENT STATUS ⁽¹⁾	PRODUCT STATUS ⁽²⁾	DEFINITION
Objective data sheet	Development	This document contains data from the objective specification for product development.
Preliminary data sheet	Qualification	This document contains data from the preliminary specification.
Product data sheet	Production	This document contains the product specification.

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Silicon PIN diode

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Customer notification

This data sheet was changed to reflect the new company name NXP Semiconductors, including new legal definitions and disclaimers. No changes were made to the technical content, except for package outline drawings which were updated to the latest version.

Contact information

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