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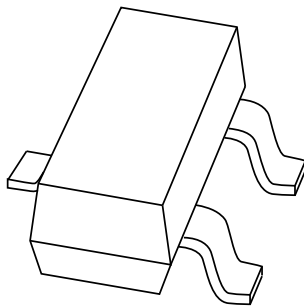
Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



# DATA SHEET



**BAP50-04**

General purpose PIN diode

Product specification  
Supersedes data of 1999 May 10

1999 Dec 03



# General purpose PIN diode

# BAP50-04

### FEATURES

- Two elements in series configuration in a small-sized plastic SMD package
- Low diode capacitance
- Low diode forward resistance.

### APPLICATIONS

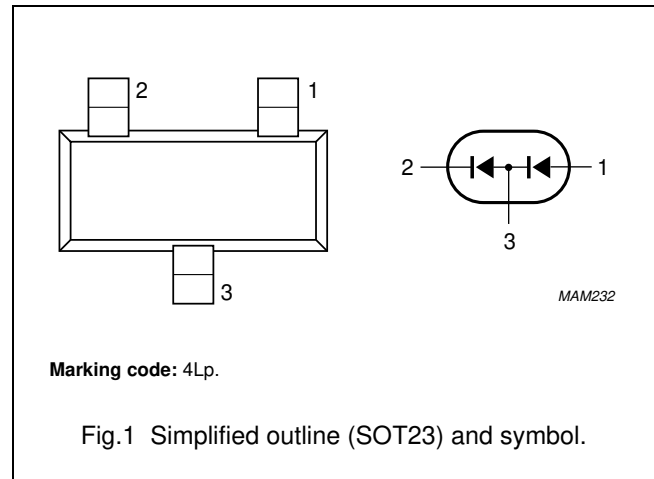
- General RF applications.

### DESCRIPTION

Two planar PIN diodes in series configuration in an SOT23 small plastic SMD package.

### PINNING

PIN	DESCRIPTION
1	anode
2	cathode
3	common connection



### LIMITING VALUES

In accordance with the Absolute Maximum Rating System (IEC 134).

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
<b>Per diode</b>					
$V_R$	continuous reverse voltage		–	50	V
$I_F$	continuous forward current		–	50	mA
$P_{tot}$	total power dissipation	$T_s = 90\text{ °C}$	–	250	mW
$T_{stg}$	storage temperature		–65	+150	°C
$T_j$	junction temperature		–65	+150	°C

## General purpose PIN diode

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**ELECTRICAL CHARACTERISTICS** $T_j = 25\text{ °C}$  unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
<b>Per diode</b>						
$V_F$	forward voltage	$I_F = 50\text{ mA}$	–	0.95	1.1	V
$V_R$	reverse voltage	$I_R = 10\text{ }\mu\text{A}$	50	–	–	V
$I_R$	reverse current	$V_R = 50\text{ V}$	–	–	100	nA
$C_d$	diode capacitance	$V_R = 0; f = 1\text{ MHz}$	–	0.45	–	pF
		$V_R = 1\text{ V}; f = 1\text{ MHz}$	–	0.35	0.6	pF
		$V_R = 5\text{ V}; f = 1\text{ MHz}$	–	0.3	0.5	pF
$r_D$	diode forward resistance	$I_F = 0.5\text{ mA}; f = 100\text{ MHz}; \text{note 1}$	–	25	40	$\Omega$
		$I_F = 1\text{ mA}; f = 100\text{ MHz}; \text{note 1}$	–	14	25	$\Omega$
		$I_F = 10\text{ mA}; f = 100\text{ MHz}; \text{note 1}$	–	3	5	$\Omega$
$\tau_L$	charge carrier life time	when switched from $I_F 10\text{ mA}$ to $I_R 6\text{ mA}$ ; $R_L 100\text{ }\Omega$ ; measured at $I_R 3\text{ mA}$	–	1.05	–	$\mu\text{s}$
$L_S$	series inductance		–	1.4	–	nH

**Note**

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

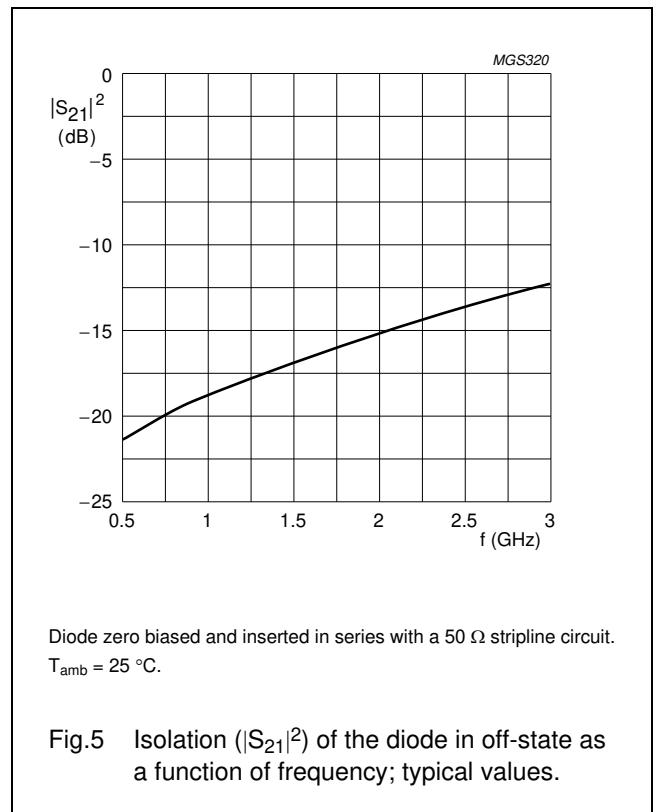
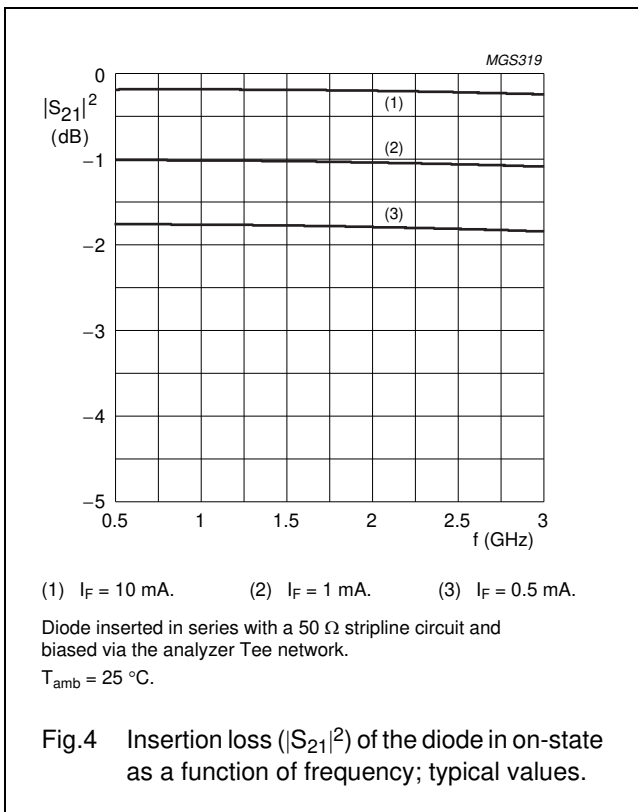
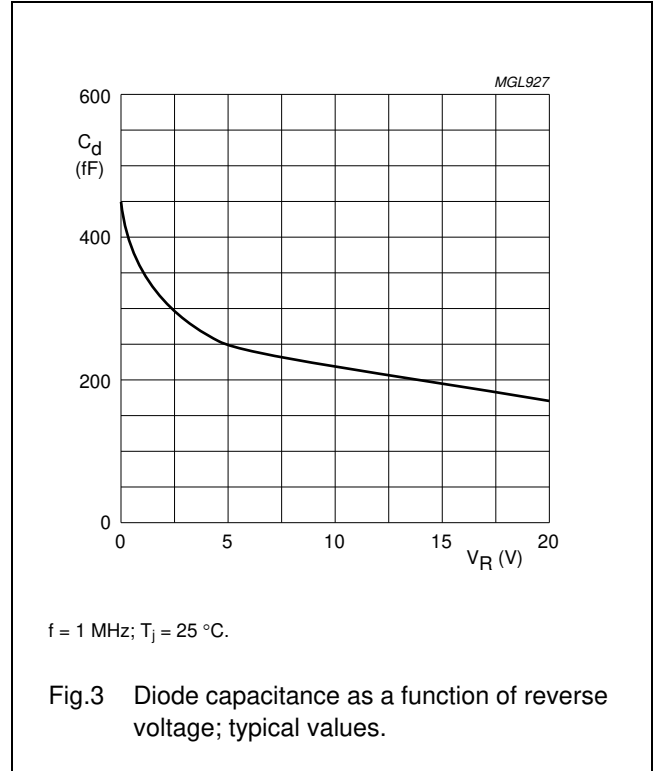
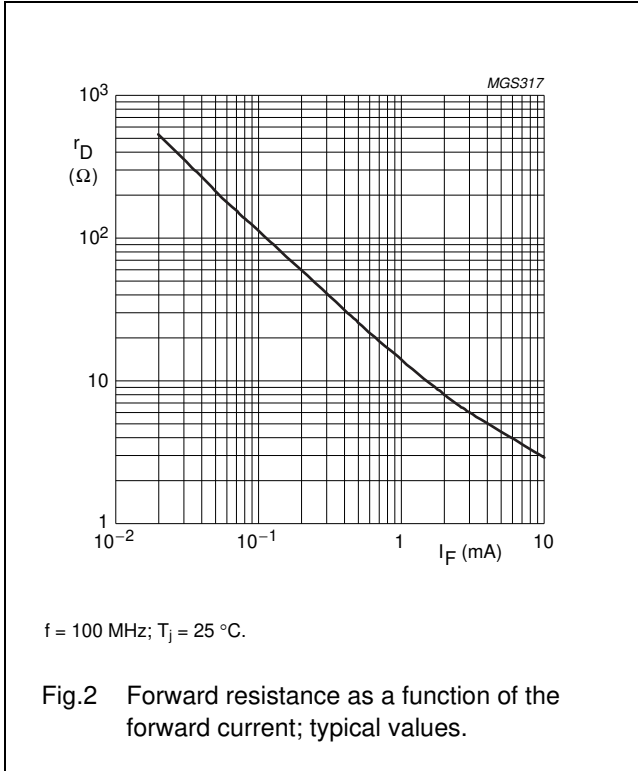
**THERMAL CHARACTERISTICS**

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

General purpose PIN diode

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GRAPHICAL DATA



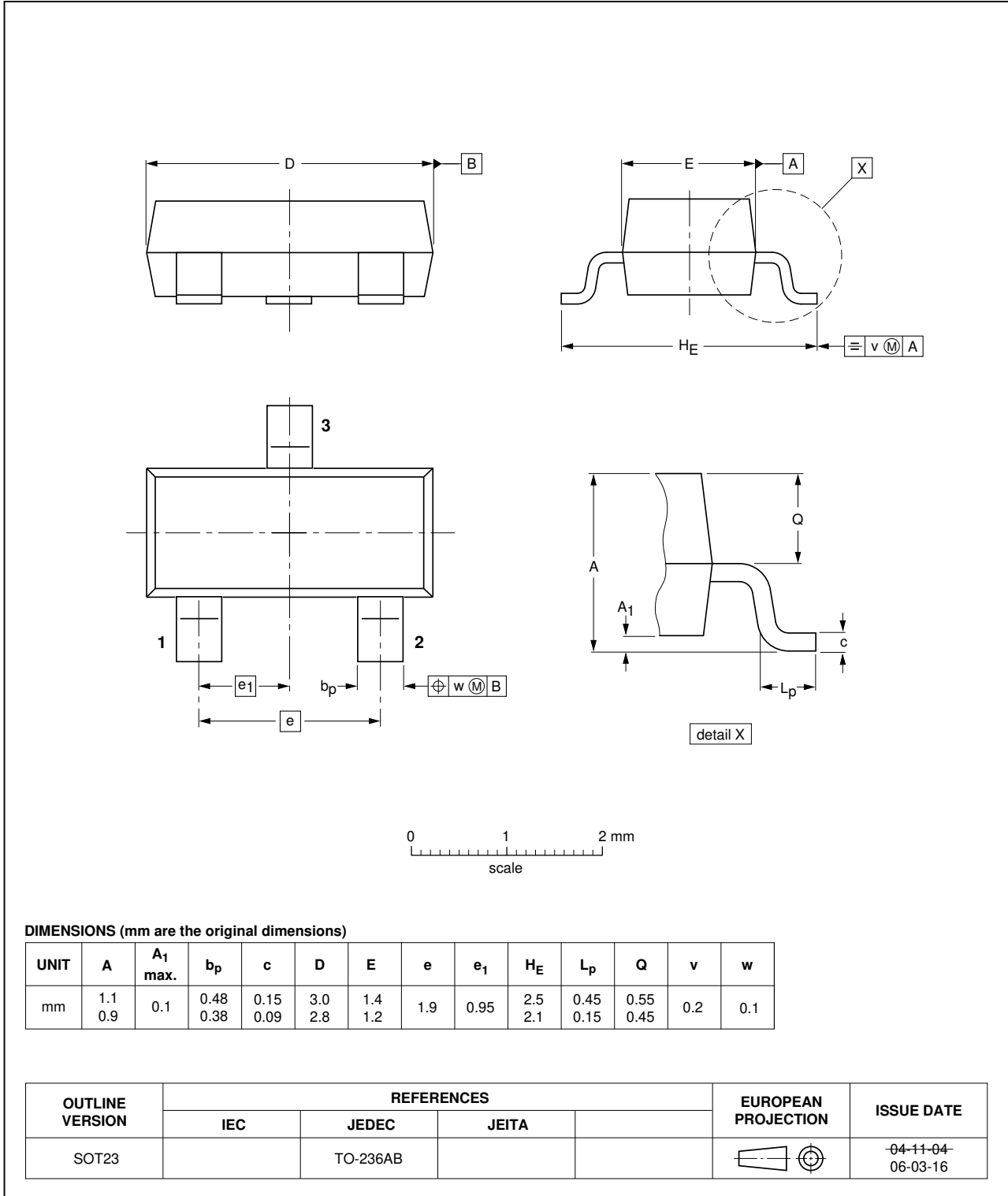
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PACKAGE OUTLINE

Plastic surface-mounted package; 3 leads

SOT23



## General purpose PIN diode

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## DATA SHEET STATUS

DOCUMENT STATUS <sup>(1)</sup>	PRODUCT STATUS <sup>(2)</sup>	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.

## Notes

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## General purpose 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**

For additional information please visit: <http://www.nxp.com>

For sales offices addresses send e-mail to: [salesaddresses@nxp.com](mailto:salesaddresses@nxp.com)

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