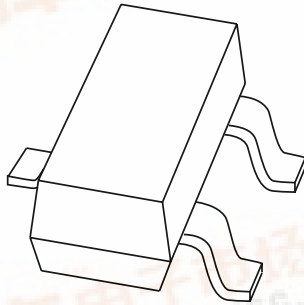


**DISCRETE SEMICONDUCTORS**

# 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

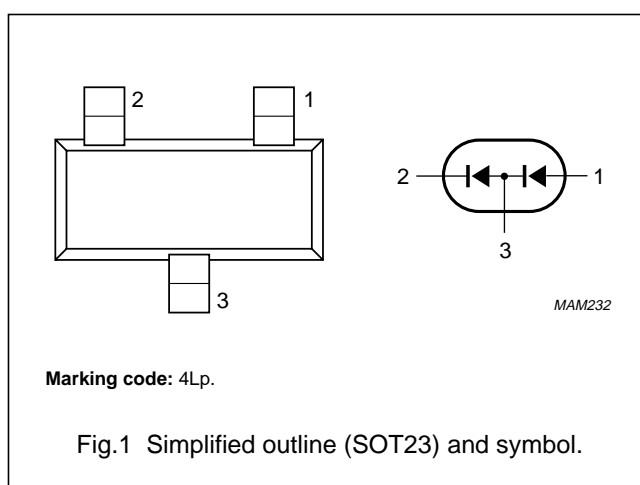
- General RF applications.

## 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.

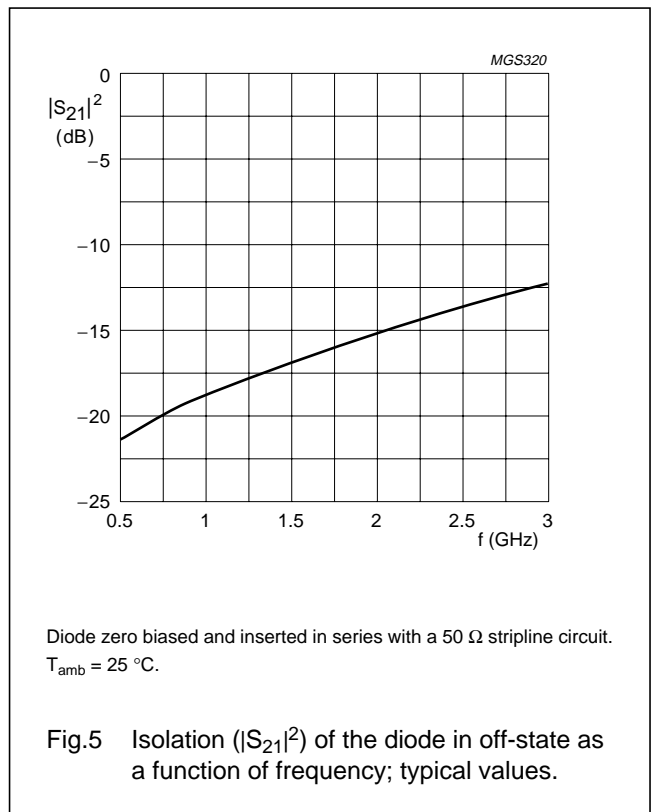
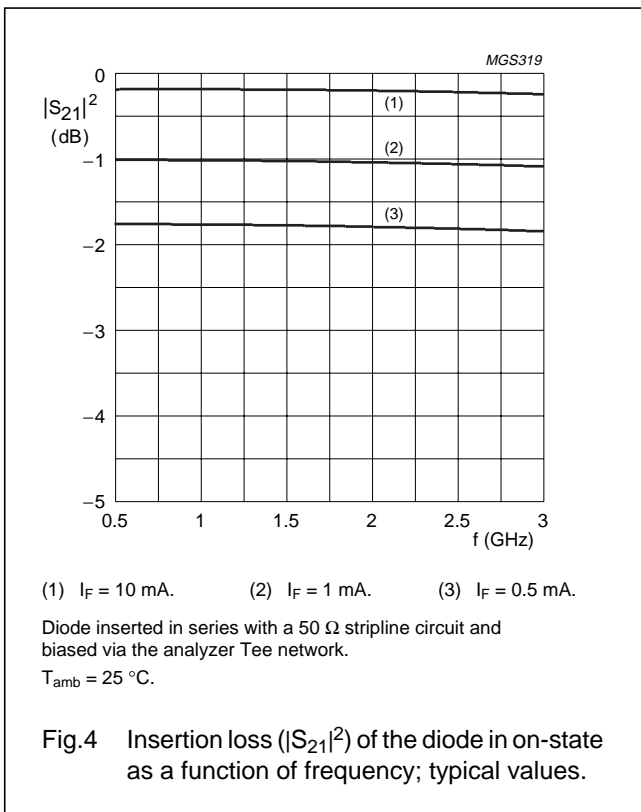
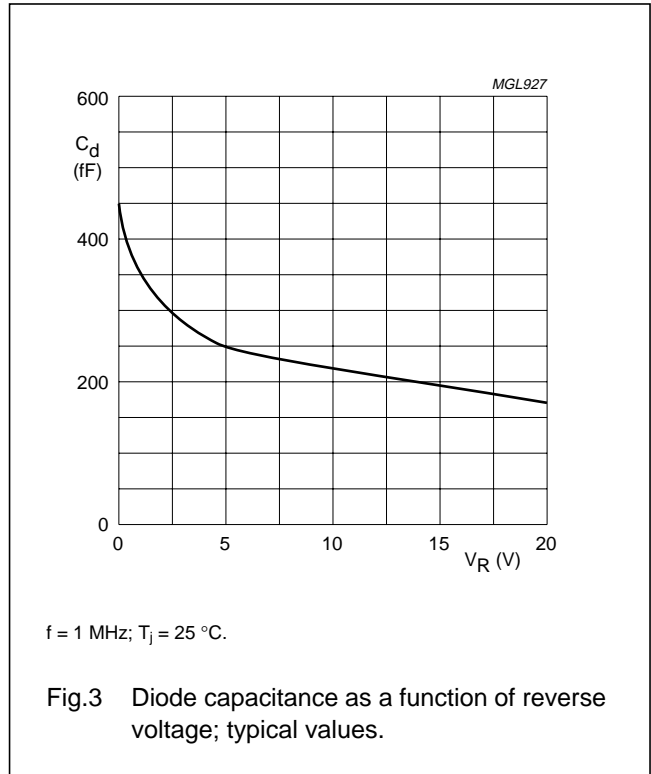
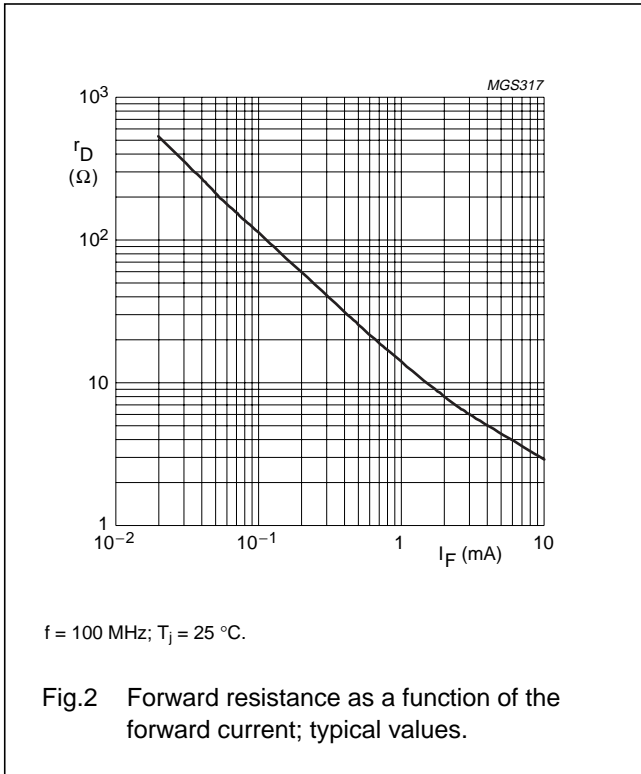
**THERMAL CHARACTERISTICS**

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



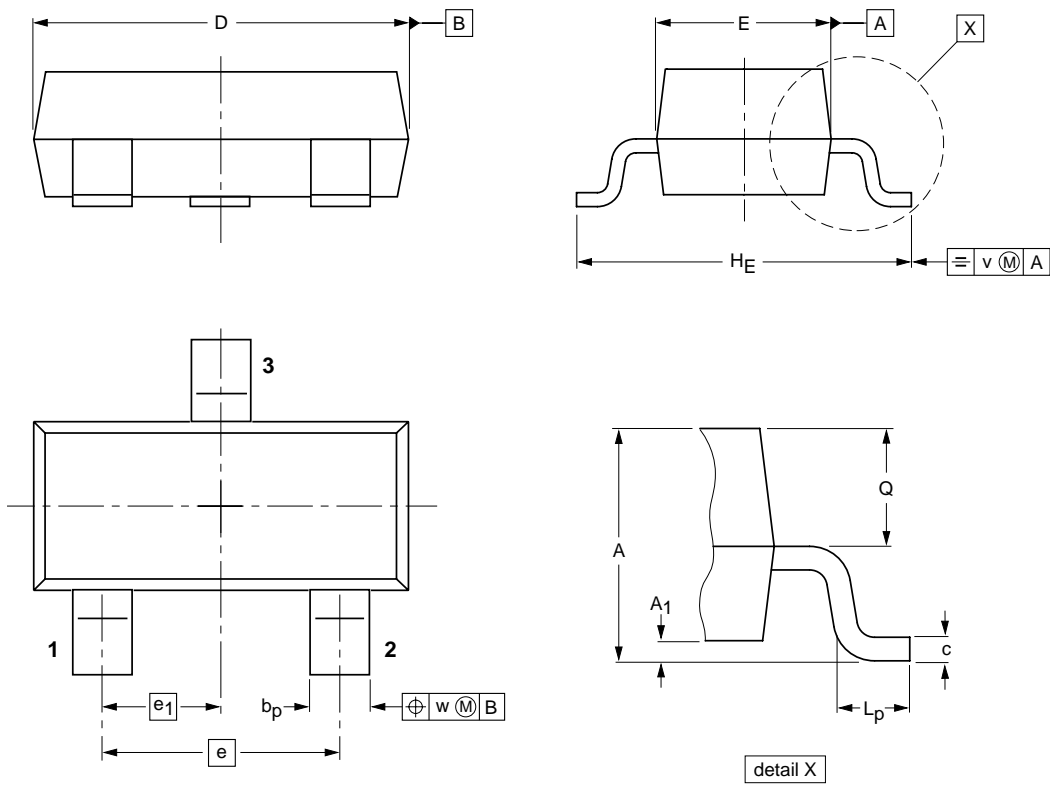
General purpose PIN diode

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PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT23



DIMENSIONS (mm are the original dimensions)

UNIT	A	A <sub>1</sub> max.	b <sub>p</sub>	c	D	E	e	e <sub>1</sub>	H <sub>E</sub>	L <sub>p</sub>	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

## General purpose PIN diode

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**DEFINITIONS**

<b>Data sheet status</b>	
Objective specification	This data sheet contains target or goal specifications for product development.
Preliminary specification	This data sheet contains preliminary data; supplementary data may be published later.
Product specification	This data sheet contains final product specifications.
<b>Limiting values</b>	
Limiting values given are in accordance with the Absolute Maximum Rating System (IEC 134). 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.	
<b>Application information</b>	
Where application information is given, it is advisory and does not form part of the specification.	

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General purpose PIN diode

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Printed in The Netherlands

125004/02/pp8

Date of release: 1999 Dec 03

Document order number: 9397 750 06476

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