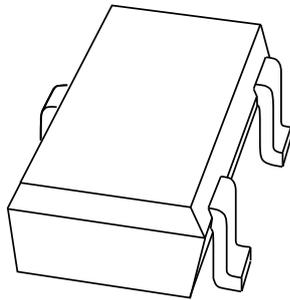


# DATA SHEET



**BAP50-05W**

General purpose PIN diode

Product specification  
Supersedes data of 2001 Mar 02

2001 Apr 17



# General purpose PIN diode

# BAP50-05W

### FEATURES

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

### APPLICATIONS

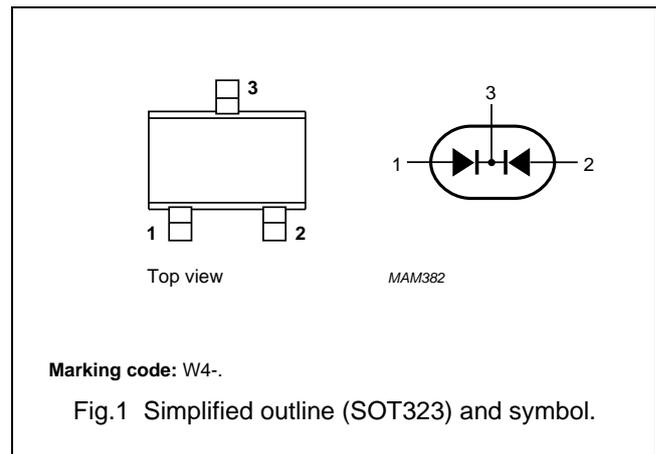
- General RF applications.

### DESCRIPTION

Two planar PIN diodes in common cathode configuration in a SOT323 small SMD plastic package.

### PINNING

PIN	DESCRIPTION
1	anode
2	anode
3	common cathode



### LIMITING VALUES

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

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	$T_s = 90\text{ °C}$	–	240	mW
$T_{stg}$	storage temperature		–65	+150	°C
$T_j$	junction temperature		–65	+150	°C

## General purpose PIN diode

## BAP50-05W

**ELECTRICAL CHARACTERISTICS**T<sub>j</sub> = 25 °C unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
<b>Per diode</b>						
V <sub>F</sub>	forward voltage	I <sub>F</sub> = 50 mA	–	0.95	1.1	V
V <sub>R</sub>	reverse voltage	I <sub>R</sub> = 10 μA	50	–	–	V
I <sub>R</sub>	reverse current	V <sub>R</sub> = 50 V	–	–	100	nA
C <sub>d</sub>	diode capacitance	V <sub>R</sub> = 0; f = 1 MHz	–	0.45	–	pF
		V <sub>R</sub> = 1 V; f = 1 MHz	–	0.35	0.6	pF
		V <sub>R</sub> = 5 V; f = 1 MHz	–	0.3	0.5	pF
r <sub>D</sub>	diode forward resistance	I <sub>F</sub> = 0.5 mA; f = 100 MHz; note 1	–	25	40	Ω
		I <sub>F</sub> = 1 mA; f = 100 MHz; note 1	–	14	25	Ω
		I <sub>F</sub> = 10 mA; f = 100 MHz; note 1	–	3	5	Ω
s <sub>21</sub>   <sup>2</sup>	isolation	V <sub>R</sub> = 0; f = 900 MHz	–	19	–	dB
		V <sub>R</sub> = 0; f = 1800 MHz	–	15.7	–	dB
		V <sub>R</sub> = 0; f = 2450 MHz	–	13.5	–	dB
s <sub>21</sub>   <sup>2</sup>	insertion loss	I <sub>F</sub> = 0.5 mA; f = 900 MHz	–	1.84	–	dB
		I <sub>F</sub> = 0.5 mA; f = 1800 MHz	–	1.90	–	dB
		I <sub>F</sub> = 0.5 mA; f = 2450 MHz	–	1.92	–	dB
s <sub>21</sub>   <sup>2</sup>	insertion loss	I <sub>F</sub> = 1 mA; f = 900 MHz	–	1.08	–	dB
		I <sub>F</sub> = 1 mA; f = 1800 MHz	–	1.13	–	dB
		I <sub>F</sub> = 1 mA; f = 2450 MHz	–	1.17	–	dB
s <sub>21</sub>   <sup>2</sup>	insertion loss	I <sub>F</sub> = 10 mA; f = 900 MHz	–	0.26	–	dB
		I <sub>F</sub> = 10 mA; f = 1800 MHz	–	0.30	–	dB
		I <sub>F</sub> = 10 mA; f = 2450 MHz	–	0.36	–	dB
τ <sub>L</sub>	charge carrier life time	when switched from I <sub>F</sub> = 10 mA to I <sub>R</sub> = 6 mA; R <sub>L</sub> = 100 Ω; measured at I <sub>R</sub> = 3 mA	–	1.05	–	μs
L <sub>S</sub>	series inductance	I <sub>F</sub> = 100 mA; f = 100 MHz	–	1.6	–	nH

**Note**

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

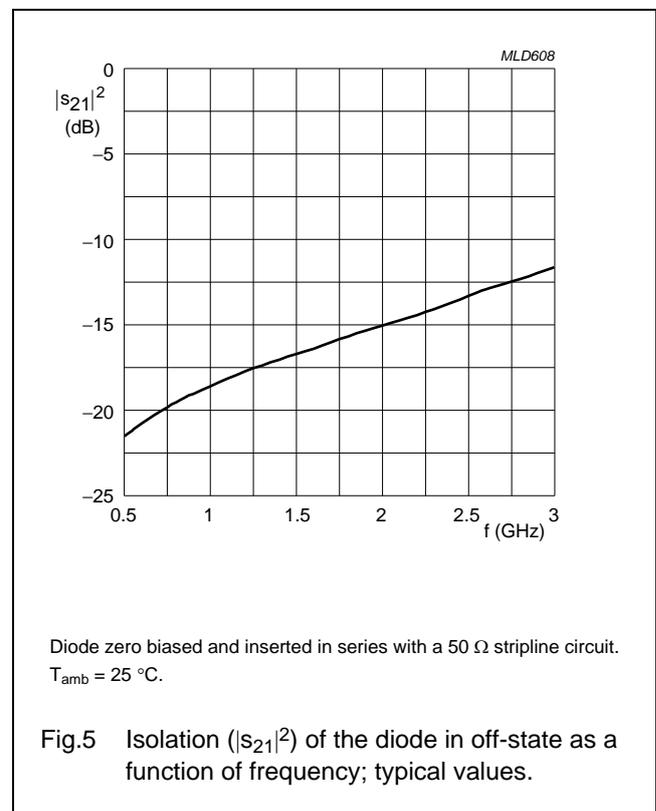
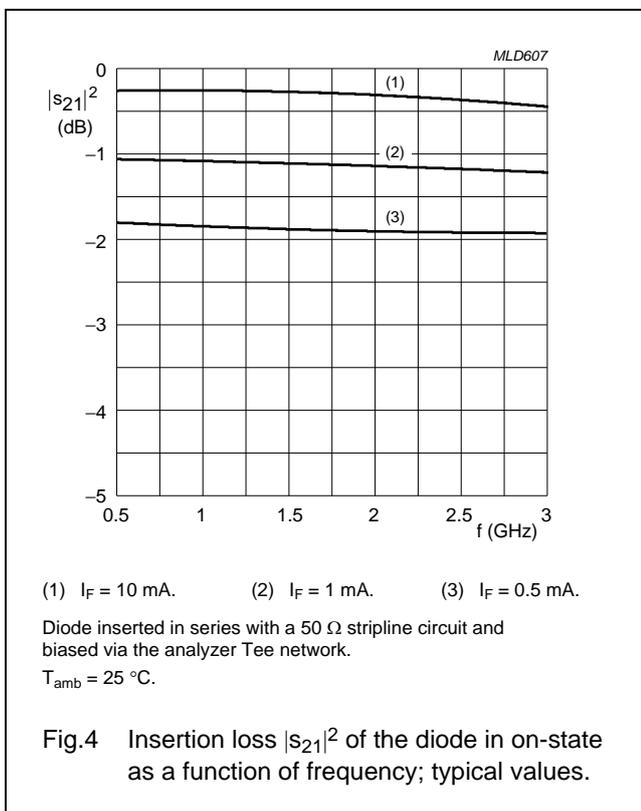
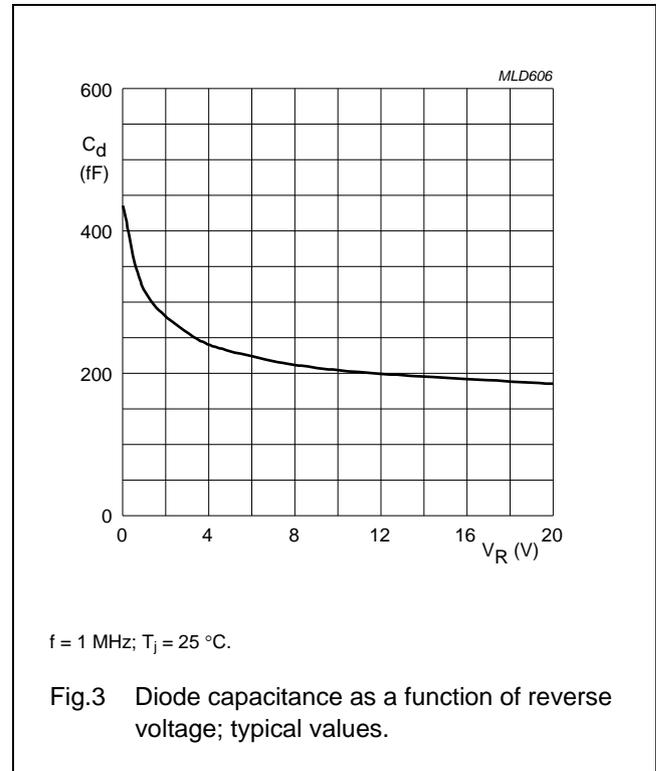
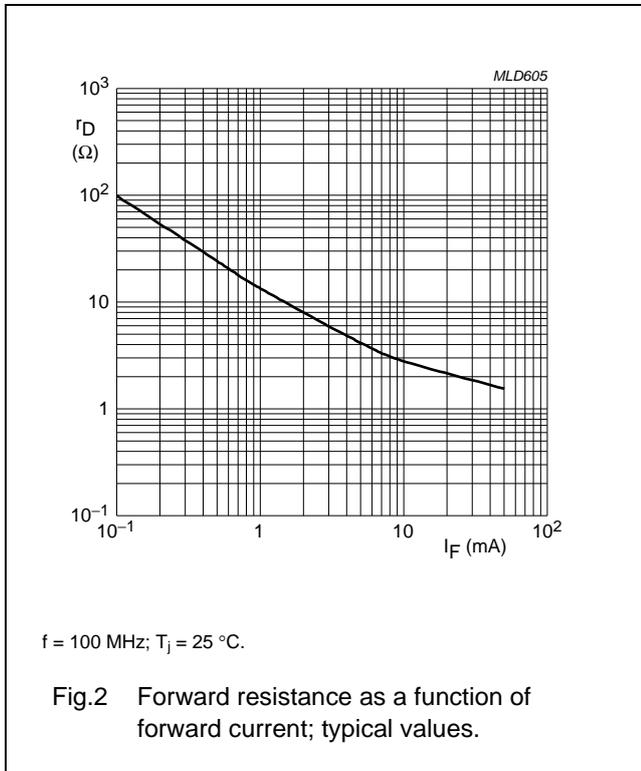
**THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	VALUE	UNIT
R <sub>th j-s</sub>	thermal resistance from junction to soldering point	250	K/W

General purpose PIN diode

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GRAPHICAL DATA



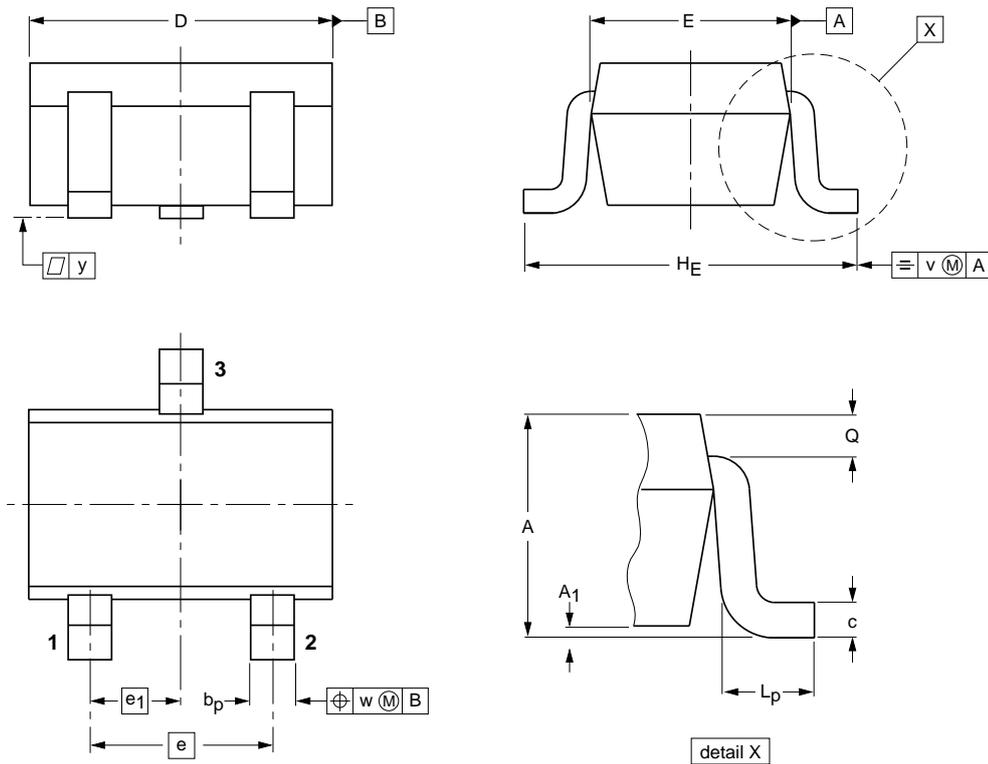
General purpose PIN diode

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PACKAGE OUTLINE

Plastic surface-mounted package; 3 leads

SOT323



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 0.8	0.1	0.4 0.3	0.25 0.10	2.2 1.8	1.35 1.15	1.3	0.65	2.2 2.0	0.45 0.15	0.23 0.13	0.2	0.2

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	JEITA			
SOT323			SC-70			<del>04-11-04</del> 06-03-16

# 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.

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## General purpose PIN diode

## BAP50-05W

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## **Contact information**

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