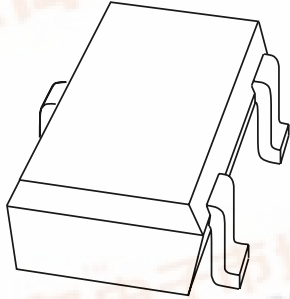


**DISCRETE SEMICONDUCTORS**

# DATA SHEET



## **BAP51-04W**

### General purpose PIN diode

Preliminary specification

2002 Feb 19

# General purpose PIN diode

# BAP51-04W

## FEATURES

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

## APPLICATIONS

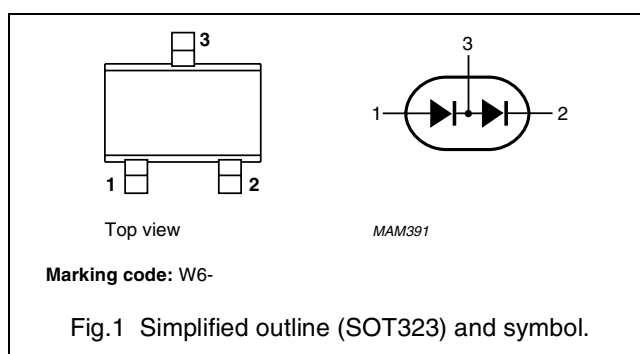
- General RF applications.

## DESCRIPTION

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

## PINNING

PIN	DESCRIPTION
1	anode
2	cathode
3	common connection



## 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

## BAP51-04W

**ELECTRICAL CHARACTERISTICS**

$T_j = 25\text{ }^\circ\text{C}$  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	$V_R = 0$ ; $f = 1\text{ MHz}$	–	0.4	–	pF
		$V_R = 1\text{ V}$ ; $f = 1\text{ MHz}$	–	0.3	0.55	pF
		$V_R = 5\text{ V}$ ; $f = 1\text{ MHz}$	–	0.2	0.35	pF
$r_D$	diode forward resistance	$I_F = 0.5\text{ mA}$ ; $f = 100\text{ MHz}$ ; note 1	–	5.5	9	$\Omega$
		$I_F = 1\text{ mA}$ ; $f = 100\text{ MHz}$ ; note 1	–	3.6	6.5	$\Omega$
		$I_F = 10\text{ mA}$ ; $f = 100\text{ MHz}$ ; note 1	–	1.5	2.5	$\Omega$
$\tau_L$	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 $I_R = 3\text{ mA}$	–	550	–	ns
$L_S$	series inductance	$I_F = 10\text{ mA}$ ; $f = 100\text{ MHz}$	–	1.6	–	nH

**Note**

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

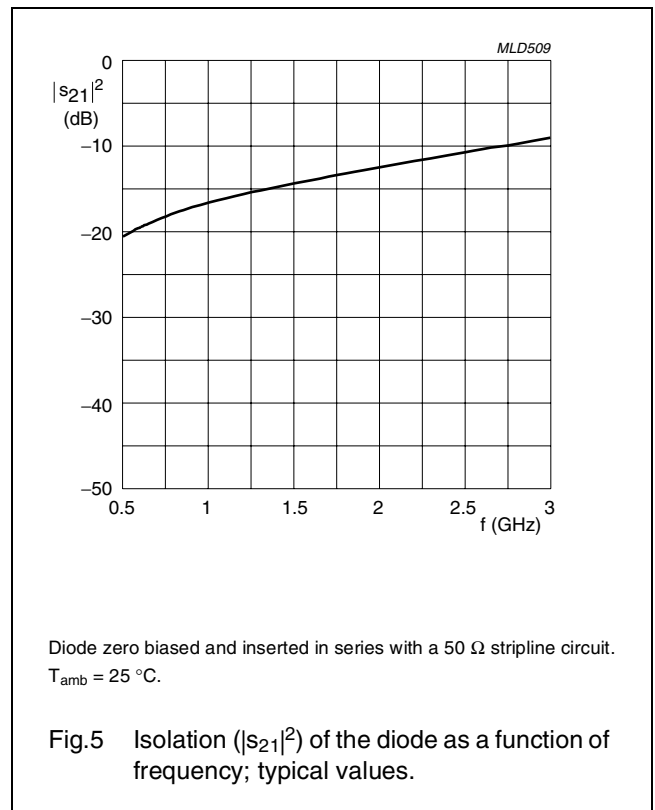
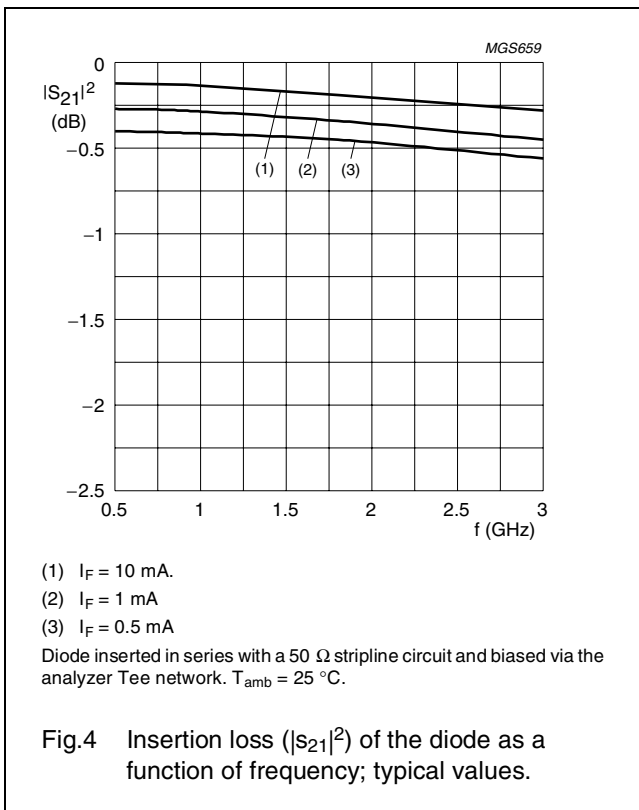
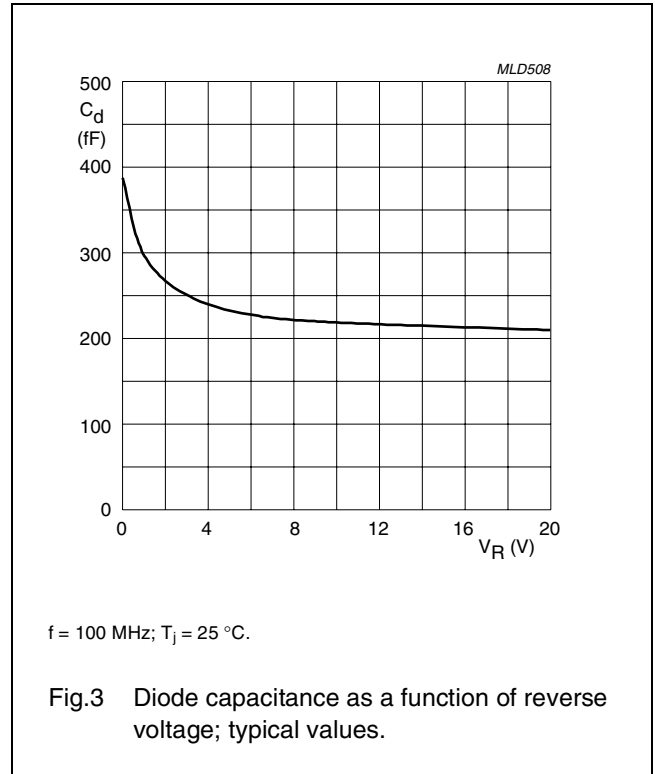
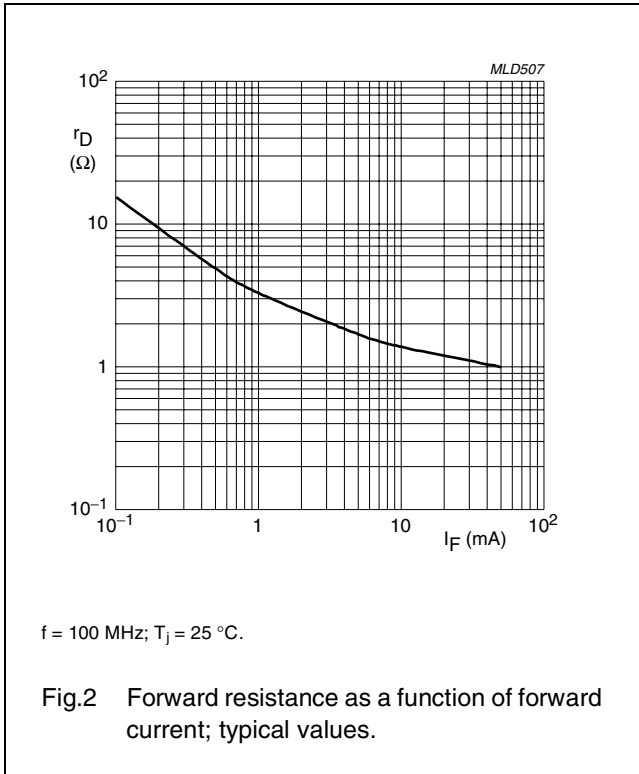
**THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	VALUE	UNIT
$R_{th\ j-s}$	thermal resistance from junction to soldering point	250	K/W

General purpose PIN diode

BAP51-04W

GRAPHICAL DATA



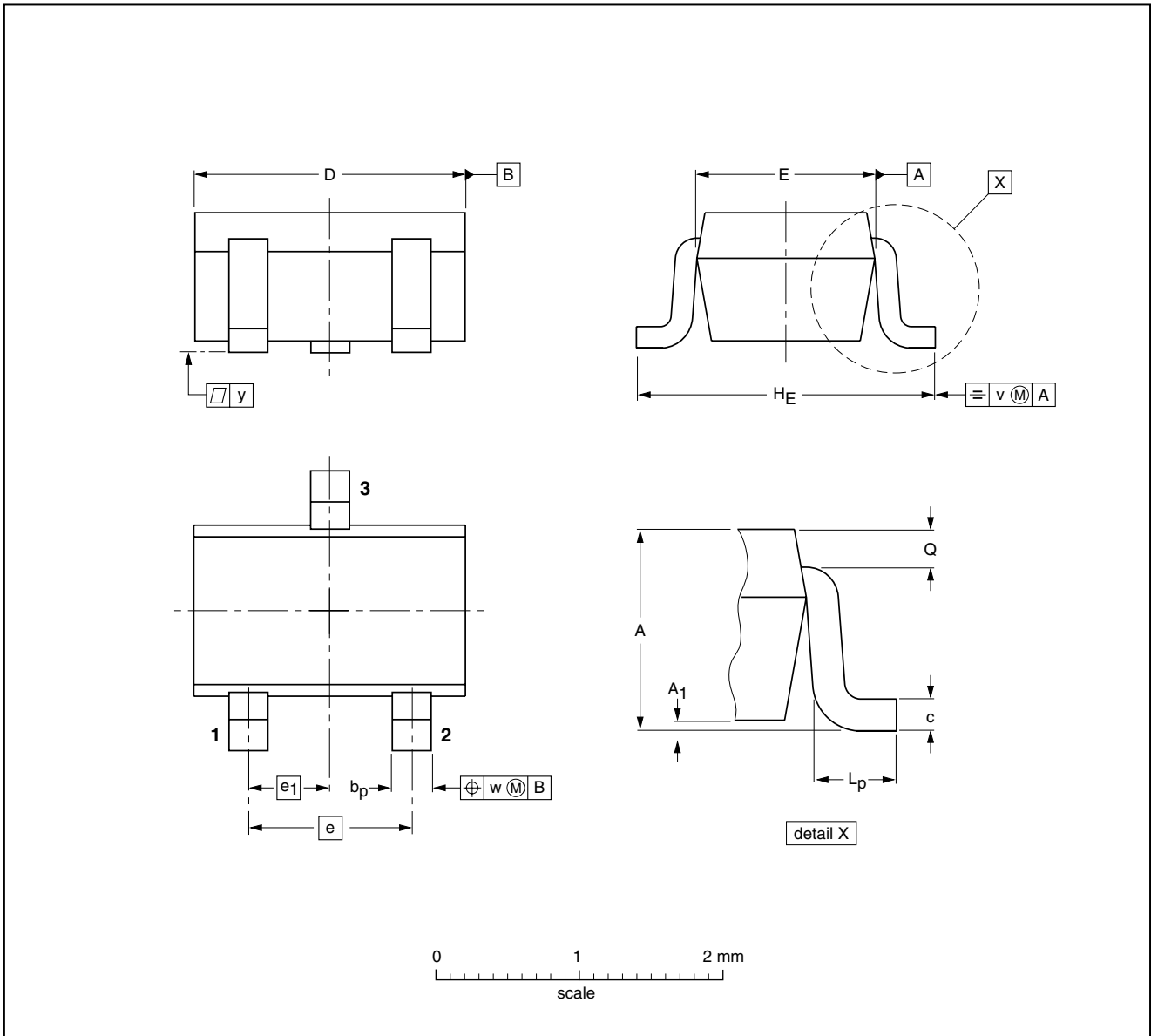
General purpose PIN diode

BAP51-04W

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	EIAJ			
SOT323			SC-70			97-02-28

## General purpose PIN diode

BAP51-04W

## DATA SHEET STATUS

DATA SHEET STATUS <sup>(1)</sup>	PRODUCT STATUS <sup>(2)</sup>	DEFINITIONS
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