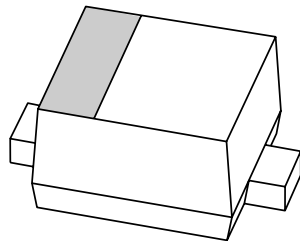


DATA SHEET



BAP50-02

General purpose PIN diode

Product specification

2001 Apr 17

General purpose PIN diode

BAP50-02

FEATURES

- Low diode capacitance
- Low diode forward resistance.

APPLICATIONS

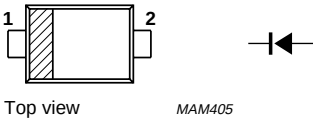
- General RF applications.

DESCRIPTION

General purpose PIN diode in a SOD523 small SMD plastic package.

PINNING

PIN	DESCRIPTION
1	cathode
2	anode



Top view

MAM405

Marking code: K4.

Fig.1 Simplified outline (SOD523) and symbol.

LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V_R	continuous reverse voltage		–	50	V
I_F	continuous forward current		–	50	mA
P_{tot}	total power dissipation	$T_s = 90\text{ }^{\circ}\text{C}$	–	715	mW
T_{stg}	storage temperature		–65	+150	$^{\circ}\text{C}$
T_j	junction temperature		–65	+150	$^{\circ}\text{C}$

General purpose PIN diode

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ELECTRICAL CHARACTERISTICS

$T_j = 25\text{ }^{\circ}\text{C}$ unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
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
		$V_R = 5\text{ V}$; $f = 1\text{ MHz}$	–	0.22	0.35	pF
r_D	diode forward resistance	$I_F = 0.5\text{ mA}$; $f = 100\text{ MHz}$; note 1	–	25	40	Ω
		$I_F = 1\text{ mA}$; $f = 100\text{ MHz}$; note 1	–	14	25	Ω
		$I_F = 10\text{ mA}$; $f = 100\text{ MHz}$; note 1	–	3	5	Ω
$ S_{21} ^2$	isolation	$V_R = 0$; $f = 900\text{ MHz}$	–	20.4	–	dB
		$V_R = 0$; $f = 1800\text{ MHz}$	–	17.3	–	dB
		$V_R = 0$; $f = 2450\text{ MHz}$	–	15.5	–	dB
$ S_{21} ^2$	insertion loss	$I_F = 0.5\text{ mA}$; $f = 900\text{ MHz}$	–	1.74	–	dB
		$I_F = 0.5\text{ mA}$; $f = 1800\text{ MHz}$	–	1.79	–	dB
		$I_F = 0.5\text{ mA}$; $f = 2450\text{ MHz}$	–	1.88	–	dB
$ S_{21} ^2$	insertion loss	$I_F = 1\text{ mA}$; $f = 900\text{ MHz}$	–	1.03	–	dB
		$I_F = 1\text{ mA}$; $f = 1800\text{ MHz}$	–	1.09	–	dB
		$I_F = 1\text{ mA}$; $f = 2450\text{ MHz}$	–	1.15	–	dB
$ S_{21} ^2$	insertion loss	$I_F = 10\text{ mA}$; $f = 900\text{ MHz}$	–	0.26	–	dB
		$I_F = 10\text{ mA}$; $f = 1800\text{ MHz}$	–	0.32	–	dB
		$I_F = 10\text{ mA}$; $f = 2450\text{ MHz}$	–	0.34	–	dB
τ_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	–	μs
L_S	series inductance	$I_F = 100\text{ mA}$; $f = 100\text{ MHz}$	–	0.6	–	nH

Note

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

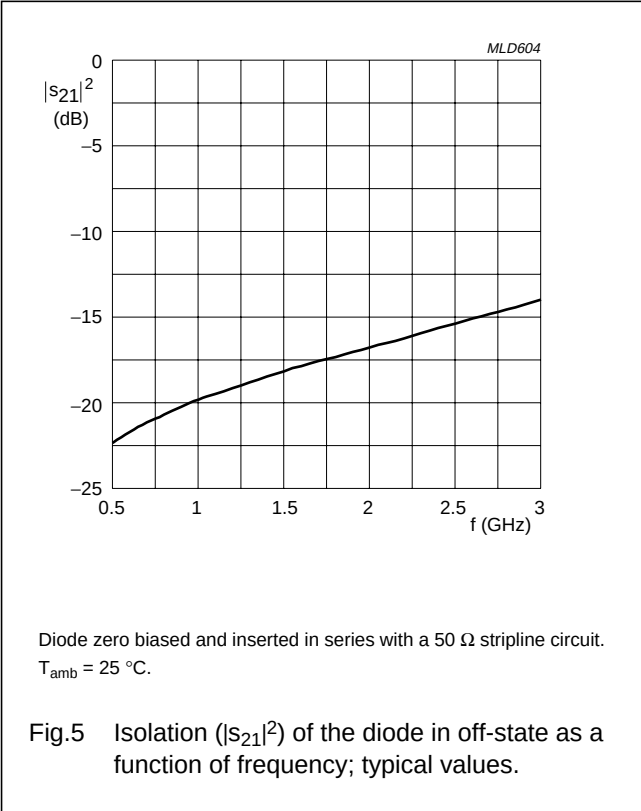
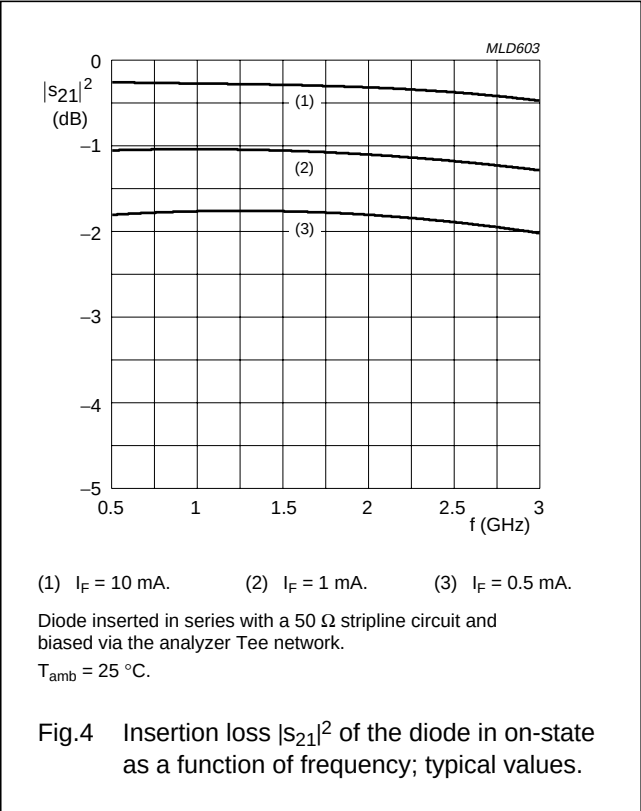
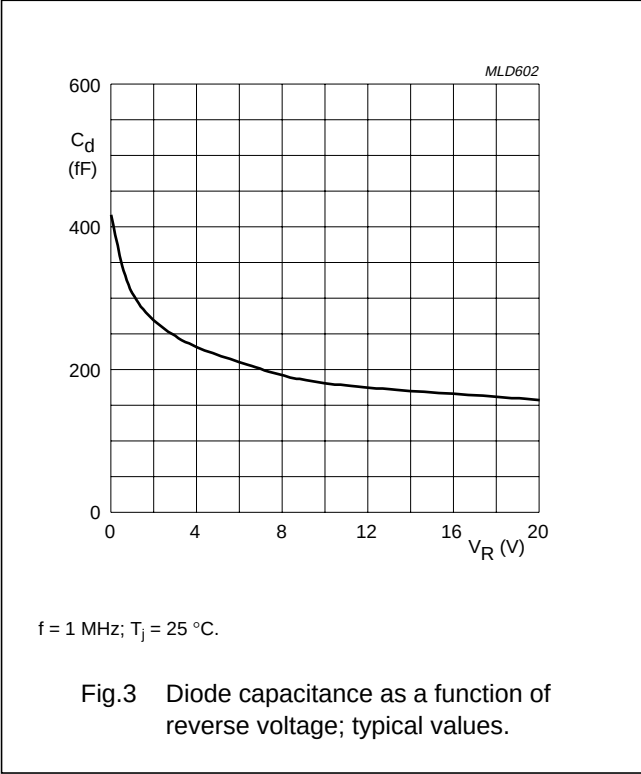
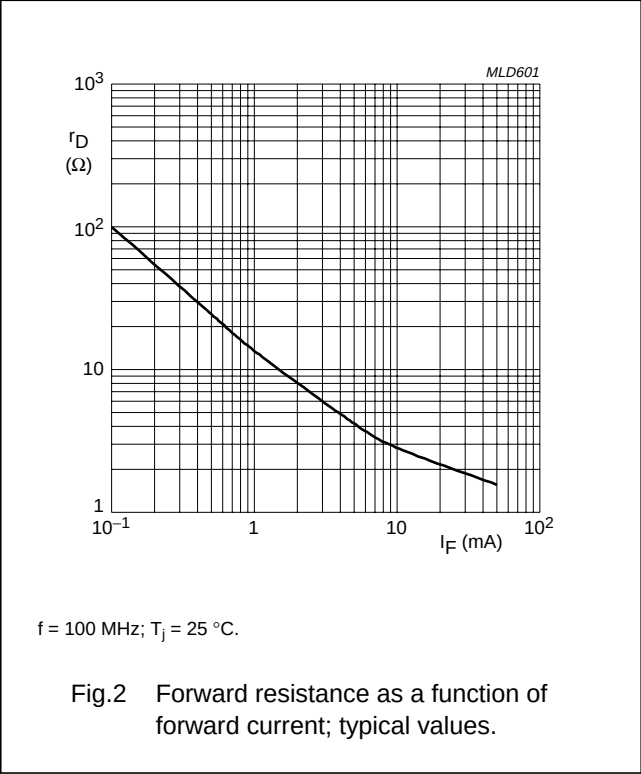
THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	VALUE	UNIT
$R_{th\ j-s}$	thermal resistance from junction to soldering point	85	K/W

General purpose PIN diode

BAP50-02

GRAPHICAL DATA



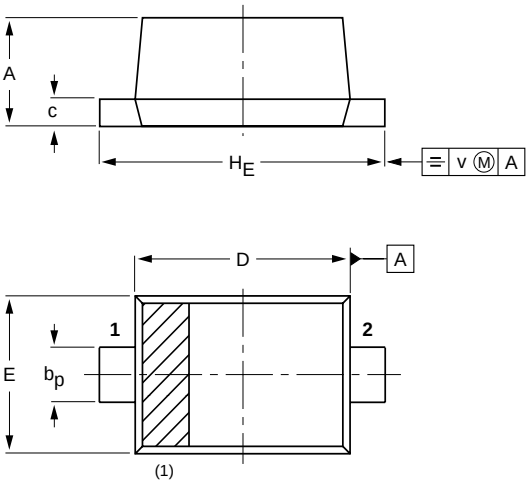
General purpose PIN diode

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PACKAGE OUTLINE

Plastic surface mounted package; 2 leads

SOD523



DIMENSIONS (mm are the original dimensions)

UNIT	A	b _p	c	D	E	H _E	v
mm	0.7 0.5	0.35 0.25	0.2 0.1	1.3 1.1	0.9 0.7	1.7 1.5	0.15

Note

1. The marking bar indicates the cathode.

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ			
SOD523			SC-79			98-11-25

General purpose PIN diode

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DATA SHEET STATUS

DATA SHEET STATUS ⁽¹⁾	PRODUCT STATUS ⁽²⁾	DEFINITIONS
Objective data	Development	This data sheet contains data from the objective specification for product development. Philips Semiconductors reserves the right to change the specification in any manner without notice.
Preliminary data	Qualification	This data sheet contains data from the preliminary specification. Supplementary data will be published at a later date. Philips Semiconductors reserves the right to change the specification without notice, in order to improve the design and supply the best possible product.
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General purpose PIN diode

BAP50-02

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