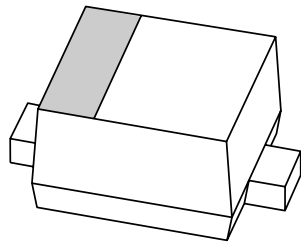


# DATA SHEET



**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

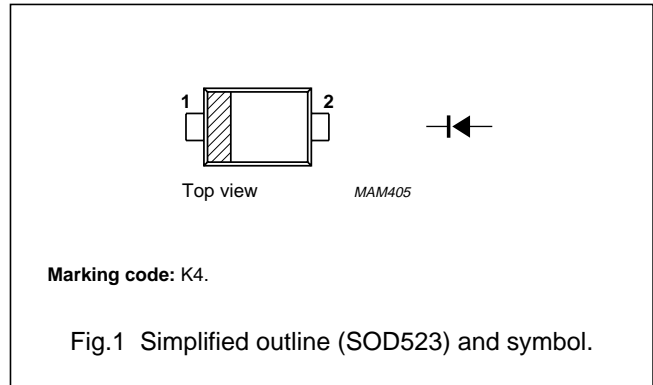
- General RF applications.

### DESCRIPTION

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

### PINNING

PIN	DESCRIPTION
1	cathode
2	anode



### 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	$T_s = 90\text{ °C}$	–	715	mW
$T_{stg}$	storage temperature		–65	+150	°C
$T_j$	junction temperature		–65	+150	°C

## General purpose PIN diode

## BAP50-02

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
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	–	0.4	–	pF
		V <sub>R</sub> = 1 V; f = 1 MHz	–	0.3	0.55	pF
		V <sub>R</sub> = 5 V; f = 1 MHz	–	0.22	0.35	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	–	20.4	–	dB
		V <sub>R</sub> = 0; f = 1800 MHz	–	17.3	–	dB
		V <sub>R</sub> = 0; f = 2450 MHz	–	15.5	–	dB
S <sub>21</sub>   <sup>2</sup>	insertion loss	I <sub>F</sub> = 0.5 mA; f = 900 MHz	–	1.74	–	dB
		I <sub>F</sub> = 0.5 mA; f = 1800 MHz	–	1.79	–	dB
		I <sub>F</sub> = 0.5 mA; f = 2450 MHz	–	1.88	–	dB
S <sub>21</sub>   <sup>2</sup>	insertion loss	I <sub>F</sub> = 1 mA; f = 900 MHz	–	1.03	–	dB
		I <sub>F</sub> = 1 mA; f = 1800 MHz	–	1.09	–	dB
		I <sub>F</sub> = 1 mA; f = 2450 MHz	–	1.15	–	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	–	0.32	–	dB
		I <sub>F</sub> = 10 mA; f = 2450 MHz	–	0.34	–	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	–	0.6	–	nH

**Note**

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

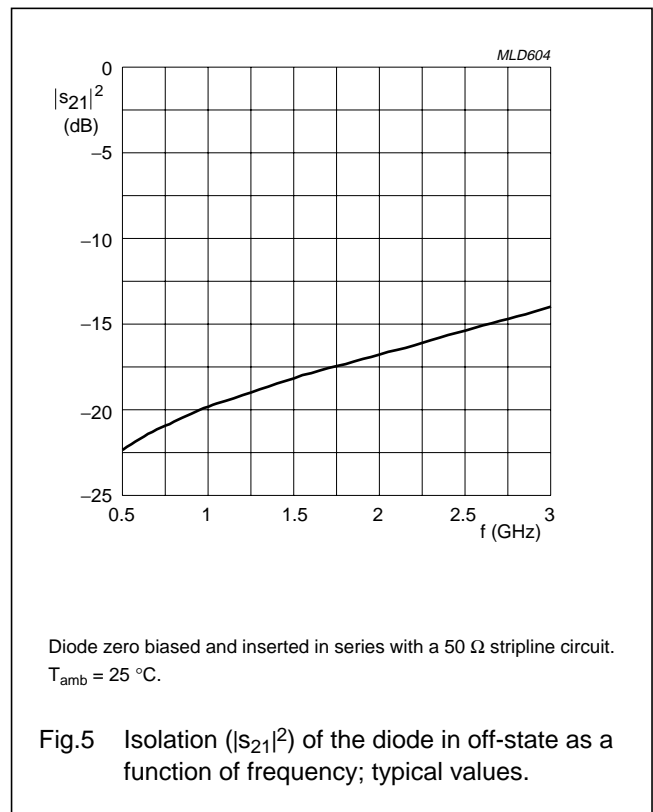
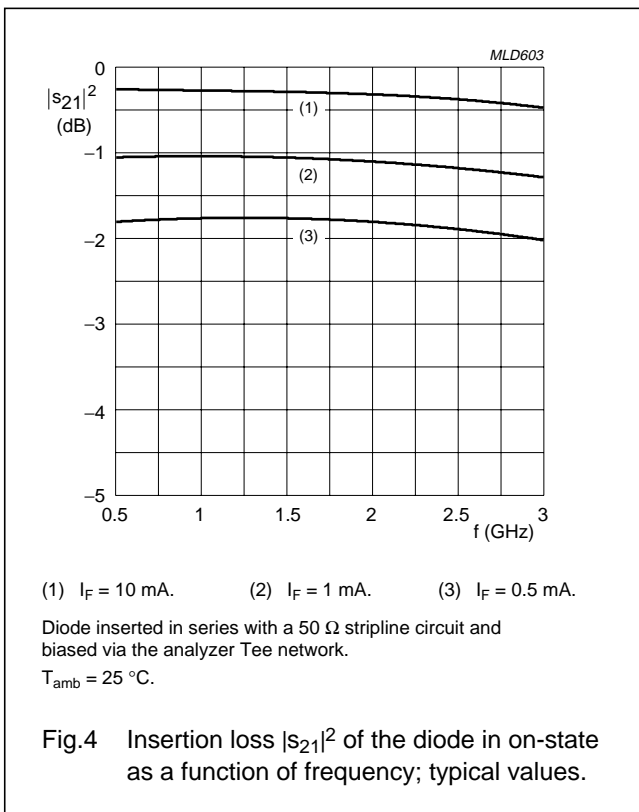
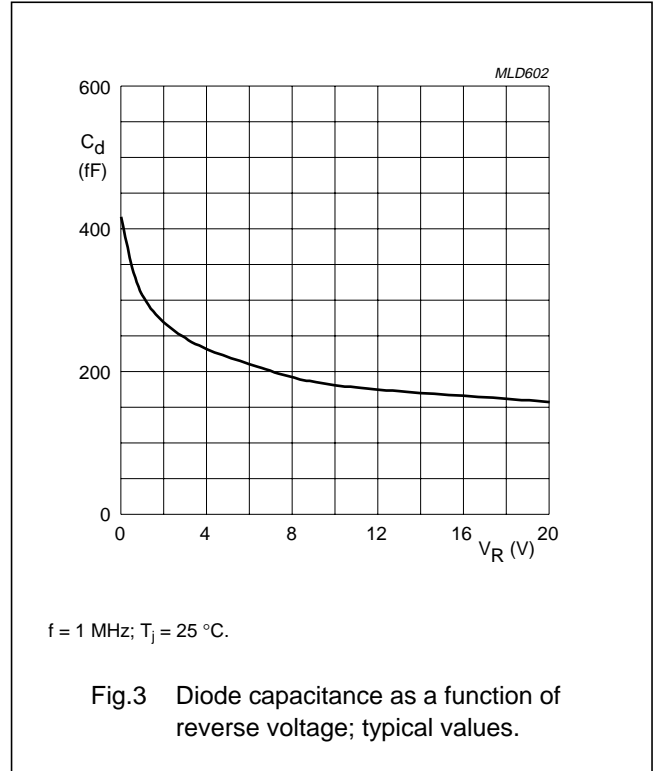
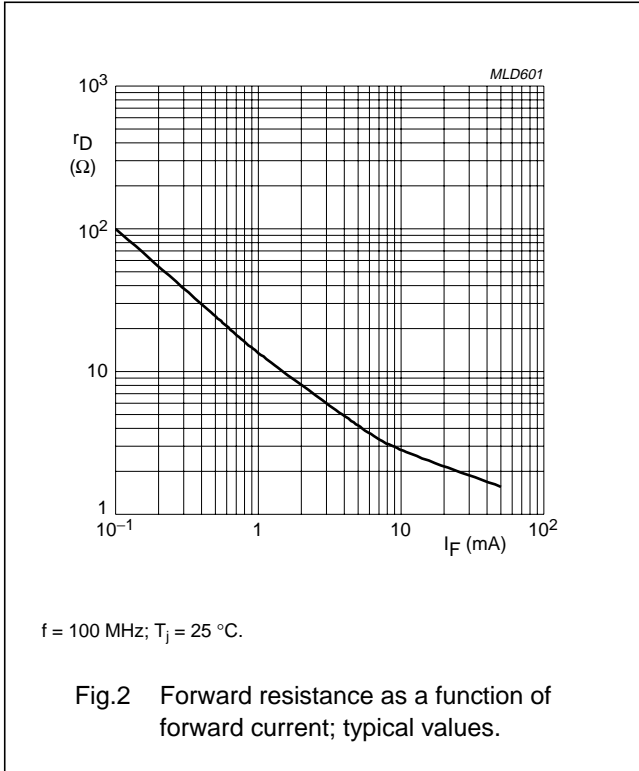
**THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	VALUE	UNIT
R <sub>th j-s</sub>	thermal resistance from junction to soldering point	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	bp	c	D	E	HE	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

BAP50-02

## DATA SHEET STATUS

DATA SHEET STATUS <sup>(1)</sup>	PRODUCT STATUS <sup>(2)</sup>	DEFINITIONS
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General purpose PIN diode

BAP50-02

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# Philips Semiconductors – a worldwide company

**Argentina:** see South America

**Australia:** 3 Figtree Drive, HOMEBUSH, NSW 2140,  
Tel. +61 2 9704 8141, Fax. +61 2 9704 8139

**Austria:** Computerstr. 6, A-1101 WIEN, P.O. Box 213,  
Tel. +43 1 60 101 1248, Fax. +43 1 60 101 1210

**Belarus:** Hotel Minsk Business Center, Bld. 3, r. 1211, Volodarski Str. 6,  
220050 MINSK, Tel. +375 172 20 0733, Fax. +375 172 20 0773

**Belgium:** see The Netherlands

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**Bulgaria:** Philips Bulgaria Ltd., Energoproject, 15th floor,  
51 James Bourchier Blvd., 1407 SOFIA,  
Tel. +359 2 68 9211, Fax. +359 2 68 9102

**Canada:** PHILIPS SEMICONDUCTORS/COMPONENTS,  
Tel. +1 800 234 7381, Fax. +1 800 943 0087

**China/Hong Kong:** 501 Hong Kong Industrial Technology Centre,  
72 Tat Chee Avenue, Kowloon Tong, HONG KONG,  
Tel. +852 2319 7888, Fax. +852 2319 7700

**Colombia:** see South America

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**Denmark:** Sydhavnsgade 23, 1780 COPENHAGEN V,  
Tel. +45 33 29 3333, Fax. +45 33 29 3905

**Finland:** Sinikalliontie 3, FIN-02630 ESPOO,  
Tel. +358 9 615 800, Fax. +358 9 6158 0920

**France:** 7 - 9 Rue du Mont Valérien, BP317, 92156 SURESNES Cedex,  
Tel. +33 1 4728 6600, Fax. +33 1 4728 6638

**Germany:** Hammerbrookstraße 69, D-20097 HAMBURG,  
Tel. +49 40 2353 60, Fax. +49 40 2353 6300

**Hungary:** Philips Hungary Ltd., H-1119 Budapest, Fehervari ut 84/A,  
Tel: +36 1 382 1700, Fax: +36 1 382 1800

**India:** Philips INDIA Ltd, Band Box Building, 2nd floor,  
254-D, Dr. Annie Besant Road, Worli, MUMBAI 400 025,  
Tel. +91 22 493 8541, Fax. +91 22 493 0966

**Indonesia:** PT Philips Development Corporation, Semiconductors Division,  
Gedung Philips, Jl. Buncit Raya Kav.99-100, JAKARTA 12510,  
Tel. +62 21 794 0040 ext. 2501, Fax. +62 21 794 0080

**Ireland:** Newstead, Clonskeagh, DUBLIN 14,  
Tel. +353 1 7640 000, Fax. +353 1 7640 200

**Israel:** RAPAC Electronics, 7 Kehilat Saloniki St, PO Box 18053,  
TEL AVIV 61180, Tel. +972 3 645 0444, Fax. +972 3 649 1007

**Italy:** PHILIPS SEMICONDUCTORS, Via Casati, 23 - 20052 MONZA (MI),  
Tel. +39 039 203 6838, Fax +39 039 203 6800

**Japan:** Philips Bldg 13-37, Kohnan 2-chome, Minato-ku,  
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**Korea:** Philips House, 260-199 Itaewon-dong, Yongsan-ku, SEOUL,  
Tel. +82 2 709 1412, Fax. +82 2 709 1415

**Malaysia:** No. 76 Jalan Universiti, 46200 PETALING JAYA, SELANGOR,  
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**Mexico:** 5900 Gateway East, Suite 200, EL PASO, TEXAS 79905,  
Tel. +9-5 800 234 7381, Fax +9-5 800 943 0087

**Middle East:** see Italy

**Netherlands:** Postbus 90050, 5600 PB EINDHOVEN, Bldg. VB,  
Tel. +31 40 27 82785, Fax. +31 40 27 88399

**New Zealand:** 2 Wagener Place, C.P.O. Box 1041, AUCKLAND,  
Tel. +64 9 849 4160, Fax. +64 9 849 7811

**Norway:** Box 1, Manglerud 0612, OSLO,  
Tel. +47 22 74 8000, Fax. +47 22 74 8341

**Pakistan:** see Singapore

**Philippines:** Philips Semiconductors Philippines Inc.,  
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Metro MANILA, Tel. +63 2 816 6380, Fax. +63 2 817 3474

**Poland:** Al.Jerozolimskie 195 B, 02-222 WARSAW,  
Tel. +48 22 5710 000, Fax. +48 22 5710 001

**Portugal:** see Spain

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**Singapore:** Lorong 1, Toa Payoh, SINGAPORE 319762,  
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Tel. +27 11 471 5401, Fax. +27 11 471 5398

**South America:** Al. Vicente Pinzon, 173, 6th floor,  
04547-130 SÃO PAULO, SP, Brazil,  
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**Sweden:** Kottbygatan 7, Akalla, S-16485 STOCKHOLM,  
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**Switzerland:** Allmendstrasse 140, CH-8027 ZÜRICH,  
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**Taiwan:** Philips Semiconductors, 5F, No. 96, Chien Kuo N. Rd., Sec. 1,  
TAIPEI, Taiwan Tel. +886 2 2134 2451, Fax. +886 2 2134 2874

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**Turkey:** Yukari Dudullu, Org. San. Blg., 2.Cad. Nr. 28 81260 Umraniye,  
ISTANBUL, Tel. +90 216 522 1500, Fax. +90 216 522 1813

**Ukraine:** PHILIPS UKRAINE, 4 Patrice Lumumba str., Building B, Floor 7,  
252042 KIEV, Tel. +380 44 264 2776, Fax. +380 44 268 0461

**United Kingdom:** Philips Semiconductors Ltd., 276 Bath Road, Hayes,  
MIDDLESEX UB3 5BX, Tel. +44 208 730 5000, Fax. +44 208 754 8421

**United States:** 811 East Arques Avenue, SUNNYVALE, CA 94088-3409,  
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Tel. +381 11 3341 299, Fax.+381 11 3342 553

**For all other countries apply to:** Philips Semiconductors,  
Marketing Communications, Building BE-p, P.O. Box 218, 5600 MD EINDHOVEN,  
The Netherlands, Fax. +31 40 27 24825

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