

BAP50-02

General purpose PIN diode

Rev. 02 — 3 January 2008

Product data sheet

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NXP Semiconductors

General purpose PIN diode

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FEATURES

- Low diode capacitance
- Low diode forward resistance.

APPLICATIONS

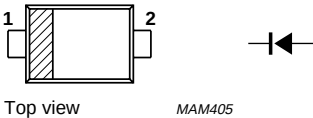
- General RF applications.

DESCRIPTION

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

PINNING

PIN	DESCRIPTION
1	cathode
2	anode



The figure shows the top view of the SOD523 package and its circuit symbol. The top view is a rectangle with pins 1 and 2 on opposite sides. The symbol is a diode symbol with the cathode arrow pointing towards the anode. The text 'MAM405' is located below the symbol.

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 °C	–	715	mW
T _{stg}	storage temperature		–65	+150	°C
T _j	junction temperature		–65	+150	°C

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ELECTRICAL CHARACTERISTICST_j = 25 °C unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
V _F	forward voltage	I _F = 50 mA	–	0.95	1.1	V
V _R	reverse voltage	I _R = 10 µA	50	–	–	V
I _R	reverse current	V _R = 50 V	–	–	100	nA
C _d	diode capacitance	V _R = 0; f = 1 MHz	–	0.4	–	pF
		V _R = 1 V; f = 1 MHz	–	0.3	0.55	pF
		V _R = 5 V; f = 1 MHz	–	0.22	0.35	pF
r _D	diode forward resistance	I _F = 0.5 mA; f = 100 MHz; note 1	–	25	40	Ω
		I _F = 1 mA; f = 100 MHz; note 1	–	14	25	Ω
		I _F = 10 mA; f = 100 MHz; note 1	–	3	5	Ω
S ₂₁ ²	isolation	V _R = 0; f = 900 MHz	–	20.4	–	dB
		V _R = 0; f = 1800 MHz	–	17.3	–	dB
		V _R = 0; f = 2450 MHz	–	15.5	–	dB
S ₂₁ ²	insertion loss	I _F = 0.5 mA; f = 900 MHz	–	1.74	–	dB
		I _F = 0.5 mA; f = 1800 MHz	–	1.79	–	dB
		I _F = 0.5 mA; f = 2450 MHz	–	1.88	–	dB
S ₂₁ ²	insertion loss	I _F = 1 mA; f = 900 MHz	–	1.03	–	dB
		I _F = 1 mA; f = 1800 MHz	–	1.09	–	dB
		I _F = 1 mA; f = 2450 MHz	–	1.15	–	dB
S ₂₁ ²	insertion loss	I _F = 10 mA; f = 900 MHz	–	0.26	–	dB
		I _F = 10 mA; f = 1800 MHz	–	0.32	–	dB
		I _F = 10 mA; f = 2450 MHz	–	0.34	–	dB
τ _L	charge carrier life time	when switched from I _F = 10 mA to I _R = 6 mA; R _L = 100 Ω; measured at I _R = 3 mA	–	1.05	–	µs
L _S	series inductance	I _F = 100 mA; f = 100 MHz	–	0.6	–	nH

Note

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

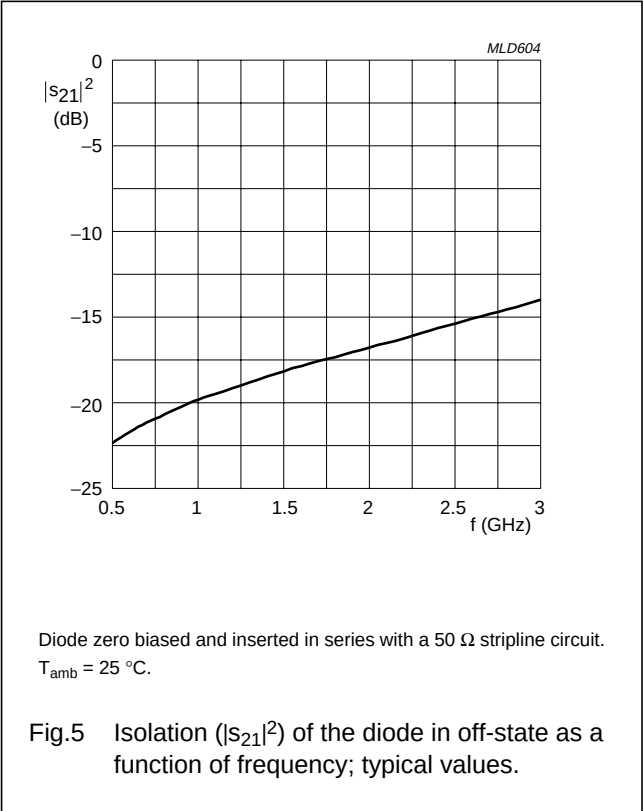
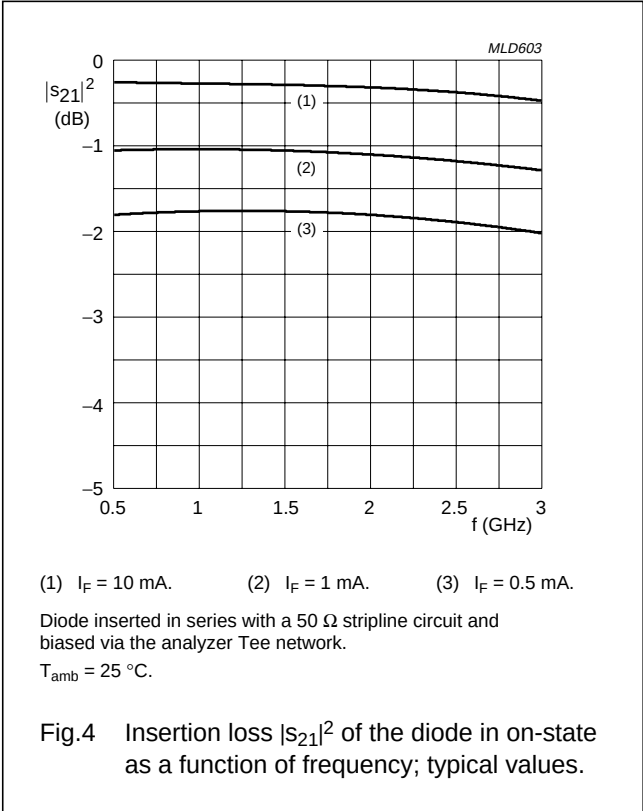
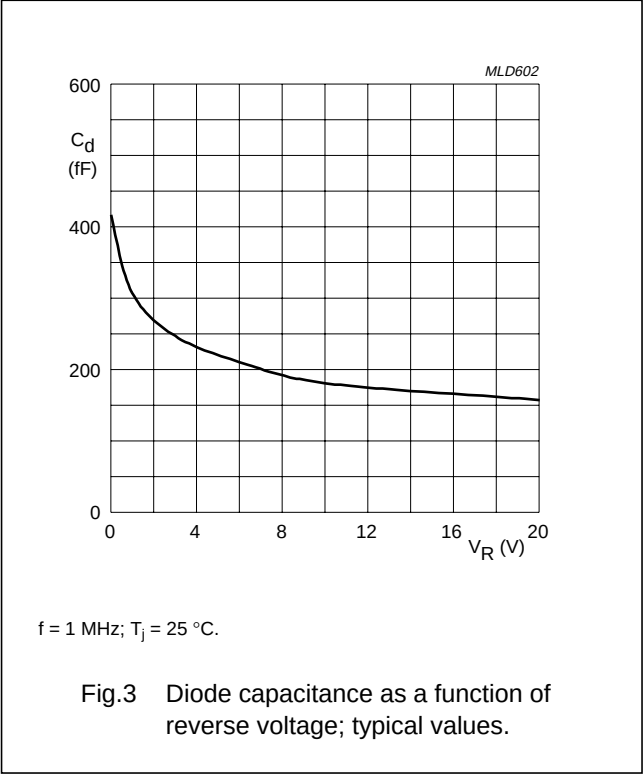
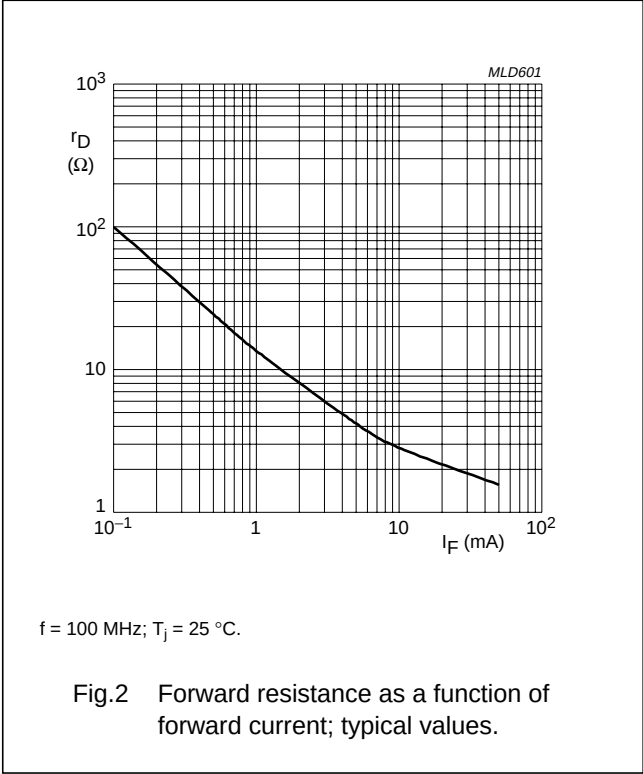
THERMAL CHARACTERISTICS

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

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GRAPHICAL DATA



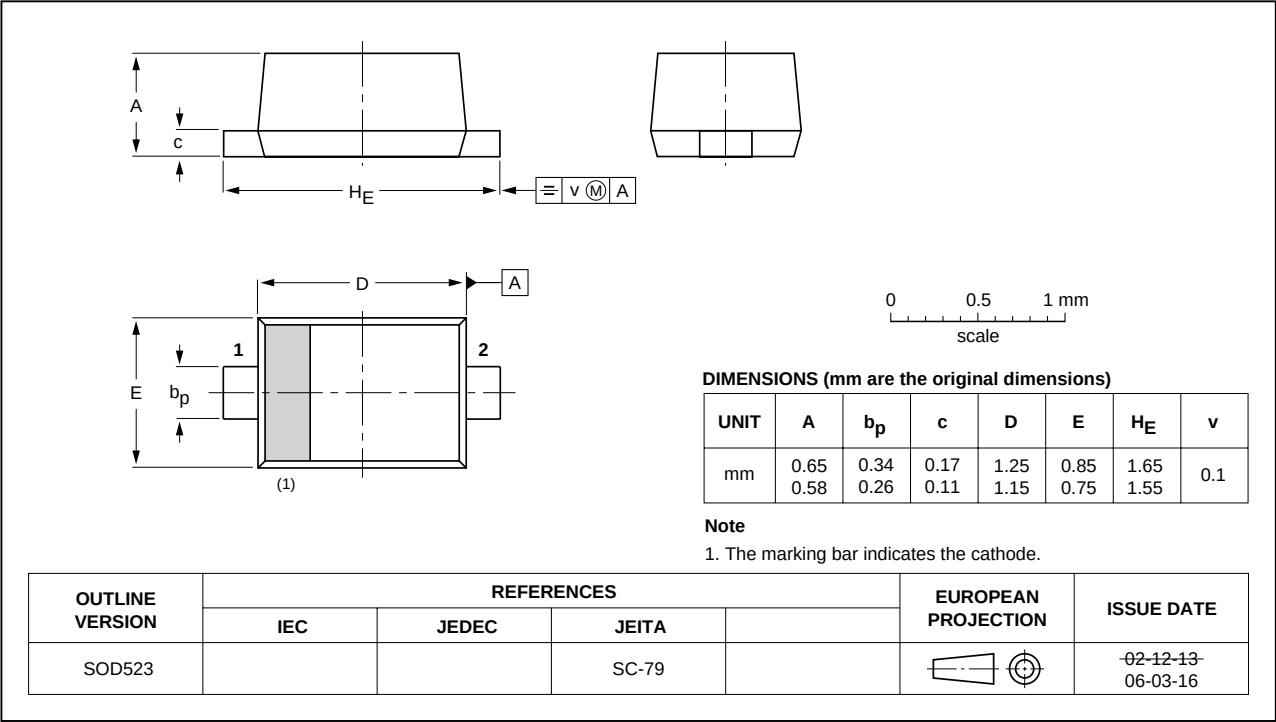
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PACKAGE OUTLINE

Plastic surface-mounted package; 2 leads

SOD523



Legal information

Data sheet status

Document status ^{[1][2]}	Product status ^[3]	Definition
Objective [short] data sheet	Development	This document contains data from the objective specification for product development.
Preliminary [short] data sheet	Qualification	This document contains data from the preliminary specification.
Product [short] data sheet	Production	This document contains the product specification.

[1] Please consult the most recently issued document before initiating or completing a design.

[2] The term 'short data sheet' is explained in section "Definitions".

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Revision history

Revision history

Document ID	Release date	Data sheet status	Change notice	Supersedes
BAP50-02_N_2	20080103	Product data sheet	-	BAP50-02_1
Modifications:				
• Package outline drawing on page 5 changed				
BAP50-02_1 (9397 750 08113)	20010417	Product specification	-	-

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