



BAP64-02

Silicon PIN diode

Rev. 06 — 9 January 2008

Product data sheet

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NXP Semiconductors

Silicon PIN diode

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FEATURES

- High voltage, current controlled
- RF resistor for RF attenuators and switches
- Low diode capacitance
- Low diode forward resistance
- Very low series inductance
- For applications up to 3 GHz.

APPLICATIONS

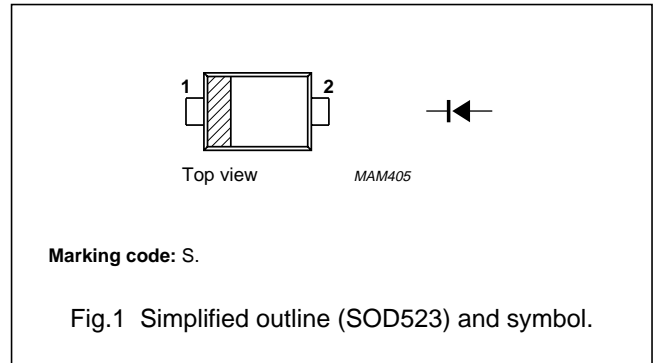
- RF attenuators and switches.

DESCRIPTION

Planar PIN diode in a SOD523 ultra small plastic SMD 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		–	175	V
I_F	continuous forward current		–	100	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

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ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	TYP.	MAX.	UNIT
V_F	forward voltage	$I_F = 50\text{ mA}$	0.95	1.1	V
I_R	reverse leakage current	$V_R = 175\text{ V}$	–	10	μA
		$V_R = 20\text{ V}$	–	1	μA
C_d	diode capacitance	$V_R = 0; f = 1\text{ MHz}$	0.48	–	pF
		$V_R = 1\text{ V}; f = 1\text{ MHz}$	0.35	–	pF
		$V_R = 20\text{ V}; f = 1\text{ MHz}$	0.23	0.35	pF
r_D	diode forward resistance	$f = 100\text{ MHz}$; note 1			
		$I_F = 0.5\text{ mA}$	20	40	Ω
		$I_F = 1\text{ mA}$	10	20	Ω
		$I_F = 10\text{ mA}$	2	3.8	Ω
	$I_F = 100\text{ mA}$	0.7	1.35	Ω	
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 $I_R = 3\text{ mA}$	1.55	–	μs
L_S	series inductance		0.6	–	nH

Note

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

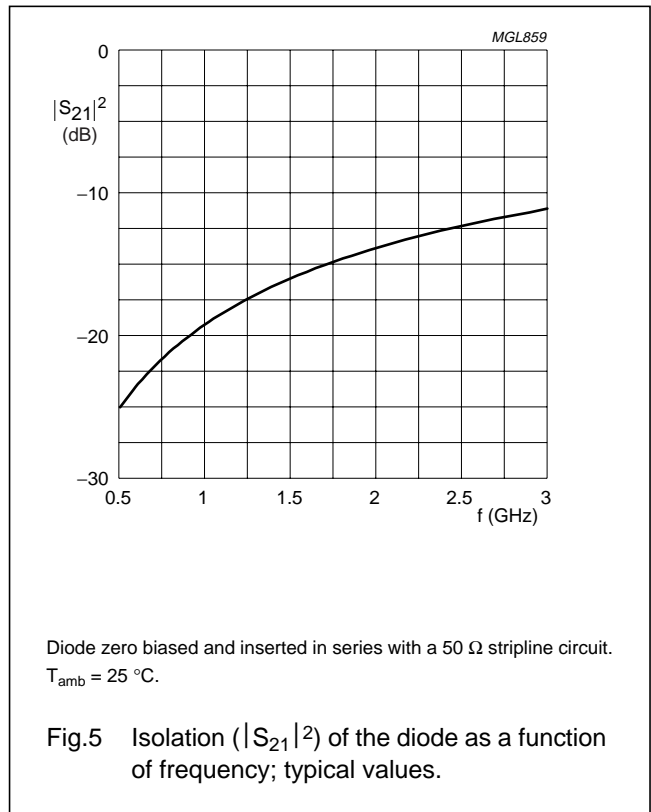
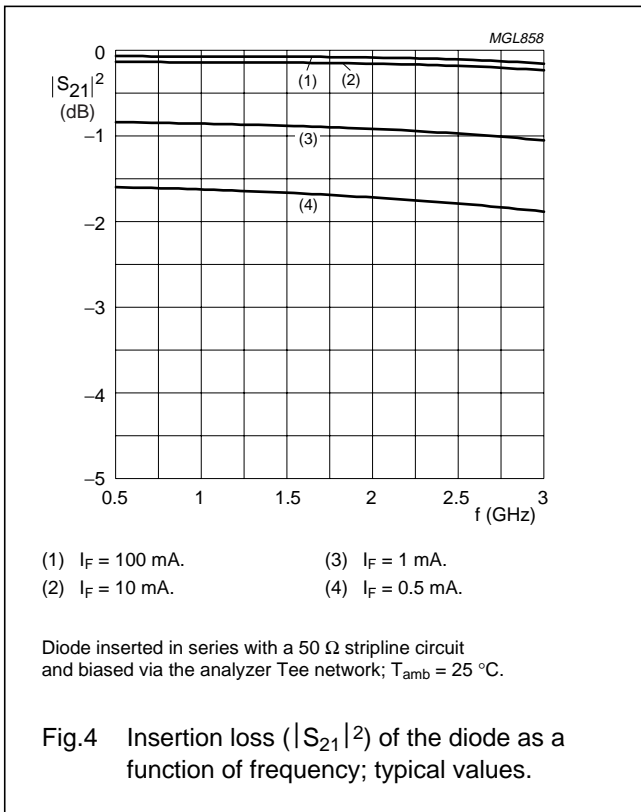
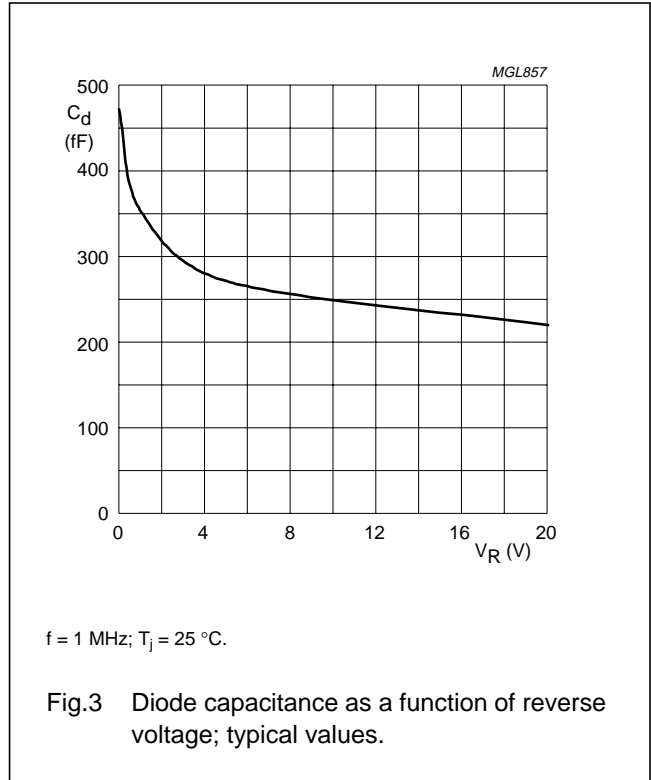
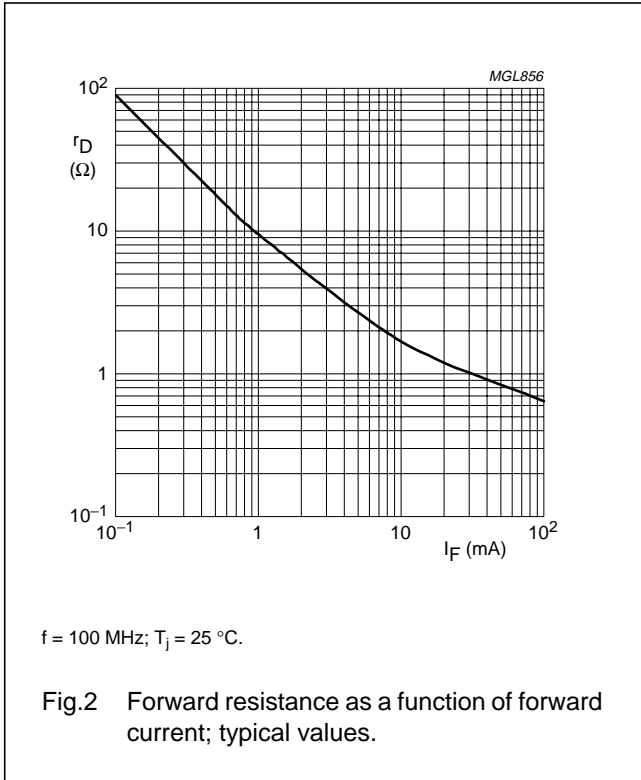
THERMAL CHARACTERISTICS

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

DIMENSIONS (mm are the original dimensions)

UNIT	A	bp	c	D	E	HE	v
mm	0.65 0.58	0.34 0.26	0.17 0.11	1.25 1.15	0.85 0.75	1.65 1.55	0.1

Note
1. The marking bar indicates the cathode.

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	JEITA			
SOD523			SC-79			02-12-13 06-03-16

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".

[3] The product status of device(s) described in this document may have changed since this document was published and may differ in case of multiple devices. The latest product status information is available on the Internet at URL <http://www.nxp.com>.

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Revision history

Revision history

Document ID	Release date	Data sheet status	Change notice	Supersedes
BAP64-02_N_6	20080109	Product data sheet	-	BAP64-02_5
Modifications:	• Package outline drawing on page 5 changed			
BAP64-02_5 (9397 750 06912)	20000323	Product specification	-	BAP64-02_4
BAP64-02_4 (9397 750 06418)	19990921	Preliminary specification	-	BAP64-02_N_3
BAP64-02_N_3 (9397 750 06086)	19990616	Preliminary specification	-	BAP64-02_2
BAP64-02_2 (9397 750 05556)	19990510	Objective specification	-	BAP64-02_N_1
BAP64-02_N_1 (9397 750 05492)	19981204	Objective specification	-	-

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