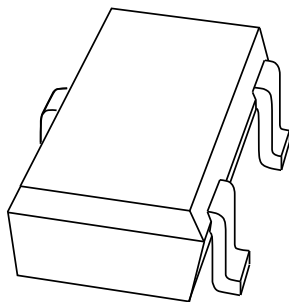


DATA SHEET



BAP64-06W Silicon PIN diode

Product specification
Supersedes data of 2001 Feb 02

2001 Apr 17



Silicon PIN diode

BAP64-06W

FEATURES

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

APPLICATIONS

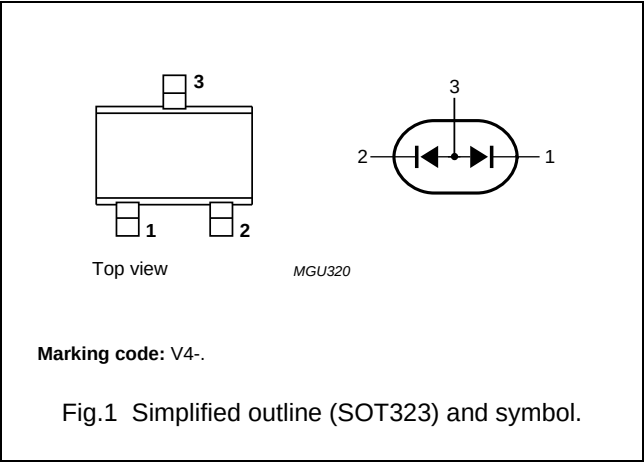
- RF attenuators and switches.

DESCRIPTION

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

PINNING

PIN	DESCRIPTION
1	cathode 1
2	cathode 2
3	common connection



LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
Per diode					
V _R	continuous reverse voltage		–	100	V
I _F	continuous forward current		–	100	mA
P _{tot}	total power dissipation	T _s = 90 °C	–	240	mW
T _{stg}	storage temperature		–65	+150	°C
T _j	junction temperature		–65	+150	°C

Silicon PIN diode

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ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	TYP.	MAX.	UNIT
Per diode					
V_F	forward voltage	$I_F = 50\text{ mA}$	0.95	1.1	V
I_R	reverse current	$V_R = 100\text{ V}$	–	10	μA
		$V_R = 20\text{ V}$	–	1	μA
C_d	diode capacitance	$V_R = 0; f = 1\text{ MHz}$	0.52	–	pF
		$V_R = 1\text{ V}; f = 1\text{ MHz}$	0.37	–	pF
		$V_R = 20\text{ V}; f = 1\text{ MHz}$	0.23	0.35	pF
r_D	diode forward resistance	$I_F = 0.5\text{ mA}; f = 100\text{ MHz}; \text{note 1}$	20	40	Ω
		$I_F = 1\text{ mA}; f = 100\text{ MHz}; \text{note 1}$	10	20	Ω
		$I_F = 10\text{ mA}; f = 100\text{ MHz}; \text{note 1}$	2	3.8	Ω
		$I_F = 100\text{ mA}; f = 100\text{ MHz}; \text{note 1}$	0.7	1.35	Ω
$ S_{21} ^2$	isolation	$V_R = 0; f = 900\text{ MHz}$	18.5	–	dB
		$V_R = 0; f = 1800\text{ MHz}$	13.5	–	dB
		$V_R = 0; f = 2450\text{ MHz}$	10.9	–	dB
$ S_{21} ^2$	insertion loss	$I_F = 0.5\text{ mA}; f = 900\text{ MHz}$	1.86	–	dB
		$I_F = 0.5\text{ mA}; f = 1800\text{ MHz}$	2.06	–	dB
		$I_F = 0.5\text{ mA}; f = 2450\text{ MHz}$	2.23	–	dB
$ S_{21} ^2$	insertion loss	$I_F = 1\text{ mA}; f = 900\text{ MHz}$	1.01	–	dB
		$I_F = 1\text{ mA}; f = 1800\text{ MHz}$	1.06	–	dB
		$I_F = 1\text{ mA}; f = 2450\text{ MHz}$	1.10	–	dB
$ S_{21} ^2$	insertion loss	$I_F = 10\text{ mA}; f = 900\text{ MHz}$	0.19	–	dB
		$I_F = 10\text{ mA}; f = 1800\text{ MHz}$	0.21	–	dB
		$I_F = 10\text{ mA}; f = 2450\text{ MHz}$	0.27	–	dB
$ S_{21} ^2$	insertion loss	$I_F = 100\text{ mA}; f = 900\text{ MHz}$	0.08	–	dB
		$I_F = 100\text{ mA}; f = 1800\text{ MHz}$	0.10	–	dB
		$I_F = 100\text{ mA}; f = 2450\text{ MHz}$	0.16	–	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 $I_R = 3\text{ mA}$	1.55	–	μs
L_S	series inductance	$I_F = 100\text{ mA}; f = 100\text{ MHz}$	1.6	–	nH

Note

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

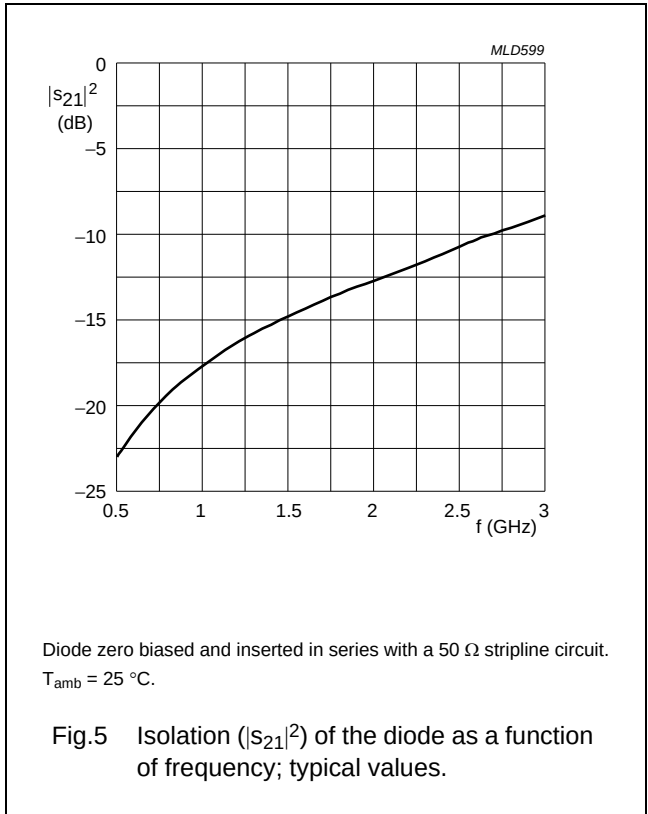
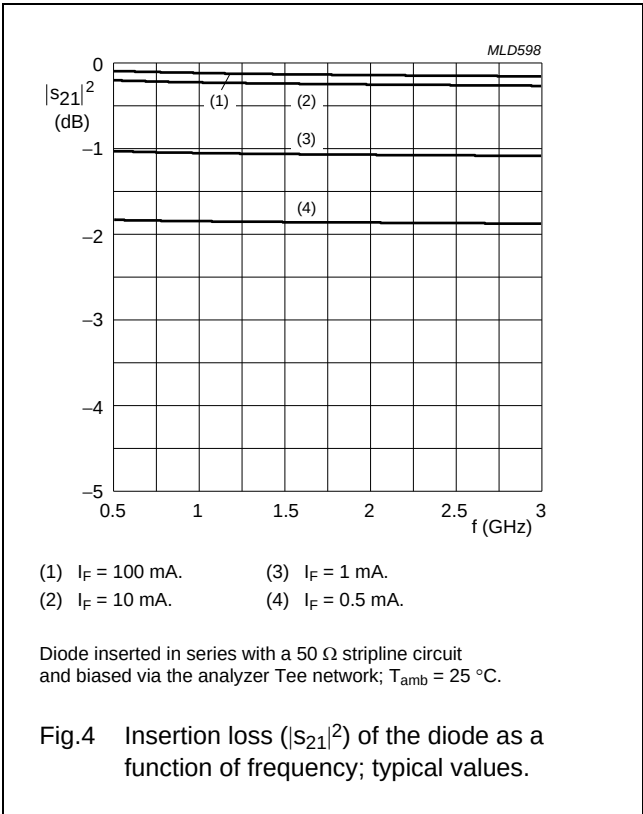
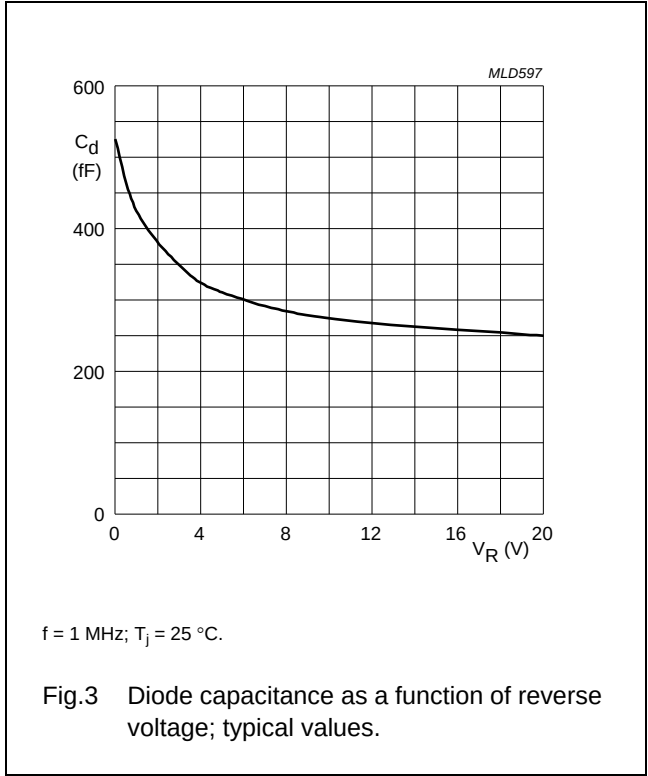
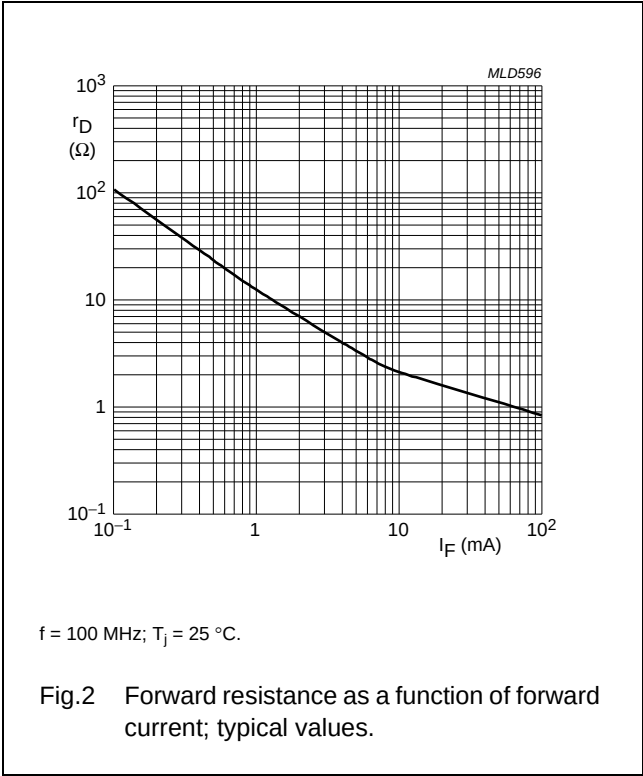
THERMAL CHARACTERISTICS

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

Silicon PIN diode

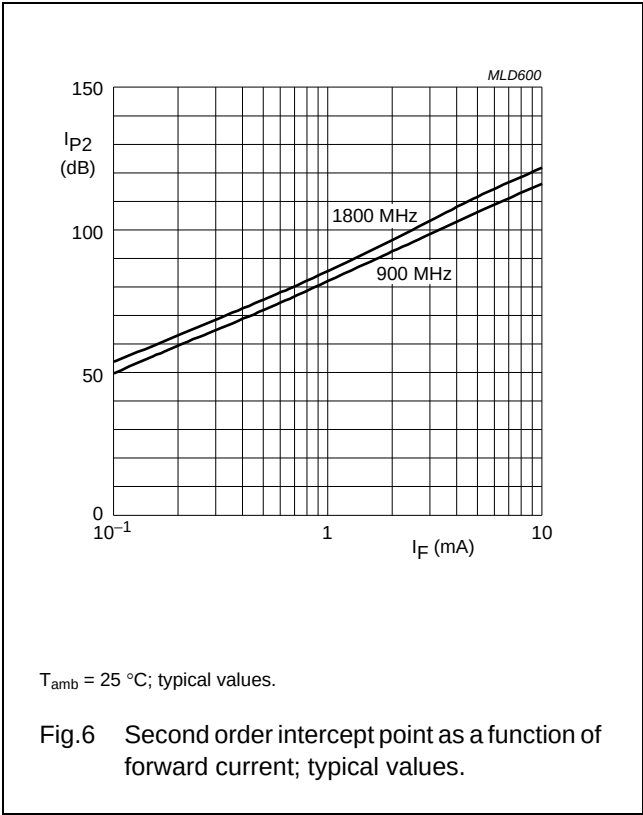
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GRAPHICAL DATA



Silicon PIN diode

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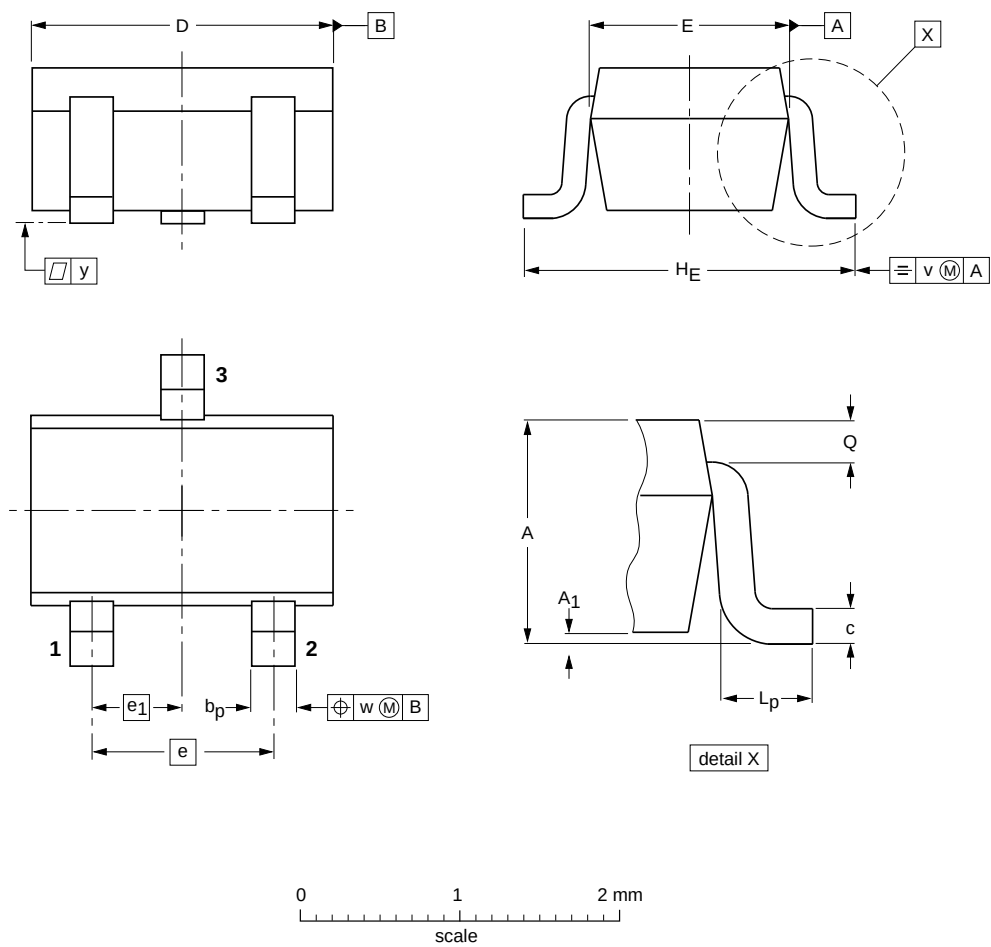
Silicon PIN diode

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PACKAGE OUTLINE

Plastic surface-mounted package; 3 leads

SOT323



DIMENSIONS (mm are the original dimensions)

UNIT	A	A ₁ max	b _p	c	D	E	e	e ₁	H _E	L _p	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	JEITA			
SOT323			SC-70			04-11-04 06-03-16

Silicon PIN diode

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DATA SHEET STATUS

DOCUMENT STATUS ⁽¹⁾	PRODUCT STATUS ⁽²⁾	DEFINITION
Objective data sheet	Development	This document contains data from the objective specification for product development.
Preliminary data sheet	Qualification	This document contains data from the preliminary specification.
Product data sheet	Production	This document contains the product specification.

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This data sheet was changed to reflect the new company name NXP Semiconductors, including new legal definitions and disclaimers. No changes were made to the technical content, except for package outline drawings which were updated to the latest version.

Contact information

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