

# BAP70-02

Silicon PIN diode

Rev. 04 — 22 March 2007

Product data sheet

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NXP Semiconductors

# Silicon PIN diode

# BAP70-02

## FEATURES

- High voltage, current controlled RF resistor for attenuators
- Low diode capacitance
- Very low series inductance.

## APPLICATIONS

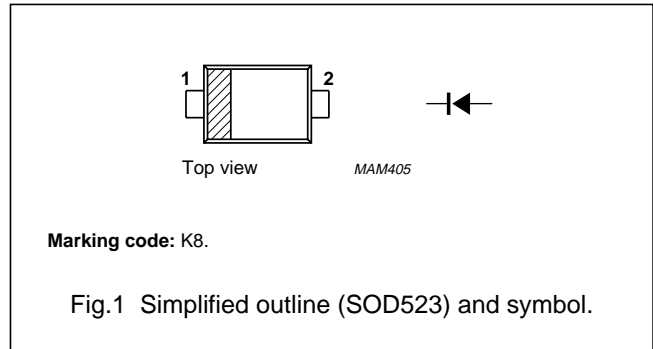
- RF attenuators
- (SAT)TV
- Car radio.

## DESCRIPTION

Planar PIN diode in a SOD523 ultra 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		–	100	mA
$P_{tot}$	total power dissipation	$T_s = 90\text{ }^\circ\text{C}$	–	415	mW
$T_{stg}$	storage temperature		–65	+150	$^\circ\text{C}$
$T_j$	junction temperature		–65	+150	$^\circ\text{C}$

## ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	TYP.	MAX.	UNIT
$V_F$	forward voltage	$I_F = 50\text{ mA}$	0.9	1.1	V
$I_R$	reverse leakage current	$V_R = 50\text{ V}$	–	100	nA
$C_d$	diode capacitance	$V_R = 0\text{ V}; f = 1\text{ MHz}$	570	–	fF
		$V_R = 1\text{ V}; f = 1\text{ MHz}$	400	–	fF
		$V_R = 5\text{ V}; f = 1\text{ MHz}$	270	–	fF
		$V_R = 20\text{ V}; f = 1\text{ MHz}$	200	250	fF
$r_D$	diode forward resistance	$I_F = 0.5\text{ mA}; f = 100\text{ MHz}$	77	100	$\Omega$
		$I_F = 1\text{ mA}; f = 100\text{ MHz}$	40	50	$\Omega$
		$I_F = 10\text{ mA}; f = 100\text{ MHz}$	5.4	7	$\Omega$
		$I_F = 100\text{ mA}; f = 100\text{ MHz}$	1.4	1.9	$\Omega$
$\tau_L$	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 $I_R = 3\text{ mA}$	1.25	–	$\mu\text{s}$
$L_S$	series inductance	$I_F = 100\text{ mA}; f = 100\text{ MHz}$	0.6	–	nH

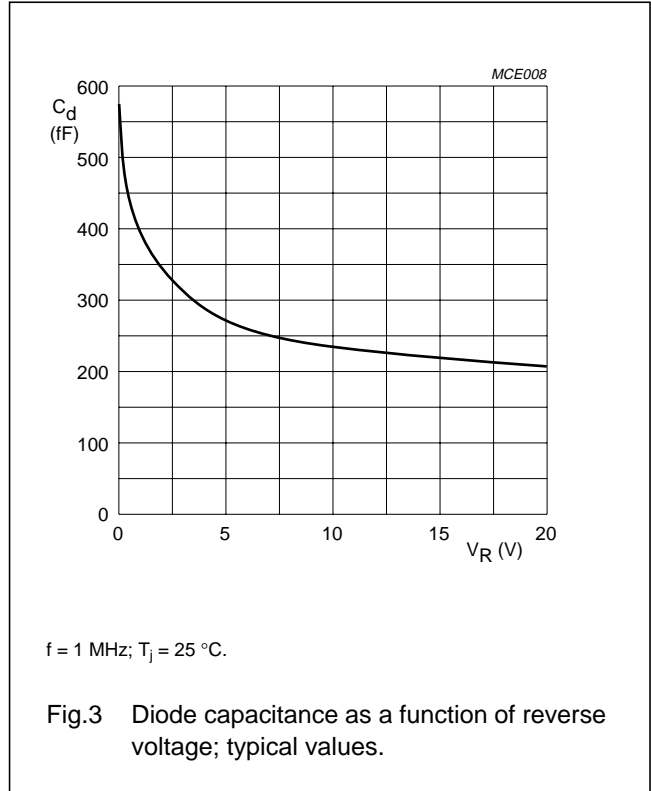
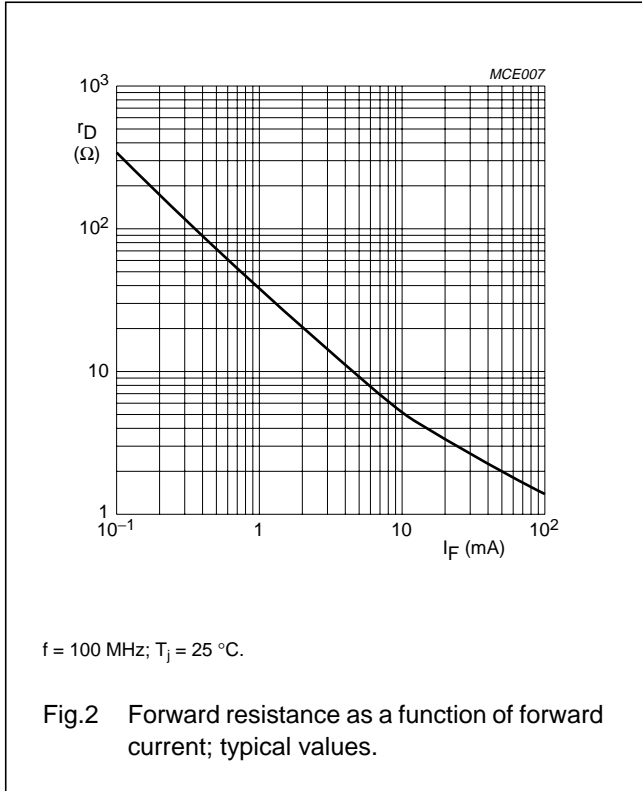
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THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	VALUE	UNIT
$R_{th\ j-s}$	thermal resistance from junction to soldering point	145	K/W

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	0.7 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

## Legal information

### Data sheet status

Document status <sup>[1][2]</sup>	Product status <sup>[3]</sup>	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
BAP70-02_N_4	20070322	Product data sheet	-	BAP70-02_3
Modifications:		<ul style="list-style-type: none"> <li>• correction made to <math>I_R</math> value in Electrical Characteristics table</li> </ul>		
BAP70-02_3 (9397 750 10093)	20020806	Product specification	-	BAP70-02_N_2
BAP70-02_N_2 (9397 750 10079)	20020702	Preliminary specification	-	BAP70-02_N_1
BAP70-02_N_1 (9397 750 09578)	20020402	Preliminary specification	-	-



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