

BAP70-02

Silicon PIN diode

Rev. 05 — 2 January 2008 Product data sheet

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NXP Semiconductors

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Silicon PIN diode BAP70-02

FEATURES

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

APPLICATIONS

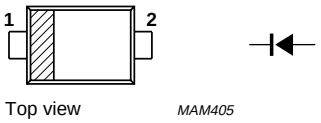
- RF attenuators
- (SAT)TV
- Car radio.

DESCRIPTION

Planar PIN diode in a SOD523 ultra small SMD plastic package.

PINNING

PIN	DESCRIPTION
1	cathode
2	anode



Marking code: K8.

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		–	100	mA
P_{tot}	total power dissipation	T_s = 90 °C	–	415	mW
T_{stg}	storage temperature		–65	+150	°C
T_j	junction temperature		–65	+150	°C

ELECTRICAL CHARACTERISTICS

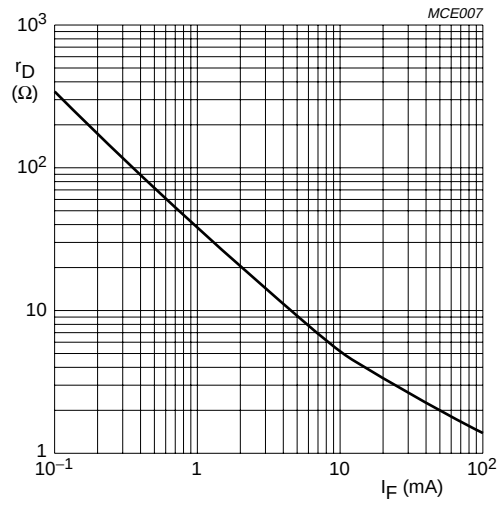
T_j = 25 °C unless otherwise specified.

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

THERMAL CHARACTERISTICS

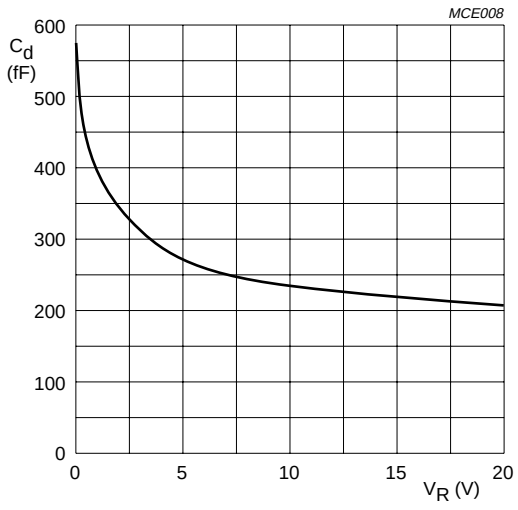
SYMBOL	PARAMETER	VALUE	UNIT
$R_{th\ j\text{-}s}$	thermal resistance from junction to soldering point	145	K/W

GRAPHICAL DATA



f = 100 MHz; T_j = 25 °C.

Fig.2 Forward resistance as a function of forward current; typical values.

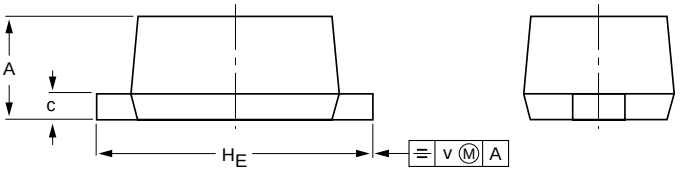


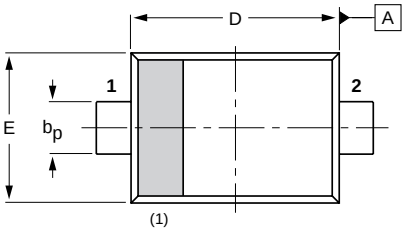
f = 1 MHz; T_j = 25 °C.

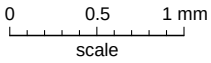
Fig.3 Diode capacitance as a function of reverse voltage; typical values.

PACKAGE OUTLINE

Plastic surface-mounted package; 2 leads **SOD523**







DIMENSIONS (mm are the original dimensions)

UNIT	A	b_p	c	D	E	H_E	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
BAP70-02_N_5	20080102	Product data sheet	-	BAP70-02_N_4
Modifications:	• Package outline drawing on page 4 changed			
BAP70-02_N_4	20070322	Product data sheet	-	BAP70-02_3
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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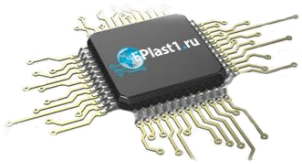
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