

BAP70-02

Silicon PIN diode

Rev. 05 — 2 January 2008 Product data sheet

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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

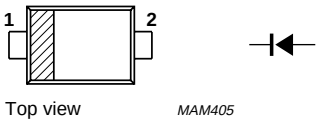
- RF attenuators
- (SAT)TV
- Car radio.

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

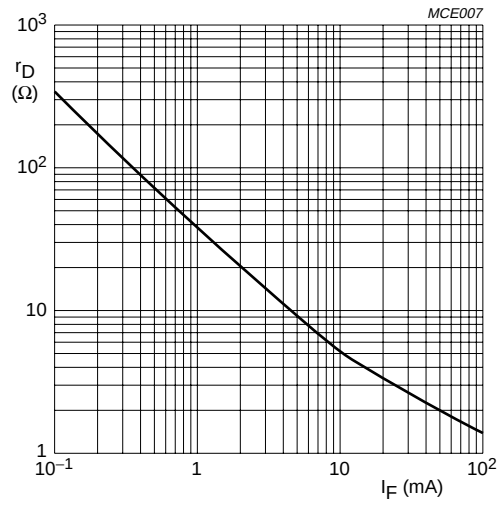
T_j = 25 °C unless otherwise specified.

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

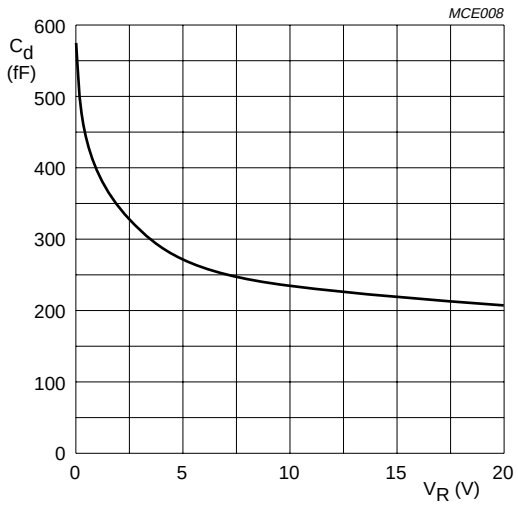
SYMBOL	PARAMETER	VALUE	UNIT
$R_{th\ j\text{-}s}$	thermal resistance from junction to soldering point	145	K/W

GRAPHICAL DATA



f = 100 MHz; T_j = 25 °C.

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

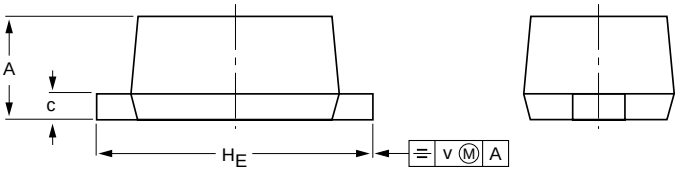


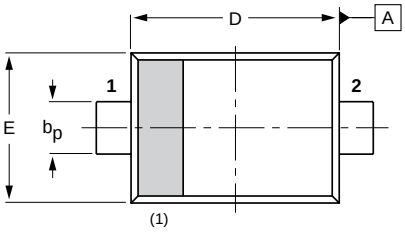
f = 1 MHz; T_j = 25 °C.

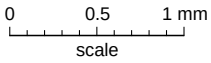
Fig.3 Diode capacitance as a function of reverse voltage; typical values.

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".

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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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