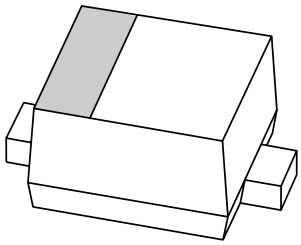
DATA SHEET



BAP70-03
Silicon PIN diode

Preliminary specification

2002 Jun 26

Philips
Semiconductors

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Silicon PIN diode BAP70-03

FEATURES

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

APPLICATIONS

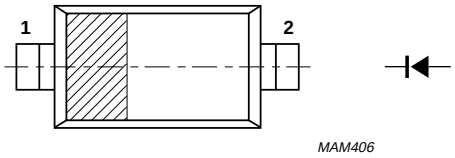
- RF attenuators
- (SAT) TV applications.

DESCRIPTION

Planar PIN diode in a SOD323 small plastic SMD package.

PINNING

PIN	DESCRIPTION
1	cathode
2	anode



Marking code: A9

Fig.1 Simplified outline (SOD323) 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	–	500	mW
T_{stg}	storage temperature		–65	+150	°C
T_j	junction temperature		–65	+150	°C

ELECTRICAL CHARACTERISTICS

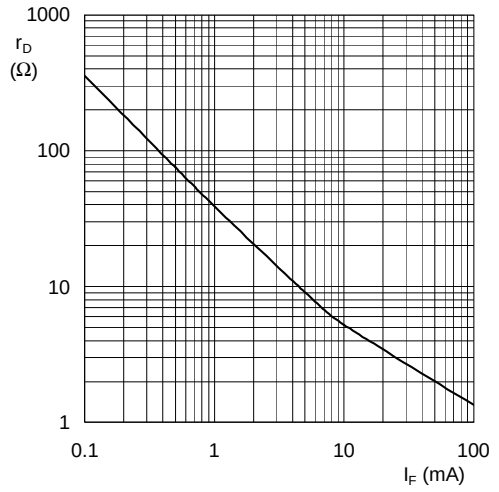
T_j = 25 °C unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
V_F	forward voltage	I_F = 50 mA	–	0.9	1.1	V
I_R	reverse leakage current	V_R = 30 V	–	–	20	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	–	1.5	–	nH

THERMAL CHARACTERISTICS

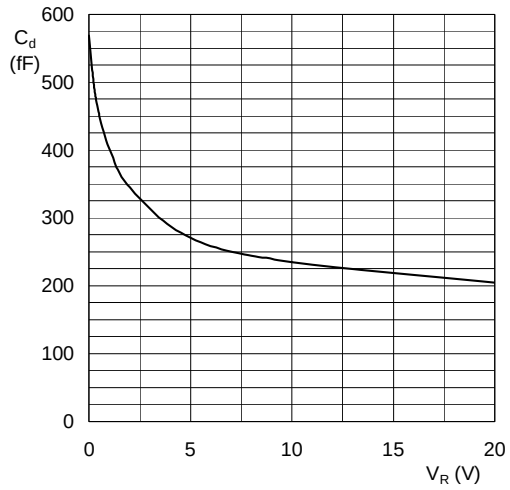
SYMBOL	PARAMETER	VALUE	UNIT
$R_{th\ j\text{-}s}$	thermal resistance from junction to soldering point	120	K/W

GRAPHICAL DATA



f = 100 MHz; T_j = 25 °C.

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

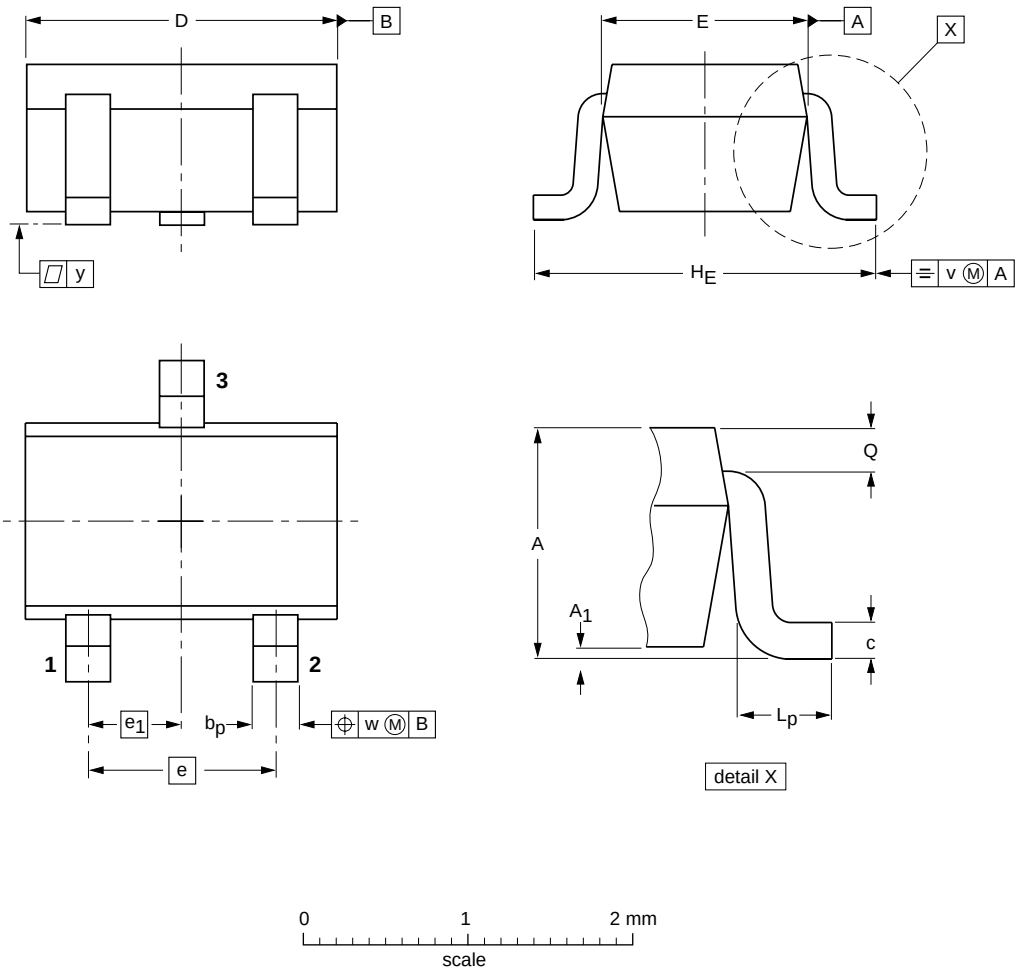


f = 1 MHz; T_j = 25 °C.

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

PACKAGE OUTLINE

Plastic surface mounted package; 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	EIAJ			
SOT323			SC-70			97-02-28

DATA SHEET STATUS

DATA SHEET STATUS[1]	PRODUCT STATUS[2]	DEFINITIONS
Objective data	Development	This data sheet contains data from the objective specification for product development. Philips Semiconductors reserves the right to change the specification in any manner without notice.
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