

General purpose PIN diode

FEATURES

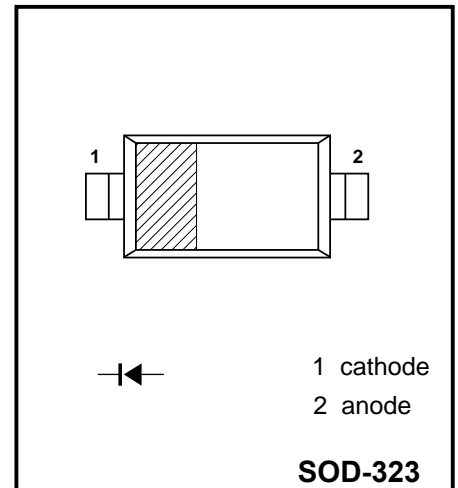
- ◆ Low diode capacitance
- ◆ Low diode forward resistance.

APPLICATIONS

- ◆ General RF applications.

DESCRIPTION

- ◆ General purpose PIN diode in a SOD323 small plastic
- ◆ SMD package.



Product Specification Classification

Part Number	Package	Marking	Pack
BAP50-03	SOD-323	A8	3000PCS/Tape

LIMITING VALUES

In accordance with the Absolute Maximum Rating System (IEC 134).

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V_R	continuous reverse voltage		–	50	V
I_F	continuous forward current		–	50	mA
P_{tot}	total power dissipation	$T_s = 90\text{ }^\circ\text{C}$	–	500	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.

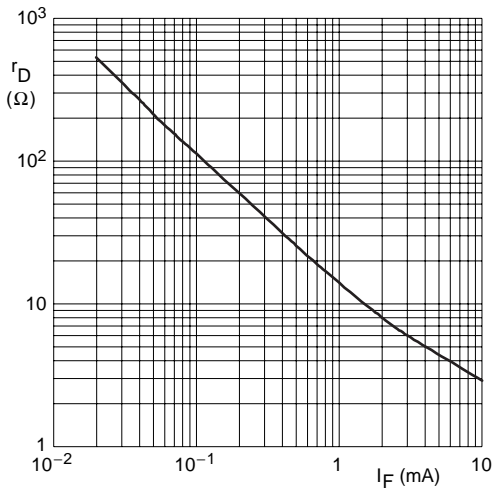
SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
V_F	forward voltage	$I_F = 50\text{ mA}$	–	0.95	1.1	V
V_R	reverse voltage	$I_R = 10\text{ }\mu\text{A}$	50	–	–	V
I_R	reverse current	$V_R = 50\text{ V}$	–	–	100	nA
C_d	diode capacitance	$V_R = 0; f = 1\text{ MHz}$	–	0.4	–	pF
		$V_R = 1\text{ V}; f = 1\text{ MHz}$	–	0.3	0.55	pF
		$V_R = 5\text{ V}; f = 1\text{ MHz}$	–	0.2	0.35	pF
r_D	diode forward resistance	$I_F = 0.5\text{ mA}; f = 100\text{ MHz}; \text{note 1}$	–	25	40	Ω
		$I_F = 1\text{ mA}; f = 100\text{ MHz}; \text{note 1}$	–	14	25	Ω
		$I_F = 10\text{ mA}; f = 100\text{ MHz}; \text{note 1}$	–	3	5	Ω

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

THERMAL CHARACTERISTICS

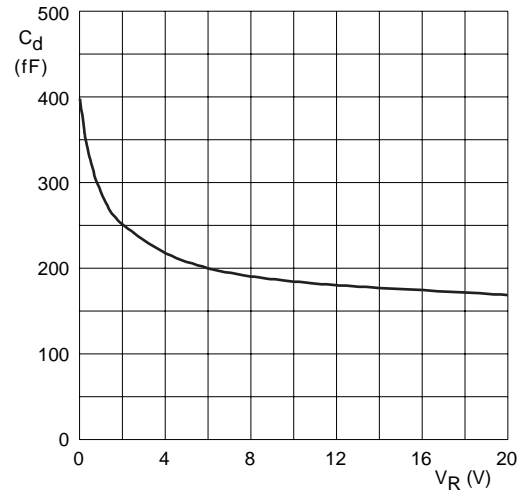
SYMBOL	PARAMETER	VALUE	UNIT
R_{thj-s}	thermal resistance from junction to soldering point	85	K/W

GRAPHICAL DATA



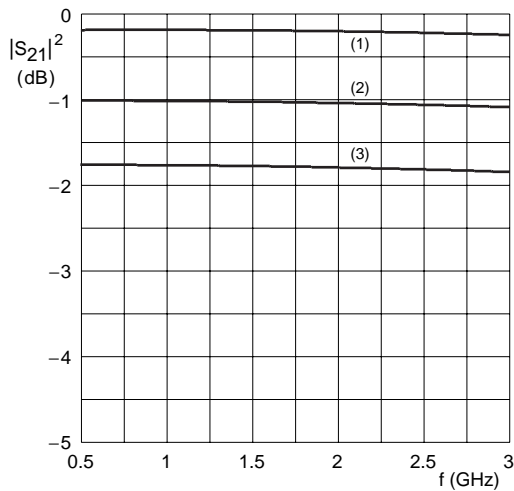
f = 100 MHz; T_j = 25 °C.

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



f = 1 MHz; T_j = 25 °C.

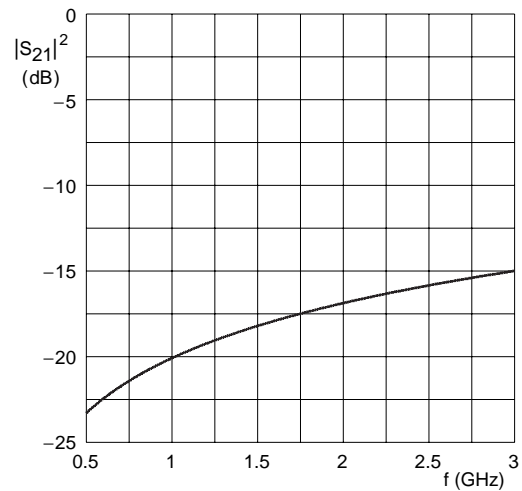
Fig.3 Diode capacitance as a function of reverse voltage; typical values.



(1) I_F = 10 mA. (2) I_F = 1 mA. (3) I_F = 0.5 mA.

Diode inserted in series with a 50 Ω stripline circuit and biased via the analyzer Tee network.
T_{amb} = 25 °C.

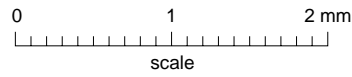
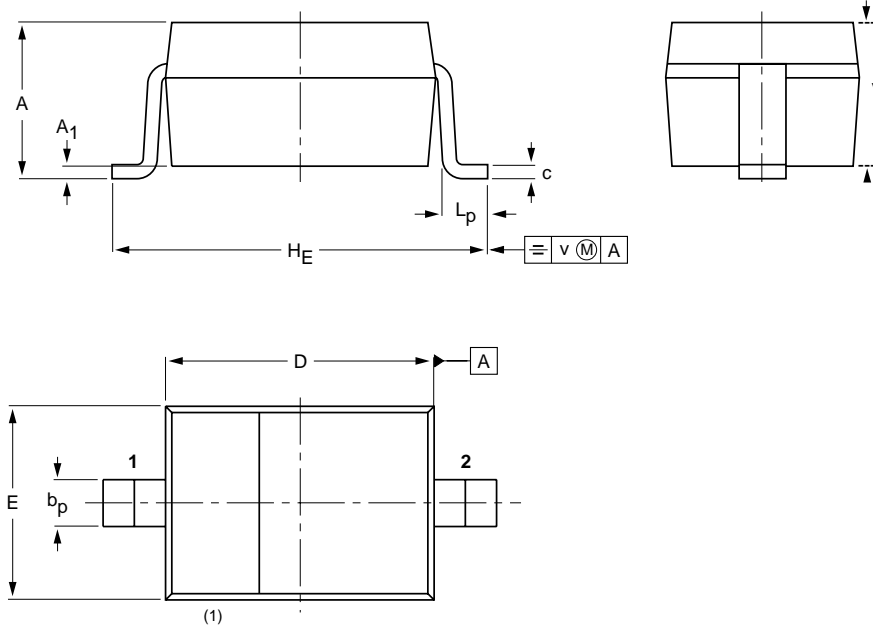
Fig.4 Insertion loss ($|S_{21}|^2$) of the diode as a function of frequency; typical values.



Diode zero biased and inserted in series with a 50 Ω stripline circuit.
T_{amb} = 25 °C.

Fig.5 Isolation ($|S_{21}|^2$) of the diode as a function of frequency; typical values.

Plastic surface mounted package; 2 leads



DIMENSIONS (mm are the original dimensions)

UNIT	A	A ₁	b _p	c	D	E	H _E	L _p	v	
mm	1.0	0.10	0.35	0.15	1.8	1.40	2.7	0.40	0.90	
	---	-0.00	0.25	0.08	1.6	1.20	2.5	0.25	0.80	

Note

1. The marking bar indicates the cathode.