

General Purpose PIN Diode

BAP51-02

■ Features

- Low diode capacitance
- Low diode forward resistance.

SOD-523



Top View

PIN DESCRIPTION

PIN	DESCRIPTION
1	Cathode
2	Anode

■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

Parameter	Symbol	Min	Max	Unit
continuous reverse voltage	V_R		50	V
continuous forward current	I_F		50	mA
total power dissipation $T_s = 90^\circ\text{C}$	P_{tot}		715	mW
storage temperature	T_{stg}	-65	+150	$^\circ\text{C}$
junction temperature	T_j	-65	+150	$^\circ\text{C}$
thermal resistance from junction to soldering point	$R_{th\ j-s}$		85	K/W

■ Electrical Characteristics $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
forward voltage	V_F	$I_F = 50\text{ mA}$		0.95	1.1	V
reverse voltage	V_R	$I_R = 10\ \mu\text{A}$	50			V
reverse current	I_R	$V_R = 50\text{ V}$			100	nA
diode capacitance	C_d	$V_R = 0; f = 1\text{ MHz}$		0.4		pF
		$V_R = 1\text{ V}; f = 1\text{ MHz}$		0.3	0.55	
		$V_R = 5\text{ V}; f = 1\text{ MHz}$		0.2	0.35	
diode forward resistance	r_D	$I_F = 0.5\text{ mA}; f = 100\text{ MHz}; \text{note 1}$		5.5	9	Ω
		$I_F = 1\text{ mA}; f = 100\text{ MHz}; \text{note 1}$		3.6	6.5	
		$I_F = 10\text{ mA}; f = 100\text{ MHz}; \text{note 1}$		1.5	2.5	

Note

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

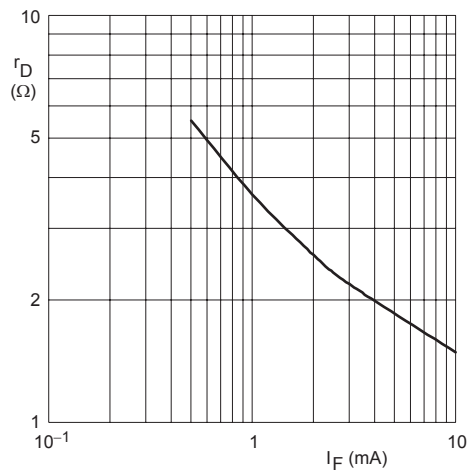
■ Marking

Marking	A5
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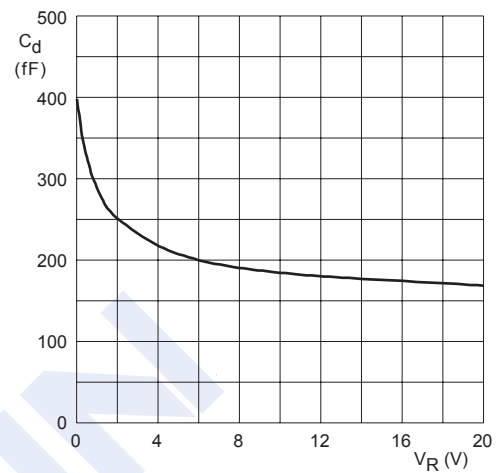
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■ Typical Characteristics



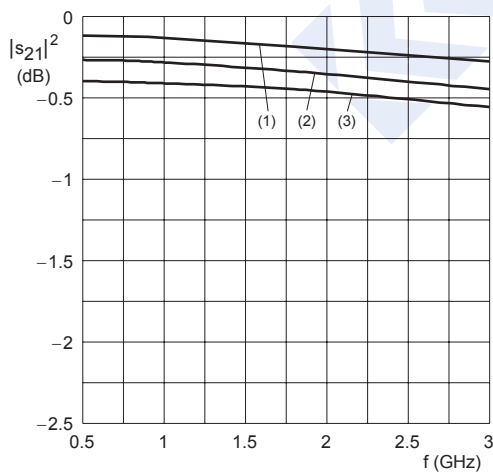
$f = 100 \text{ MHz}$; $T_j = 25^\circ\text{C}$.

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



$f = 1 \text{ MHz}$; $T_j = 25^\circ\text{C}$.

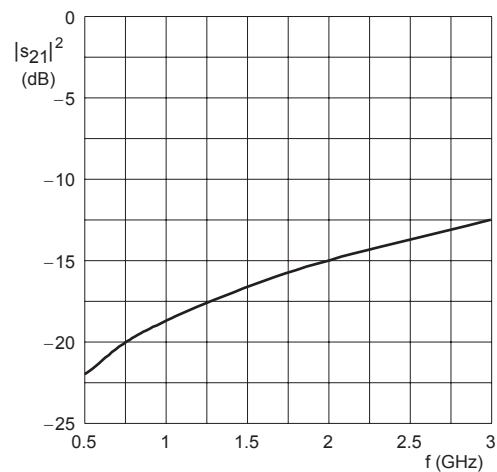
Fig.3 Diode capacitance as a function of reverse voltage; typical values.



(1) $I_F = 10 \text{ mA}$. (2) $I_F = 1 \text{ mA}$. (3) $I_F = 0.5 \text{ mA}$.

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

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



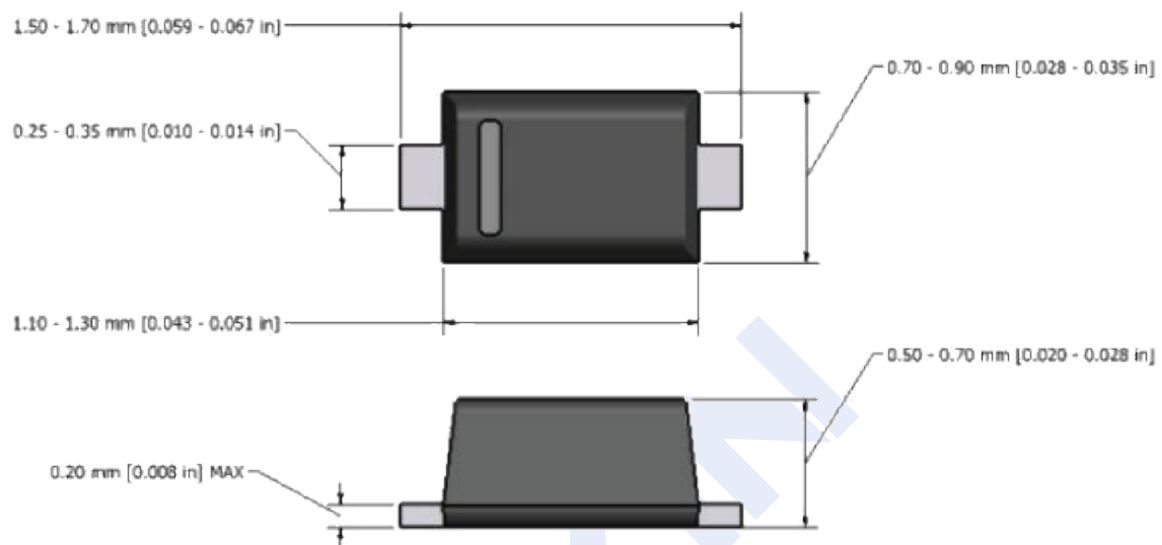
Diode zero biased and inserted in series with a 50Ω stripline circuit.
 $T_{\text{amb}} = 25^\circ\text{C}$.

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

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■ Package Outline Dimensions (SOD-523)



Note: Dimensions are exclusive of Burrs, Mold Flash & Tie Bar extrusions.

■ The Recommended Mounting Pad Size

