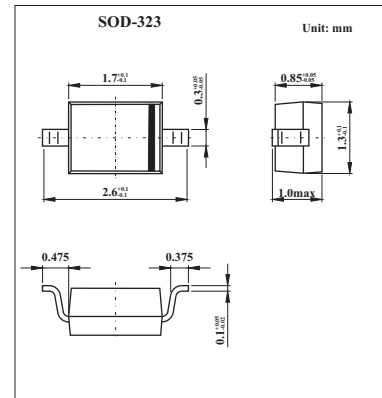


BAP1321-03

■ Features

- High voltage, current controlled
- RF resistor for RF attenuators and switches
- Low diode capacitance
- Low diode forward resistance
- Very low series inductance
- For applications up to 3 GHz.



■ Absolute Maximum Ratings Ta = 25°C

Parameter	Symbol	Rating	Unit
Continuous reverse voltage	V _R	60	V
Continuous forward current	I _F	100	mA
Total power dissipation T _s = 90°C	P _{tot}	500	mW
Storage temperature	T _{stg}	-65 to +150	°C
Junction temperature	T _j	150	°C
Thermal resistance from junction to soldering point	R _{th(j-s)}	120	°C/W

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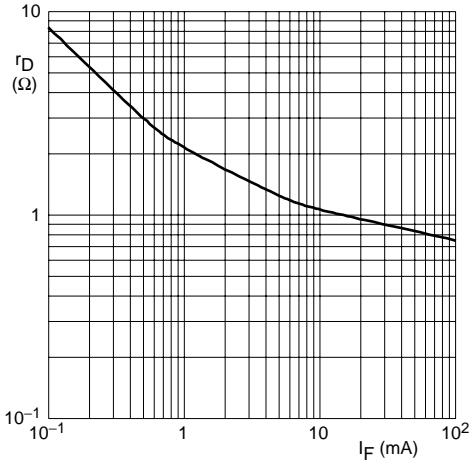
■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Test conditons	Min	Typ	Max	Unit
Forward voltage	V _F	I _F = 50 mA		0.95	1.1	V
Reverse current	I _R	V _R = 60 V			100	nA
Diode capacitance	C _d	V _R = 0; f = 1 MHz		0.4		pF
		V _R = 1 V; f = 1 MHz		0.35	0.45	pF
		V _R = 20 V; f = 1 MHz		0.25	0.32	pF
Diode forward resistance	r _D	I _F = 0.5 mA; f = 100 MHz		3.4	5	Ω
		I _F = 1 mA; f = 100 MHz		2.4	3.6	Ω
		I _F = 10 mA; f = 100 MHz		1.2	1.8	Ω
		I _F = 100 mA; f = 100 MHz		0.85	1.3	Ω
isolation	S ₂₁ ²	V _R = 0; f = 900 MHz		16.6		dB
		V _R = 0; f = 1800 MHz		11.6		dB
		V _R = 0; f = 2450 MHz		9.2		dB
insertion loss	S ₂₁ ²	V _R = 0.5mA; f = 900 MHz		0.26		dB
		V _R = 0.5mA; f = 1800 MHz		0.35		dB
		V _R = 0.5mA; f = 2450 MHz		0.44		dB
insertion loss	S ₂₁ ²	V _R = 1mA; f = 900 MHz		0.2		dB
		V _R = 1mA; f = 1800 MHz		0.29		dB
		V _R = 1mA; f = 2450 MHz		0.38		dB
insertion loss	S ₂₁ ²	V _R = 10mA; f = 900 MHz		0.13		dB
		V _R = 10mA; f = 1800 MHz		0.22		dB
		V _R = 10mA; f = 2450 MHz		0.32		dB
insertion loss	S ₂₁ ²	V _R = 100mA; f = 900 MHz		0.1		dB
		V _R = 100mA; f = 1800 MHz		0.2		dB
		V _R = 100mA; f = 2450 MHz		0.29		dB
charge carrier life time	τ _L	When switched from I _F = 10 mA to I _R = 6 mA; R _L = 100 Ω; measured at I _R = 3 mA		0.5		μs
series inductance	L _s	I _F = 100 mA; f = 100 MHz		1.5		nH

■ Marking

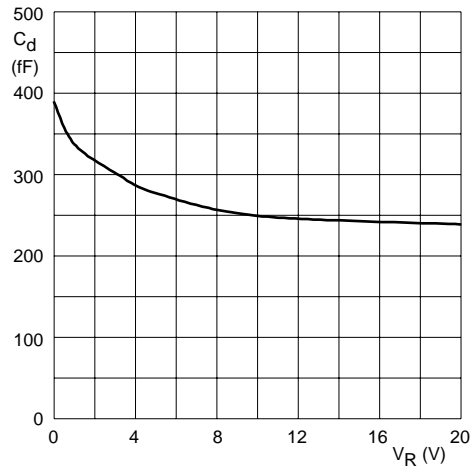
Marking	V8
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■ Typical Characteristics



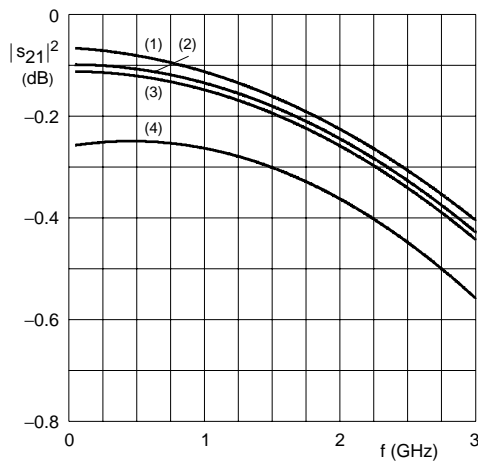
$T_j = 25\text{ }^\circ\text{C}; f = 100\text{ MHz.}$

Fig.1 Forward resistance as a function of the forward current; typical values.



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

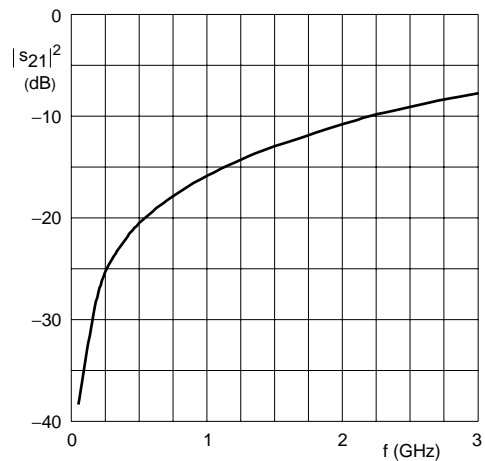
Fig.2 Diode capacitance as a function of reverse voltage; typical values.



- (1) $I_F = 100\text{ mA.}$
- (2) $I_F = 10\text{ mA.}$
- (3) $I_F = 1\text{ mA.}$
- (4) $I_F = 0.5\text{ mA.}$

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

Fig.3 Insertion loss ($|S_{21}|^2$) of the diode in on-state as a function of frequency; typical values.



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

Fig.4 Isolation ($|S_{21}|^2$) of the diode in off-state as a function of frequency; typical values.