

# BAP64-05

## General Purpose Pin Diodes 250mW

### Features

- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Low diode capacitance
- Low diode forward resistance
- MARKING: 5K

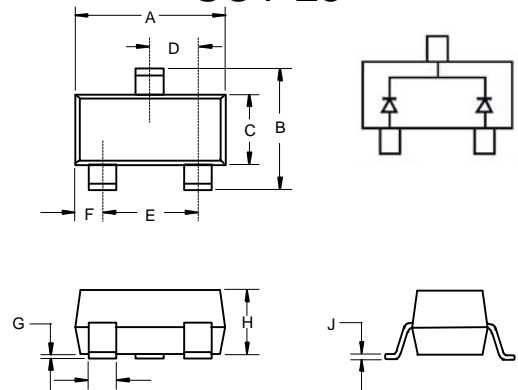
Maximum Ratings @ 25°C Unless Otherwise Specified

Parameter	Symbol	Limits	Unit
Continuous Reverse Voltage	$V_R$	175	V
Forward Current	$I_F$	100	mA
Power Dissipation ( $T_A=90^\circ\text{C}$ )	$P_D$	250	mW
Junction and Storage temperature	$T_j, P_{stg}$	-65~+150	°C
Thermal Resistance Junction to Ambient	$R_{thJA}$	500	°C/W

### Electrical Characteristics @ 25°C Unless Otherwise Specified

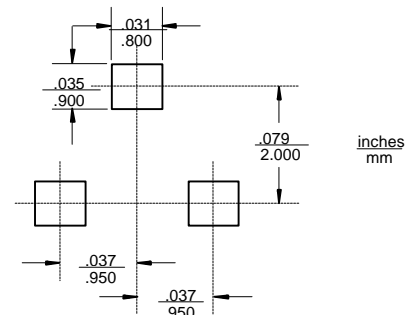
Parameter	Symbol	Min.	TYP	Max.	Unit	Conditions
Reverse Voltage	$I_R$			10		$V_R=175\text{V}$
Leakage Current				1.0	$\mu\text{A}$	$V_R=20\text{V}$
Forward voltage	$V_F$			1.1	V	$I_F=50\text{mA}$
Diode capacitance	$C_{d1}$		0.52		pF	$V_R=0\text{V}, f=1\text{MHz}$
	$C_{d2}$		0.37		pF	$V_R=1\text{V}, f=1\text{MHz}$
	$C_{d3}$		0.23	0.35	pF	$V_R=20\text{V}, f=1\text{MHz}$
Diode forward resistance	$r_D$		20	40	$\Omega$	$I_F=0.5\text{mA}, f=100\text{MHz}$
	$r_D$		10	20	$\Omega$	$I_F=1\text{mA}, f=100\text{MHz}$
	$r_D$		2	3.8	$\Omega$	$I_F=10\text{mA}, f=100\text{MHz}$
	$r_D$		0.7	1.35	$\Omega$	$I_F=100\text{mA}, f=100\text{MHz}$
Charge carrier life time	$\tau_L$		1.55		$\mu\text{S}$	when switched from $I_F=10\text{mA}$ to $I_R=6\text{mA}$ ; $R_L=100\Omega$ ; measured at $I_R=3\text{mA}$
Series inductance	$L_S$		1.4		nH	$I_F=100\text{mA}, f=100\text{MHz}$

### SOT-23

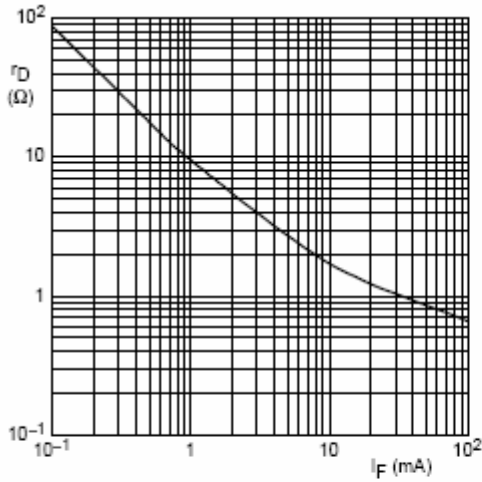


DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	.110	.120	2.80	3.04	
B	.083	.098	2.10	2.64	
C	.047	.055	1.20	1.40	
D	.035	.041	.89	1.03	
E	.070	.081	1.78	2.05	
F	.018	.024	.45	.60	
G	.0005	.0039	.013	.100	
H	.035	.044	.89	1.12	
J	.003	.007	.085	.180	
K	.015	.020	.37	.51	

### Suggested Solder Pad Layout

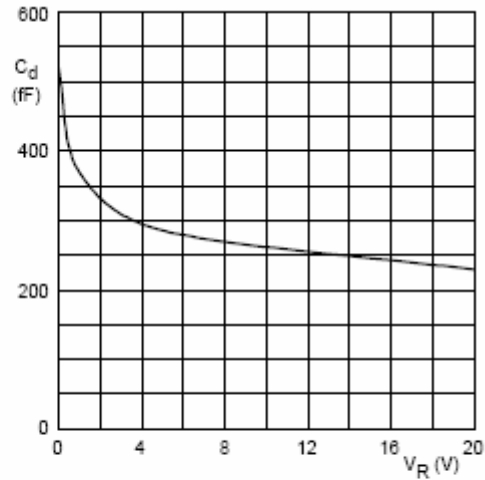


## Typical Characteristics



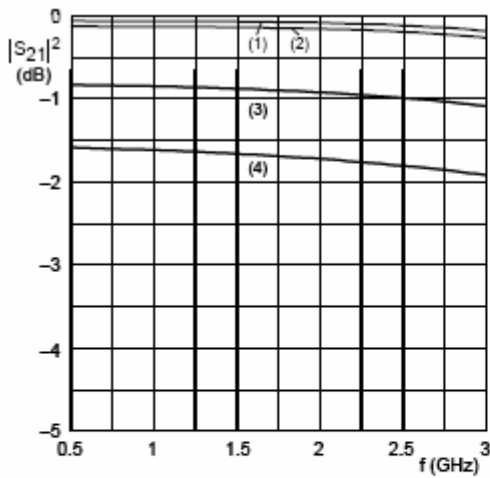
$f = 100 \text{ MHz}; T_j = 25 \text{ }^\circ\text{C}.$

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



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

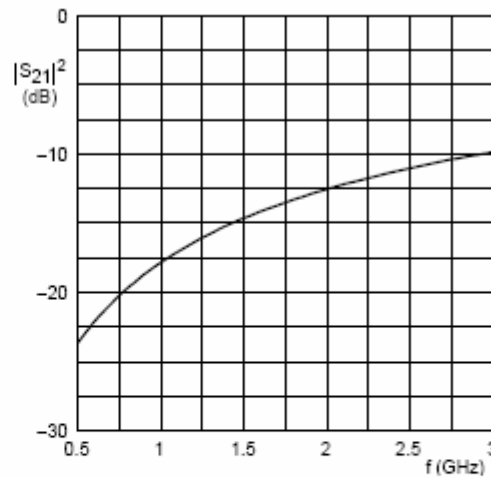
Diode capacitance as a function of reverse voltage; typical values.



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

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

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



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

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



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## Ordering Information

Device	Packing
(Part Number)-TP	Tape&Reel;3Kpcs/Reel

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