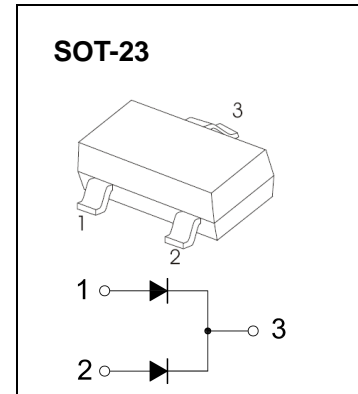


## PIN DIODE

### FEATURES

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

**Marking: 5K**



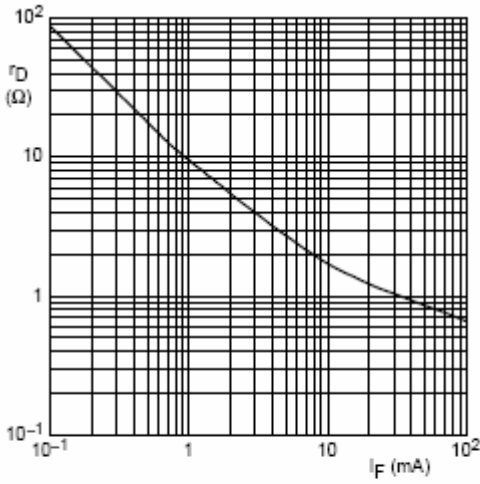
### Maximum Ratings @ $T_A=25^{\circ}\text{C}$

Parameter	Symbol	Limits	Unit
Continuous reverse voltage	$V_R$	175	V
Continuous Forward Current	$I_F$	100	mA
Power Dissipation	$P_D$	2.50	mW
Thermal Resistance Junction to Ambient	$R_{\theta JA}$	500	$^{\circ}\text{C}/\text{W}$
Junction temperature	$T_j$	150	$^{\circ}\text{C}$
Storage temperature	$T_{STG}$	-65~+150	$^{\circ}\text{C}$

### ELECTRICAL CHARACTERISTICS ( $T_{amb}=25^{\circ}\text{C}$ unless otherwise specified)

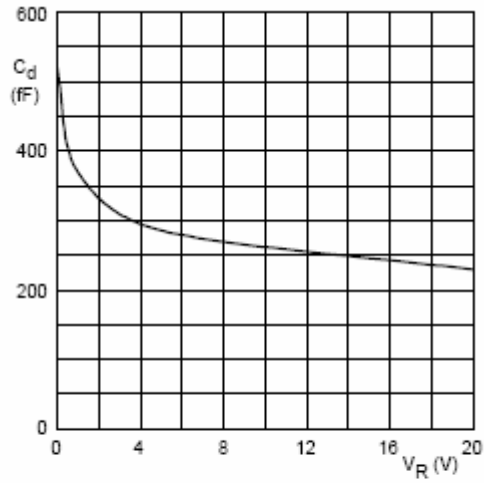
Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Reverse voltage leakage current	$I_R$	$V_R=175\text{V}$ $V_R=20\text{V}$			10 1	$\mu\text{A}$
Forward voltage	$V_F$	$I_F=50\text{mA}$			1.1	V
Diode capacitance	$C_d$	$V_R=0, f=1\text{MHz}$ $V_R=1\text{V}, f=1\text{MHz}$ $V_R=20\text{V}, f=1\text{MHz}$		0.52 0.37 0.23	0.35	pF
Diode forward resistance	$r_D$	$I_F=0.5\text{mA}, f=100\text{MHz}; \text{note1}$ $I_F=1\text{mA}, f=100\text{MHz}; \text{note1}$ $I_F=10\text{mA}, f=100\text{MHz}; \text{note1}$ $I_F=100\text{mA}, f=100\text{MHz}; \text{note1}$		20 10 2 0.7	40 20 3.8 1.35	$\Omega$
Charge carrier life time	$\tau_L$	when switched from $I_F = 10 \text{ mA}$ to $I_R = 6 \text{ mA}$ ; $R_L = 100 \Omega$ ; measured at $I_R = 3\text{mA}$		1.55		$\mu\text{S}$
Series inductance	$L_S$	$I_F=100\text{mA}, f=100\text{MHz}$		1.4		nH

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



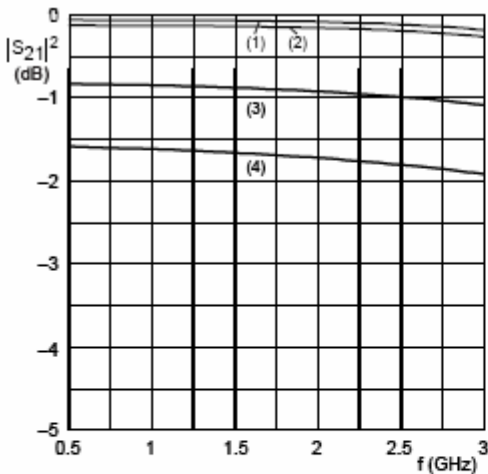
$f = 100 \text{ MHz}; T_j = 25 \text{ }^\circ\text{C}.$

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



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

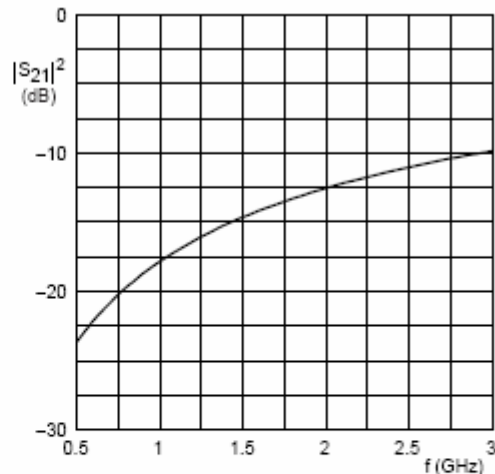
Diode capacitance as a function of reverse voltage; typical values.



(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.  
 $T_{amb} = 25 \text{ }^\circ\text{C}.$

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.  
 $T_{amb} = 25 \text{ }^\circ\text{C}.$

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