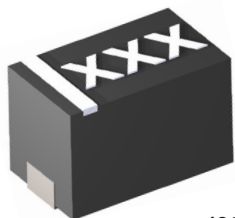


MSWSE-020-05

Silicon PIN Diode Switch Element



(0503)
Molded Plastic DFN Package



Description

The MSWSE-020-05 is a PIN diode SPST switch element designed for medium incident power applications, up to 20 W C.W. It has low insertion loss and medium isolation below 0.5 GHz.

Features

- Small Size (50 mils X 30 mils)
- Broadband performance up to 1.0 GHz
- Supports up to 20 watts power when cold switched
- Low insertion loss 0.05 dB typical up to 1.0 GHz
- Cost effective choice for switch applications

Maximum Ratings

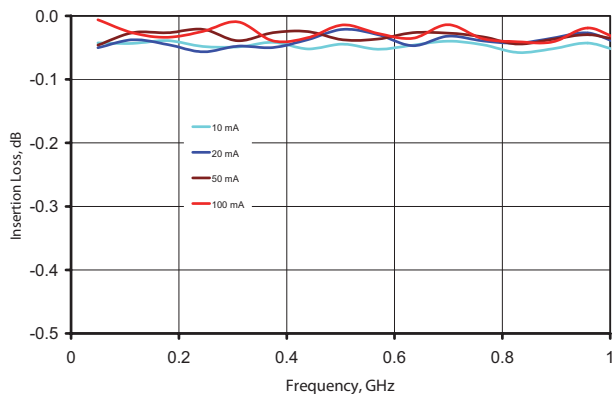
RATING	LIMITS	UNITS
V_R	250	V
I_F	500	mA
θ_{JC}	15	°C / W
T_J	+175	°C
T_{STG}	-55 to +150	°C
T_{SOLDER}	+260 °C per JEDEC STD-J-20C	

Electrical Characteristics, $T_C = +25\text{ °C}$

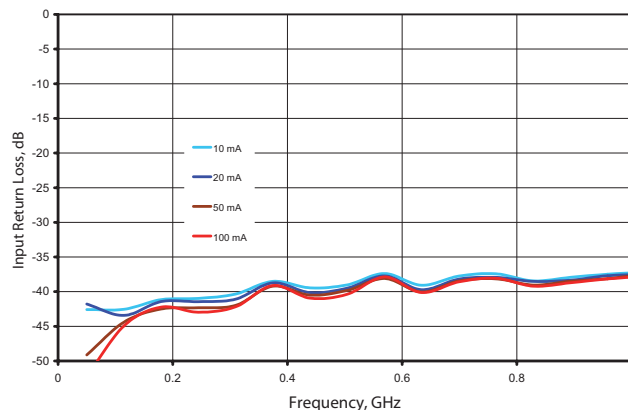
SYMBOL	TEST CONDITIONS			MIN	TYPICAL	MAX	UNITS
V_{BR}	$I_R = 10\text{ }\mu\text{A}$			250	—	—	V
V_F	$I_F = 50\text{ mA}$			—	850	950	mV
C_j	$V_R = -50\text{ V}$	$F = 1\text{ MHz}$		—	0.53	0.65	pF
C_T	$V_R = -50\text{ V}$	$F = 1\text{ MHz}$		—	0.62	0.75	pF
R_S	$I_F = 10\text{ mA}$	$F = 500\text{ MHz}$		—	0.3	0.5	Ω
	$I_F = 100\text{ mA}$	$F = 500\text{ MHz}$		—	0.1	0.3	Ω
τ	$I_F = 10\text{ mA}$	$I_R = 6\text{ mA}$	measured at 50%	—	600	1000	nsec
W	I-Layer			—	15	—	μm
I_L	$I_F = 50\text{ mA}$	$F < 1.00\text{ GHz}$		—	0.05	0.15	dB
IRL / ORL	$I_F = 50\text{ mA}$	$F < 0.50\text{ GHz}$		35	40	—	
		$F < 1.00\text{ GHz}$		—	38	—	
I_{so}	$V_R = 50\text{ V}$	$F < 0.50\text{ GHz}$		11	14	—	dB
		$F < 1.00\text{ GHz}$		—	8	—	dB



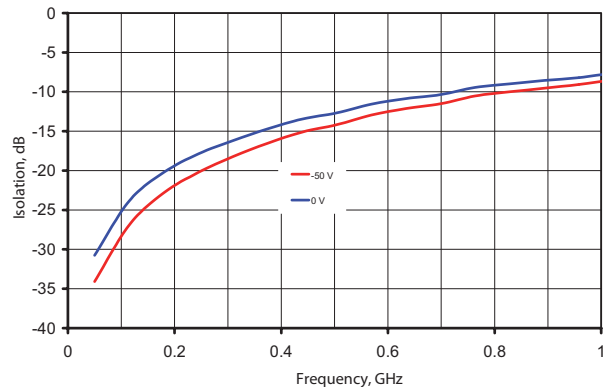
Insertion Loss



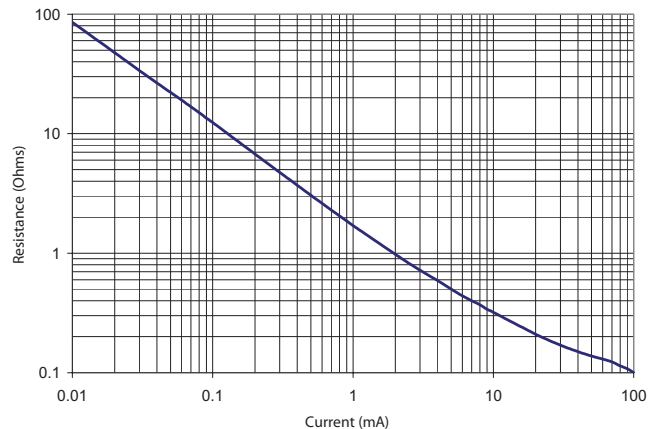
Input Return Loss



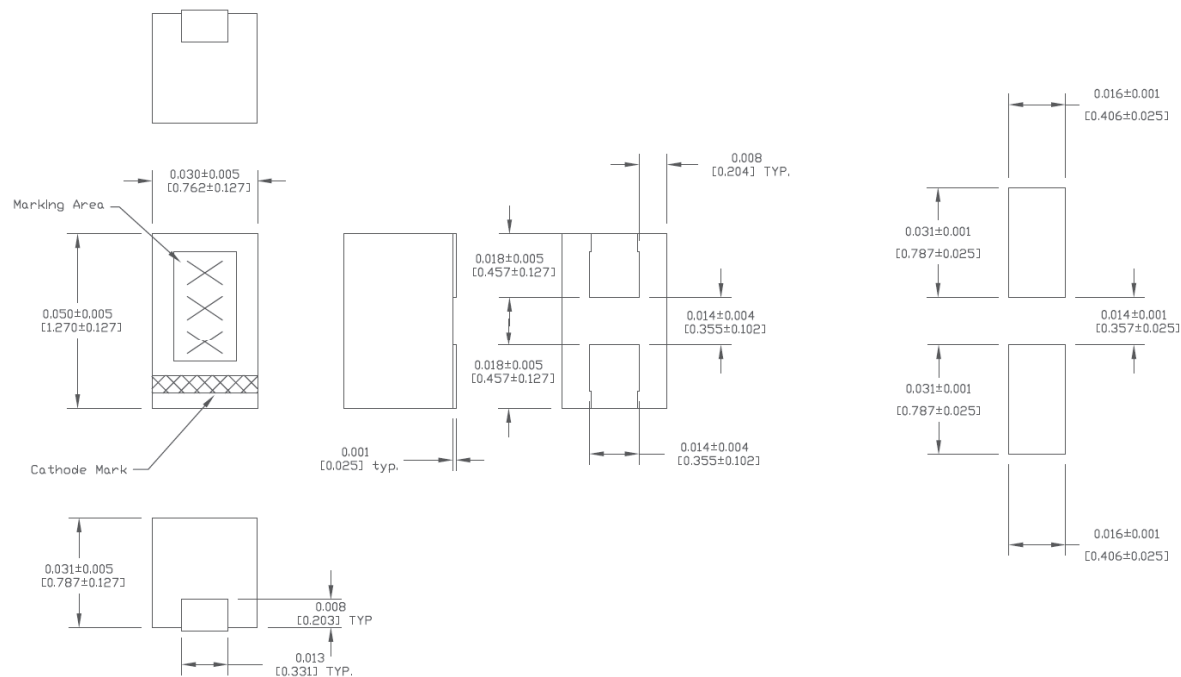
Isolation



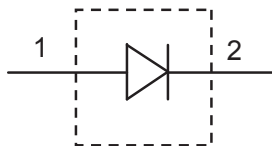
Series Resistance vs. Current



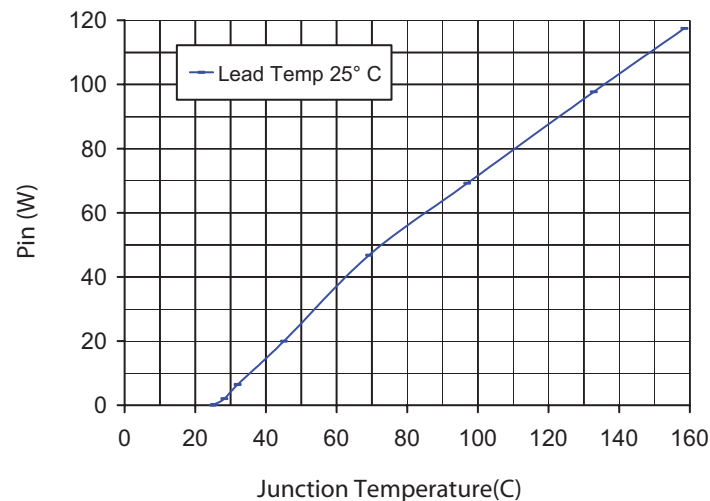
Package Outline and PCB Layout



Electrical Schematic



Junction Temperature vs Pin Mounted on Heatsink, 1.3 GHz



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Our passion for performance is defined by three attributes represented by these three icons: solution-minded, performance-driven and customer-focused.