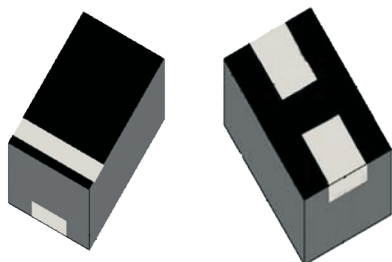


# MSWSE-005-15

## Silicon PIN Diode Switch Element



(0503)

Molded Plastic DFN Package



### Description

The MSWSE-005-15 is a PIN diode SPST switch element designed for medium incident power applications, up to 4W C.W. It has low insertion loss and medium isolation below 6.0 GHz.

### Features

- Small Size (50 mils X 30 mils)
- Broadband performance up to 6.0 GHz
- Supports up to 4 watts power when cold switched
- Low insertion loss 0.5 dB typical up to 6.0 GHz
- Cost effective choice for switch applications

### Maximum Ratings

RATING	LIMITS	UNITS
$V_R$	200	V
$I_F$	200	mA
$\theta_{JC}$	50	°C / W
$T_J$	+175	°C
$T_{STG}$	-55 to +150	°C
$T_{SOLDER}$	+260 °C per JEDEC STD-J-20C	

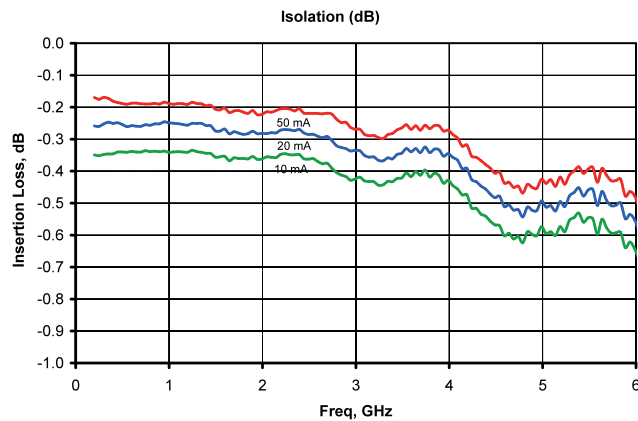
### Electrical Characteristics, $T_C = +25\text{ °C}$

SYMBOL	TEST CONDITIONS			MIN	TYPICAL	MAX	UNITS
$V_{BR}$	$I_R = 10\text{ }\mu\text{A}$			200	—	—	V
$V_F$	$I_F = 50\text{ mA}$			—	980	1050	mV
$C_j$	$V_R = -50\text{ V}$	$F = 1\text{ MHz}$		—	0.035	.05	pF
$C_T$	$V_R = -50\text{ V}$	$F = 1\text{ MHz}$		—	0.11	0.15	pF
$R_s$	$I_F = 30\text{ mA}$	$F = 500\text{ MHz}$		—	2.0	2.5	$\Omega$
	$I_F = 100\text{ mA}$	$F = 500\text{ MHz}$		—	1.4	1.8	
$\tau$	$I_F = 10\text{ mA}$	$I_R = 6\text{ mA}$	measured at 50%	—	180	300	nsec
$W$	I-Layer			—	15	—	$\mu\text{m}$
$I_L$	$I_F = 50\text{ mA}$	$F < 2.7\text{ GHz}$		—	0.25	0.4	dB
		$F < 6.0\text{ GHz}$		—	0.5	—	dB
$I_{50}$	$V_R = 50\text{ V}$	$F < 2.7\text{ GHz}$		13	16	—	dB
		$F < 6.0\text{ GHz}$		—	10	—	dB



Revision Date: 9/22/2011

## Insertion Loss



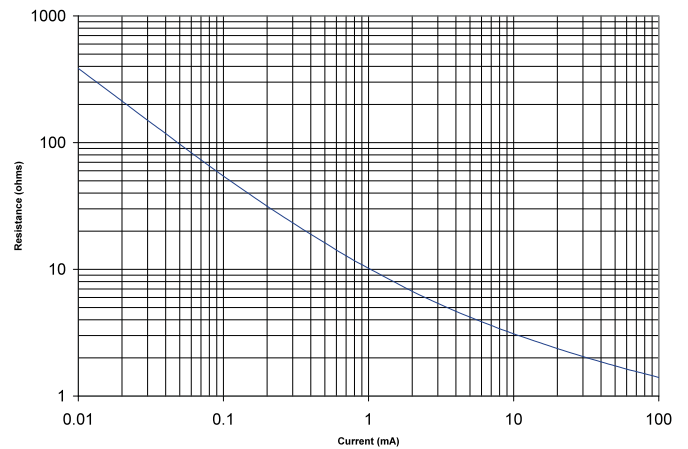
## Input Return Loss



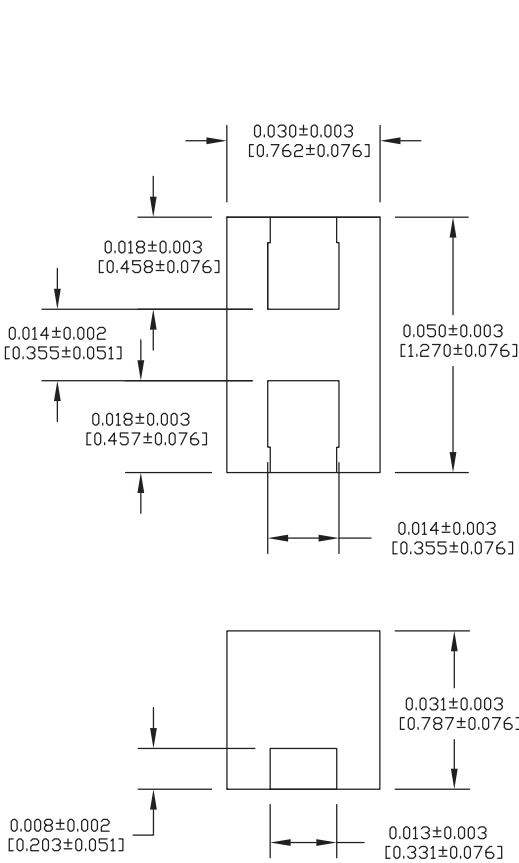
## Isolation



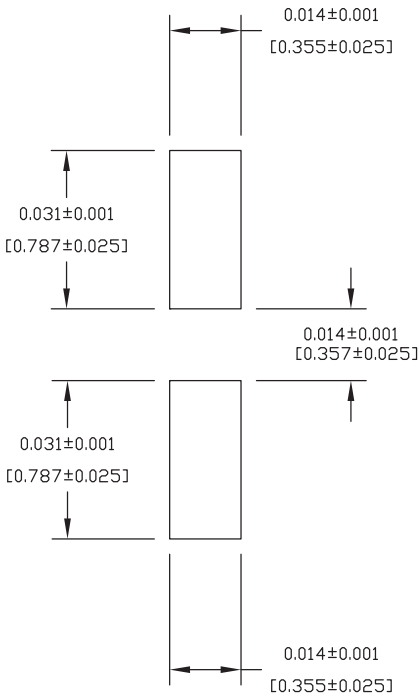
## Series Resistance vs. Current



## Package Outline and PCB Layout

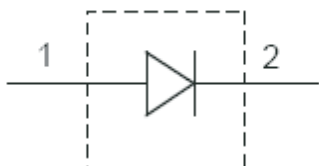


0503 PACKAGE

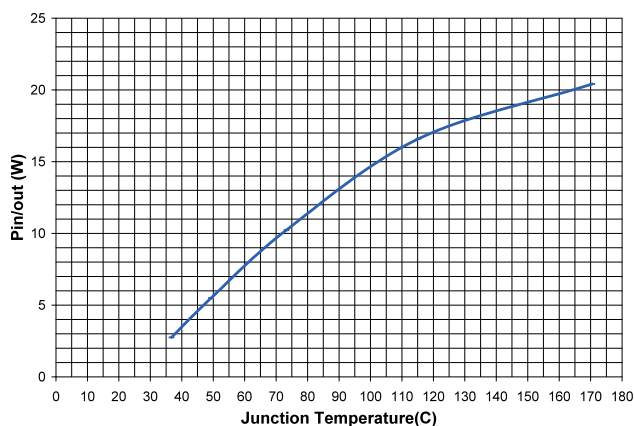


SOLDERING FOOTPRINT

## Schematic



## Junction Temperature vs Power (Trace Temperature maintained at 25°C)



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