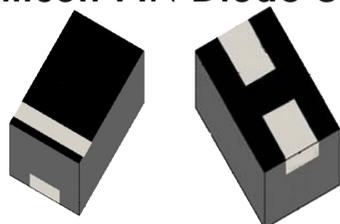


# MSWSE-010-15

## Silicon PIN Diode Switch Element



**(0503)**  
Molded Plastic DFN Package



### Description

The MSWSE-010-15 is a PIN diode SPST switch element designed for medium incident power applications, up to 10W C.W. It has low insertion loss and medium isolation below 3.0 GHz.

### Features

- SMALL SIZE (50 mils X 30 mils)
- Broadband performance up to 3.0 GHz
- Supports up to 10 watts power when cold switched
- Low insertion loss 0.25 dB typical up to 3.0 GHz
- Cost effective choice for switch applications

### Maximum Ratings

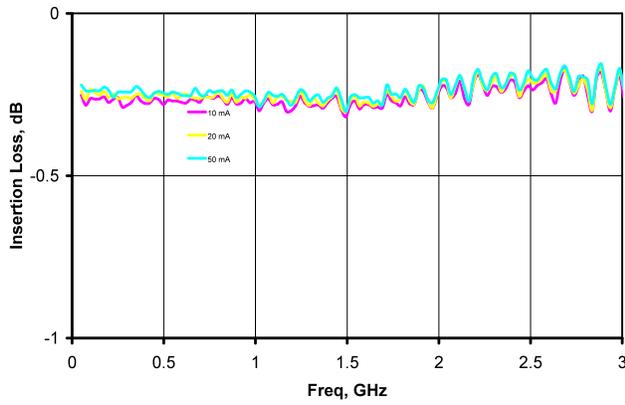
RATING	LIMITS	UNITS
$V_R$	200	V
$I_F$	200	mA
$\theta_{JC}$	35	°C / W
$T_J$	+175	°C
$T_{STG}$	-55 to +150	°C
$T_{SOLDER}$	+260 °C per JEDEC STD-J-20C	

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

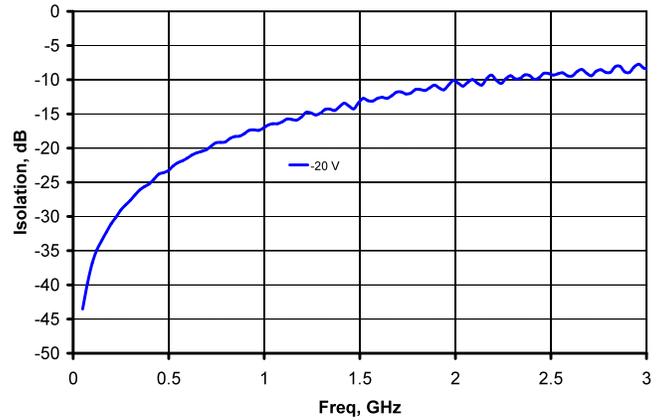
SYMBOL	TEST CONDITIONS		MIN	TYPICAL	MAX	UNITS	
$V_{BR}$	$I_R = 10\ \mu\text{A}$		200	–	–	V	
$V_F$	$I_F = 50\ \text{mA}$		–	870	950	mV	
Cj	$V_R = -50\ \text{V}$	F = 1 MHz	–	0.14		pF	
$C_T$	$V_R = -50\ \text{V}$	F = 1 MHz	–	0.21	0.25	pF	
$R_s$	$I_F = 30\ \text{mA}$	F = 500 MHz	–	0.8	1.0	$\Omega$	
	$I_F = 100\ \text{mA}$	F = 500 MHz	–	0.6	0.8		
$\tau$	$I_F = 10\ \text{mA}$	$I_R = 6\ \text{mA}$	measured at 50%	–	500	900	nsec
W	I-Layer		–	15	–	$\mu\text{m}$	
$I_L$	$I_F = 50\ \text{mA}$	F < 1.0 GHz	–	0.25	–	dB	
		F < 2.0 GHz	–		0.30	dB	
$I_{50}$	$V_R = 50\ \text{V}$	F < 1.0 GHz	13	17		dB	
		F < 2.0 GHz	–	11		dB	



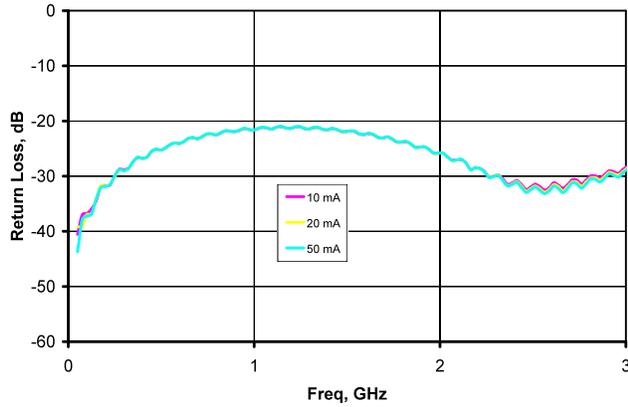
### Insertion Loss



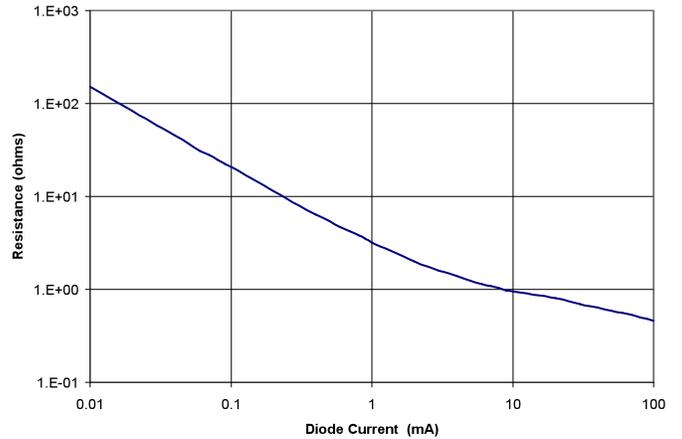
### Isolation



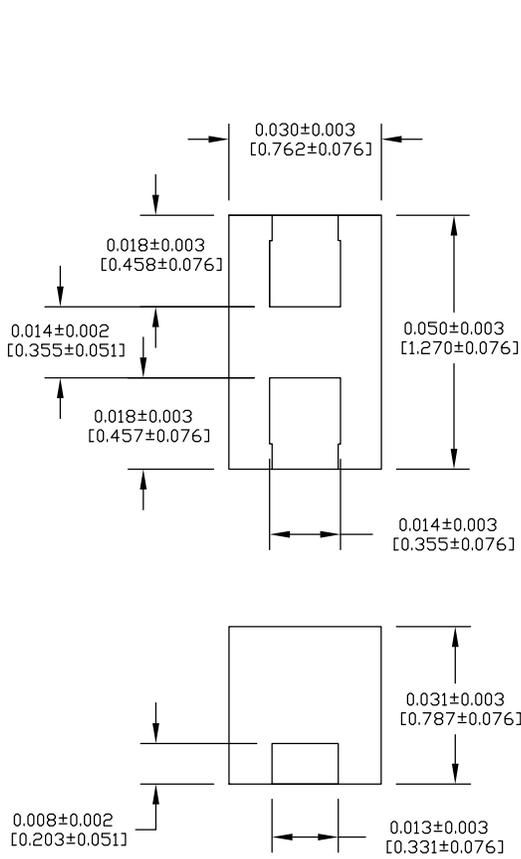
### Input Return Loss



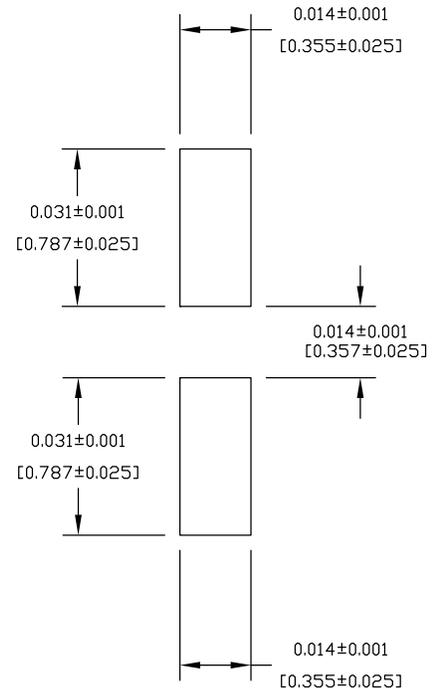
### Series Resistance vs. Current



## Package Outline and PCB Layout

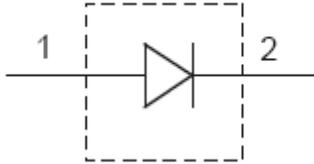


0503 PACKAGE

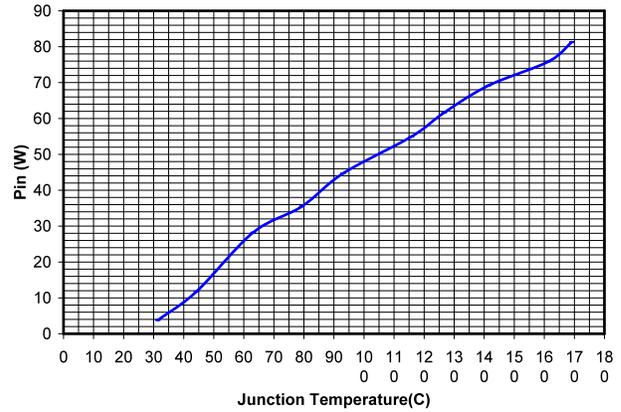


SOLDERING FOOTPRINT

## Schematic



## Junction Temperature vs Power Lead temperature maintained at 25°C



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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.