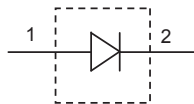
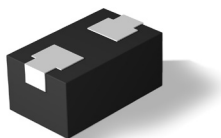


# MSWSE-010-15S

## Silicon PIN Diode Switch Element



**0402**  
(Molded Plastic DFN Package)

### Description

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

### Features

- SMALL SIZE (40 mils X 24 mils)
- Broadband performance up to 3.0 GHz
- Supports up to 10 watts power
- Low insertion loss 0.15 dB typical up to 3.0 GHz
- Cost effective choice for switch applications

### Maximum Ratings

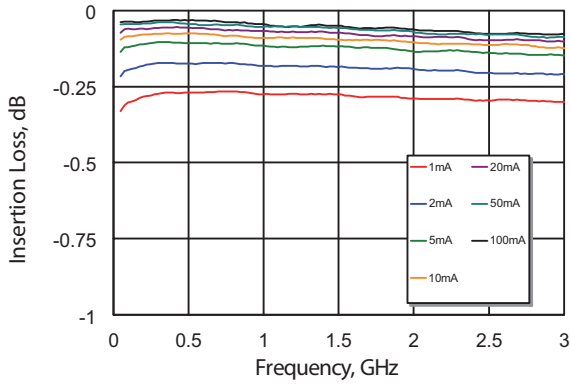
RATING	LIMITS	UNITS
$V_R$	200	V
$I_F$	200	mA
$\theta_{JC}$	35	°C/W
$T_J$	+175	°C
$T_{STG}$	-55 to +150	°C
$T_{SOLDER}$	+260 °C per JEDEC J-STD-20C	

### Electrical Specifications, $T_A = +25\text{ °C}$

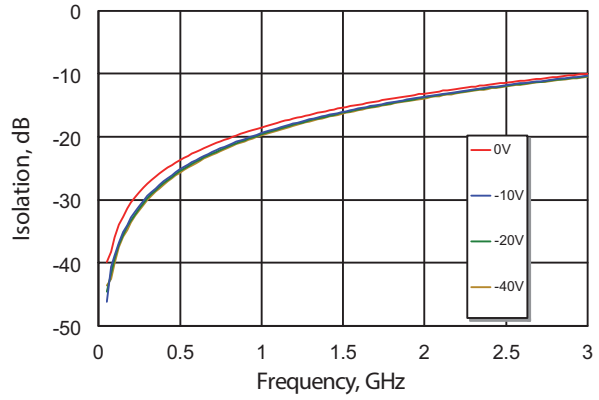
SYMBOL	TEST CONDITIONS	MIN	TYPICAL	MAX	UNITS	
$V_{BR}$	$I_R = 10\ \mu\text{A}$	200	–	–	V	
$V_F$	$I_F = 50\ \text{mA}$	–	870	950	mV	
$C_J$	$V_R = -50\ \text{V}$ $F = 1\ \text{MHz}$	–	0.13	–	pF	
$C_T$	$V_R = -50\ \text{V}$ $F = 1\ \text{MHz}$	–	0.17	0.22	pF	
$R_S$	$I_F = 30\ \text{mA}$ $F = 500\ \text{MHz}$	–	0.8	1.0	$\Omega$	
	$I_F = 100\ \text{mA}$ $F = 500\ \text{MHz}$	–	0.6	0.8	$\Omega$	
$\tau$	$I_F = 10\ \text{mA}$ $I_R = 6\ \text{mA}$ measured at 50%	–	650	900	ns	
$W$	I-Layer	–	40	–	$\mu\text{m}$	
$IL$	$I_F = 50\ \text{mA}$	$F < 1.0\ \text{GHz}$	–	0.05	–	dB
		$F < 2.0\ \text{GHz}$	–	0.10	0.25	dB
$IRL$	$I_F = 50\ \text{mA}$	$F < 1.0\ \text{GHz}$	25	30	–	dB
		$F < 2.0\ \text{GHz}$	–	25	–	dB
$Iso$	$V_R = 50\ \text{V}$	$F < 1.0\ \text{GHz}$	15	20	–	dB
		$F < 2.0\ \text{GHz}$	–	15	–	dB



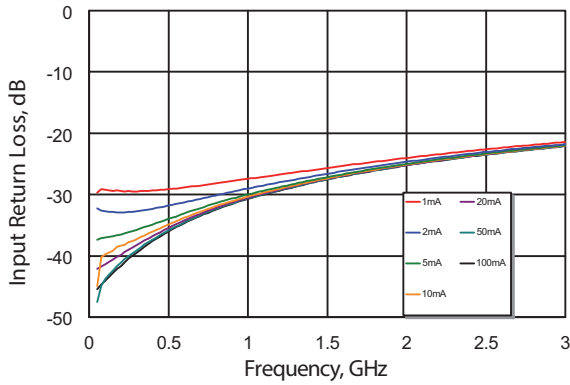
## Insertion Loss



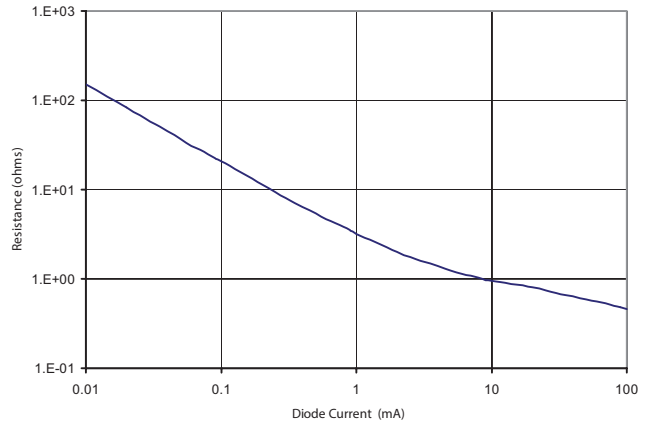
## Isolation



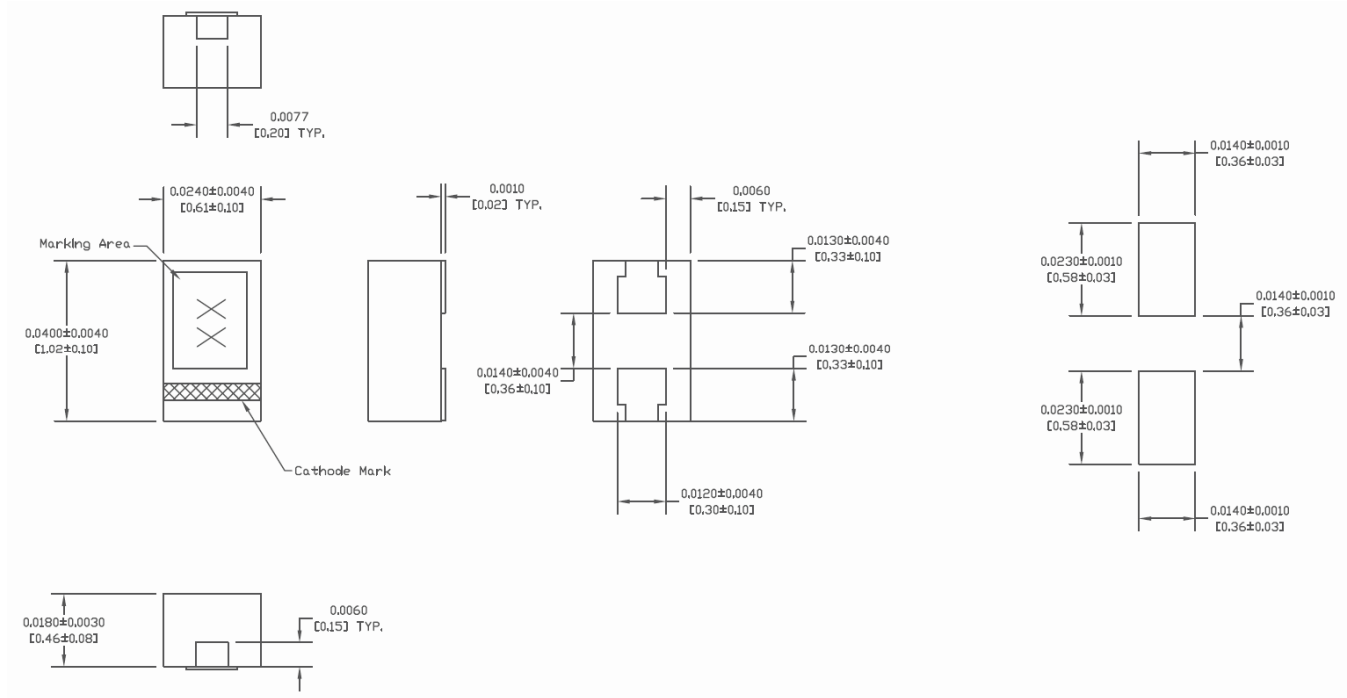
## Input Return Loss



## Series Resistance vs. Current



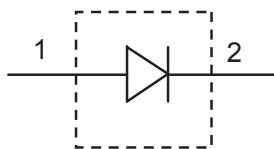
## Package Outline (0402) and PCB Layout



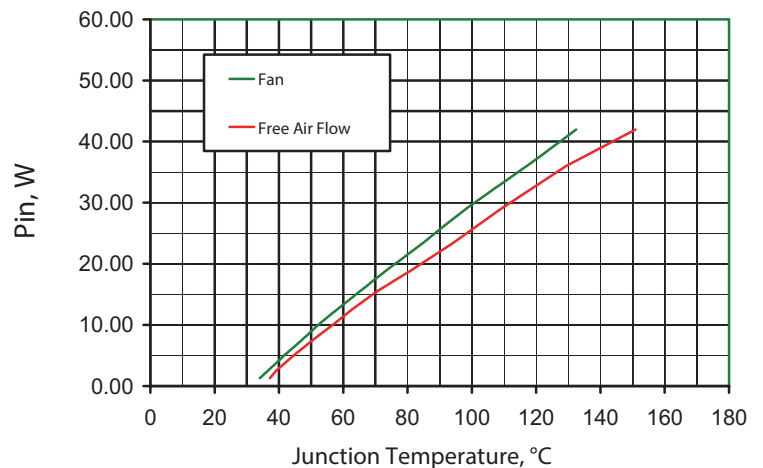
Dimensions: inches [mm]

Finish: 300 micro inches matte Tin, annealed 1 hour at 150° C

## Electrical Schematic



## Junction Temperature vs Pin Mounted on Heatsink 25°C Amb 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.