

# MSWSE-050-17

## Silicon PIN Diode Switch Element



**(0805P)**  
non-hermetic



### Description

The MSWSE-050-17 is a PIN diode SPST switch element designed for medium incident power applications, up to 40W C.W. It has low insertion loss.

### Features

- Broadband performance up to 3.0 GHz
- Low Insertion Loss
- Cost effective choice for switch applications

### Maximum Ratings

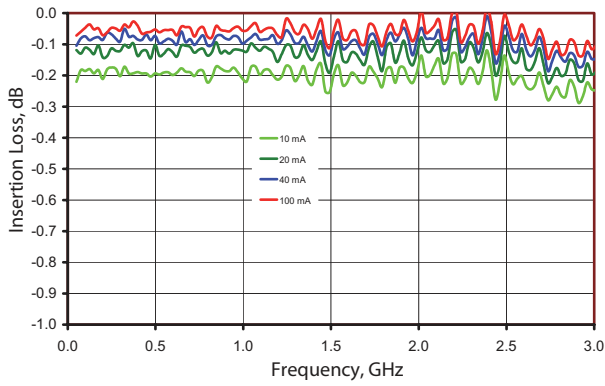
RATING	LIMITS	UNITS
$V_R$	500	V
$I_F$	500	mA
$\theta_{JC}$	10	°C / W
$T_J$	+175	°C
$T_{STG}$	-55 to +150	°C
$T_{SOLDER}$	+260 °C per JEDEC STD-J-20C	

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

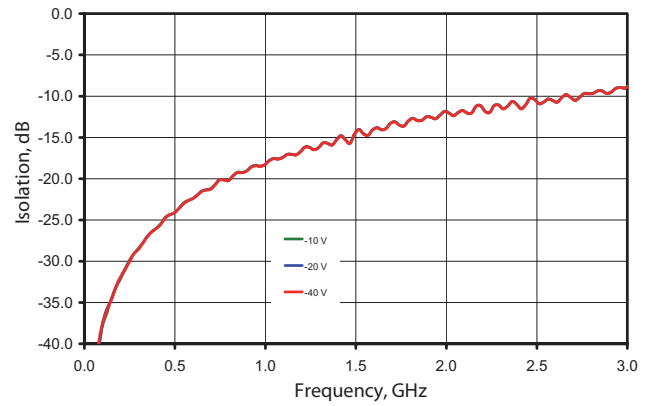
SYMBOL	TEST CONDITIONS			MIN	TYPICAL	MAX	UNITS
$V_{BR}$	$I_R = 10\ \mu\text{A}$			500	–	–	V
$V_F$	$I_F = 50\ \text{mA}$			–	850	950	mV
$C_T$	$V_R = 50\ \text{V}$	F = 1 MHz		–	0.20	0.25	pF
$R_S$	$I_F = 100\ \text{mA}$	F = 100 MHz		–	0.75	–	$\Omega$
$\tau$	$I_F = 10\ \text{mA}$	$I_R = 6\ \text{mA}$	measured at 50%	–	1600	–	ns
W	I-Layer			–	80	–	$\mu\text{m}$
$I_L$	$I_F = 50\ \text{mA}$	F < 0.5 GHz		–	0.06	0.2	dB
		F < 2.0 GHz		–	0.1	0.2	dB
IRL / ORL	$I_F = 50\ \text{mA}$	F < 0.5 GHz		25	33	–	dB
		F < 2.0 GHz		20	25	–	dB
$I_{SO}$	$V_R = 50\ \text{V}$	F < 0.5 GHz		22	24	–	dB
		F < 2.0 GHz		20	12	–	dB



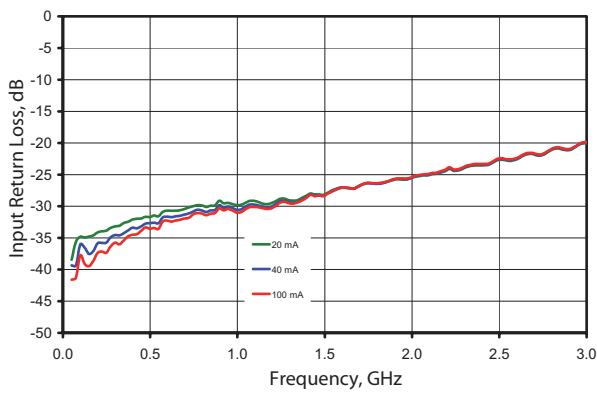
## Insertion Loss



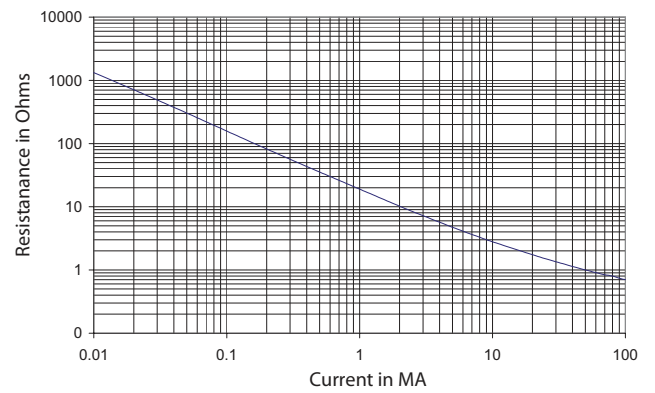
## Isolation



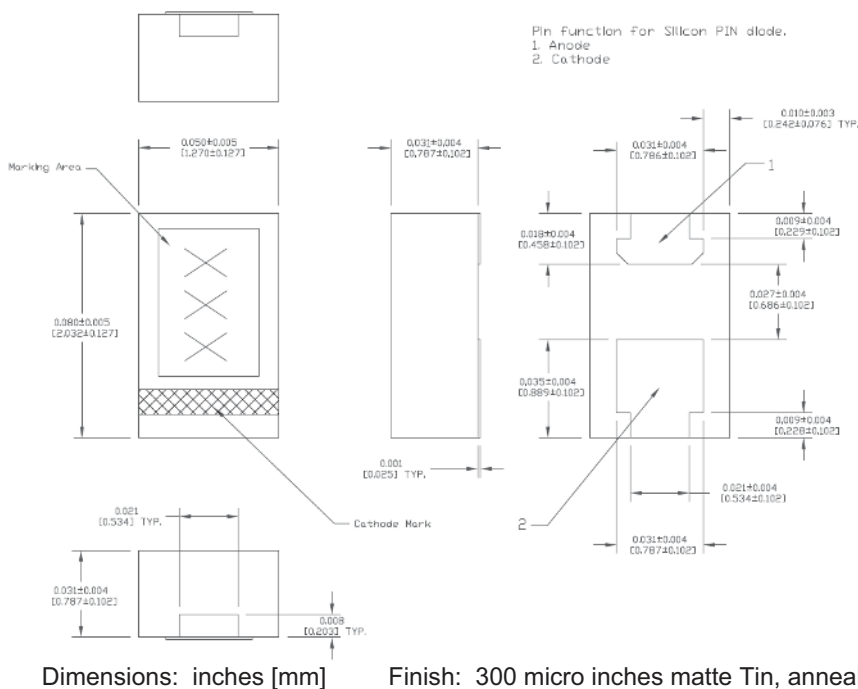
## Input Return Loss



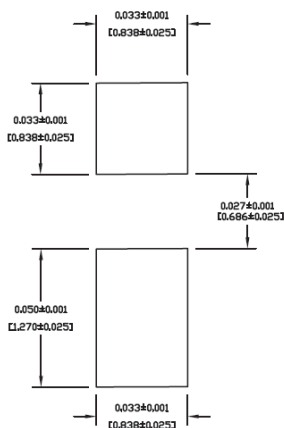
## Series Resistance vs. Current



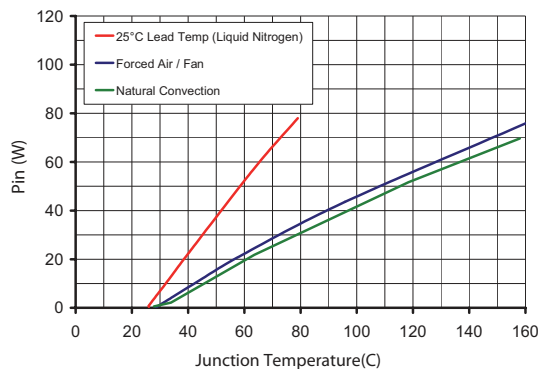
## Package Outline



## Printed Circuit Board Layout



## Junction Temperature vs Power 20 Mil PCB Mounted on Heat Sink 25°C Ambient 1.3 GHz



**Aeroflex / Metelics Inc.**

Aeroflex Microelectronic Solutions  
975 Stewart Drive  
Sunnyvale, CA 94085  
TEL: 408-737-8181

54 Grenier Field Road  
Londonderry, NH 03053  
TEL: 603-641-3800

**ISO 9001: 2008 certified companies**

**Sales**

888-641-SEMI (7364)  
metelics-sales@aeroflex.com

***[www.aeroflex.com/Microwave](http://www.aeroflex.com/Microwave) [www.aeroflex.com/Metelics](http://www.aeroflex.com/Metelics)***



Aeroflex / Metelics, Inc. reserves the right to make changes to any products and services herein at any time without notice. Consult Aeroflex or an authorized sales representative to verify that the information in this data sheet is current before using this product. Aeroflex does not assume any responsibility or liability arising out of the application or use of any product or service described herein, except as expressly agreed to in writing by Aeroflex; nor does the purchase, lease, or use of a product or service from Aeroflex convey a license under any patent rights, copyrights, trademark rights, or any other of the intellectual rights of Aeroflex or of third parties.

Copyright 2011 Aeroflex / Metelics. All rights reserved.



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