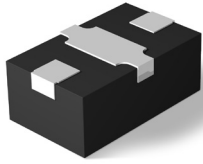


# MSWSS-040-30

## PIN DIODE SHUNT SWITCH ELEMENT



(2012)  
Non-Hermetic



### Description

Surface mount medium power series shunt switch. The shunt device is based on Metelics StripLine PIN™ which give broad band high isolation. This device can be surface mounted onto a PC board to give a Low insertion loss and high Isolation switch. The device can handle up to 20 watts of power. Hot switching will depend on the speed of switch driver.

### Features

- Surface mountable series shunt switch
- Low insertion loss <0.5 dB to 3 GHz
- High Isolation dB typical > 40 dB out to 3 GHz

### Maximum Ratings

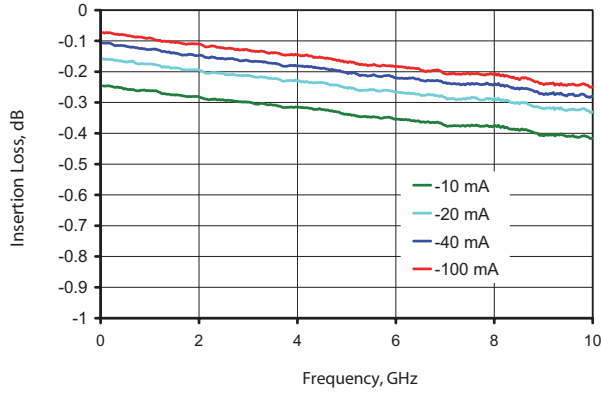
RATING	LIMITS	UNITS
$V_R$	500	V
$I_F$	500	mA
$\theta_{JC}$	30	°C/W
$T_J$	+150	°C
$T_{STG}$	-65 to +125	°C
$T_{SOLDER}$	+260 °C per JEDEC STD-J-20C	

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

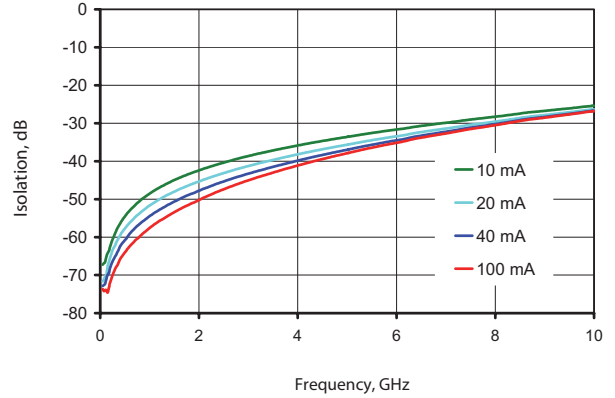
SYMBOL	TEST CONDITIONS		MIN	TYPICAL	MAX	UNITS	
$V_{BR}$	$I_R = 10\ \mu\text{A}$		500	—	—	V	
$I_R$	$V_R = 80\ \text{V}$		---	---	100	nA	
$V_F$	$I_F = 100\ \text{mA}$		---	---		V	
$C_J$	$V_R = 10\ \text{V}$	F = 1 MHz	Shunt	---	0.15	---	pF
			Series	---	0.15	---	
$R_S$	$I_F = 100\ \text{mA}$	F = 100 MHz	Shunt	---	0.8	1.0	$\Omega$
			Series	---	0.8	1.0	
$\tau$	$I_F = 10\ \text{mA}$	$I_R = 6\ \text{mA}$	50%	Shunt	---	2200	ns
				Series	---	1500	
W	I-layer		Shunt	---	80	um	
			Series	---	80		---
$I_L$	Bias = -50 mA		F < 3.0 GHz	---	0.3	0.5	dB
			F < 8.0 GHz	---	0.6	0.8	
$I_{so}$	Bias = 50 mA		F < 3.0 GHz	-45	-55	---	dB
			F < 8.0 GHz	-30	-35	---	



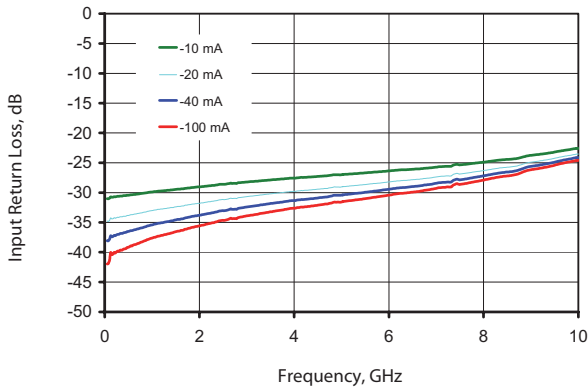
## Insertion Loss



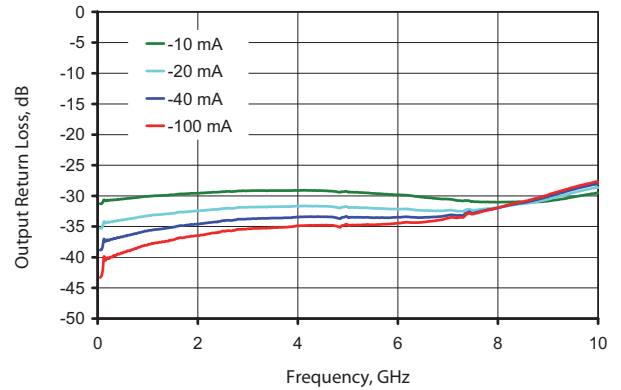
## Isolation



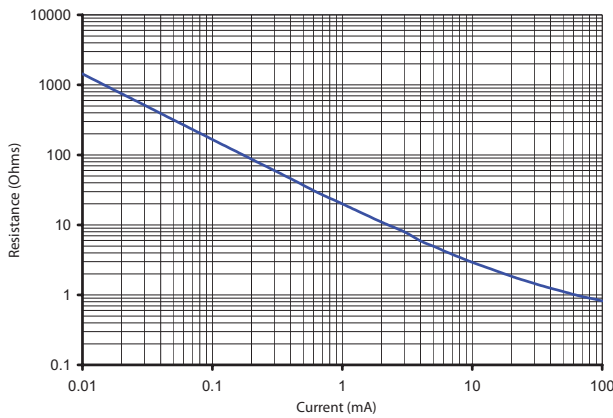
## Input Return Loss



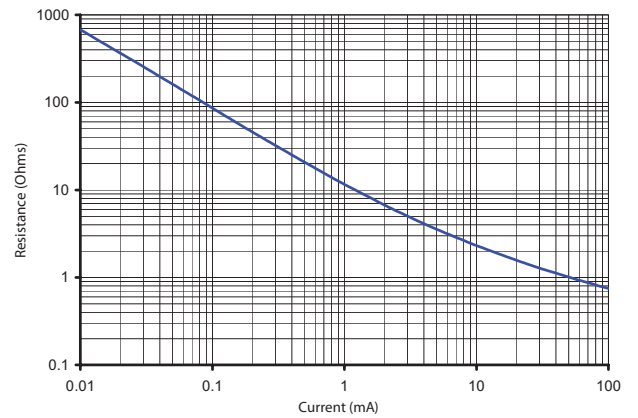
## Output Return Loss



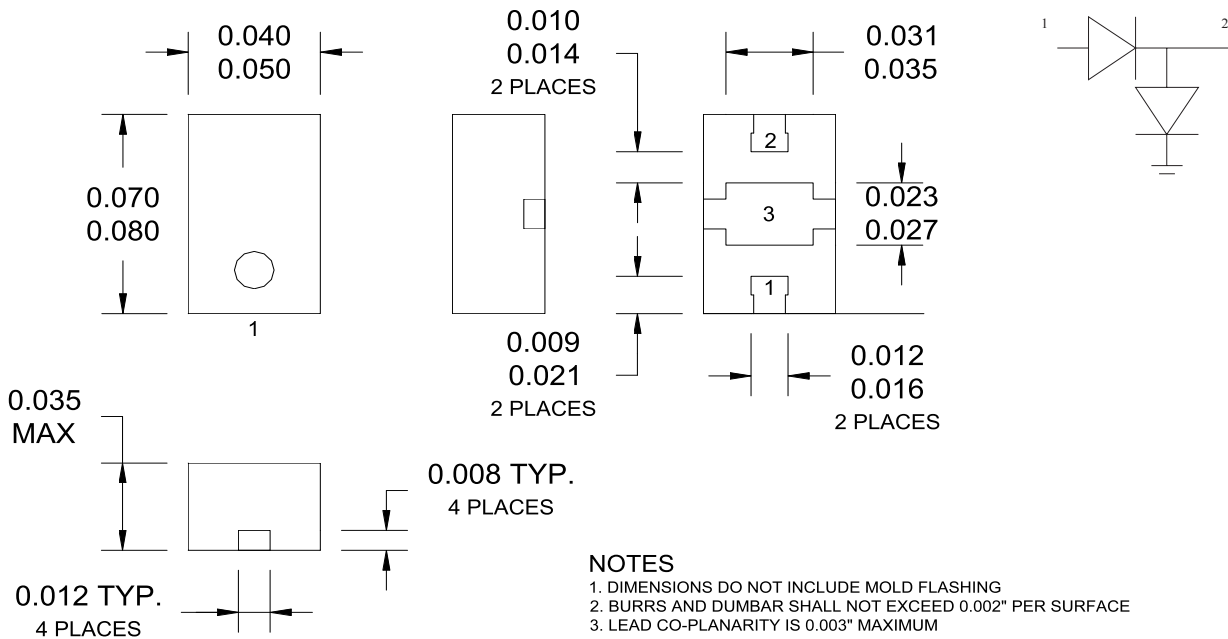
## R vs I Series Diode



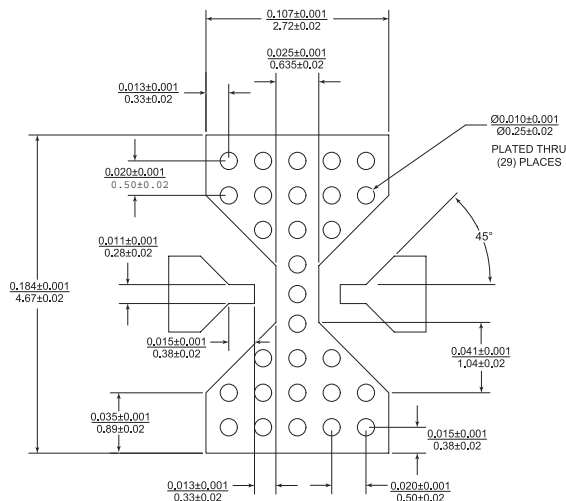
## R vs I Shunt Diode



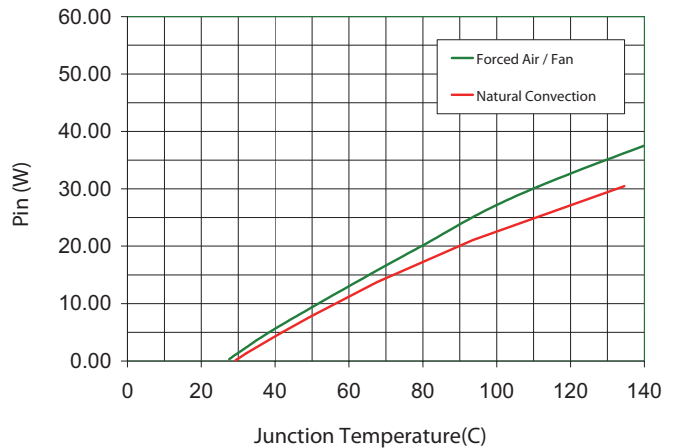
## Package Outline



## Printed Circuit Board Layout



## Junction Temperature vs Pin Mounted on Heatsink 25°C Amb 1.3 GHz



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