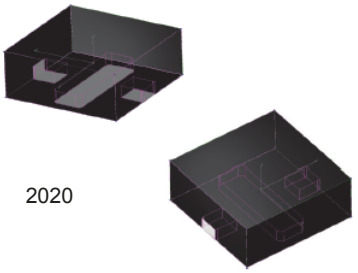
MSWSH-020-24

PIN Diode Shunt Switch Element

Rev. V1

Features

- Supports up to 25 W Power @ 5 GHz
- Low Insertion Loss:
  - 0.2 dB to 2.7 GHz
  - 0.4 dB to 10.0 GHz
- High Isolation:
  - 25 dB to 10.0 GHz
- RoHS* Compliant



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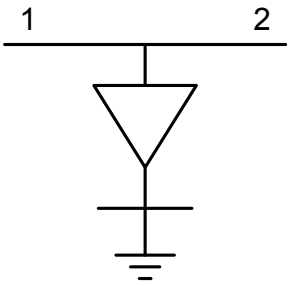
Description

A broadband, high linearity, medium power shunt switch element in a 2 mm DFN package.

This device is designed for wireless telecommunications infrastructure and test instrument applications. It is also suited for other applications in 0.05 ~ 17 GHz broad band and 24 GHz narrow band with tuning.

Pin Out / Schematic



Ordering Information

Part Number	Package
MSWSH-020-24	3000 piece reel

Electrical Specifications: T_A = +25°C

Parameter	Test Conditions	Units	Min.	Typ.	Max.
Breakdown Voltage (V_B)	I_R = 10 µA	V	200	—	—
Insertion Loss (I_L)	V_R = 10 V 2.7 GH 10.0 GHz	dB	—	0.20 0.60	0.30 0.75
Isolation (I_{SO})	I_F = 100 mA 2.7 GHz 10.0 GHz	dB	27 23	30 25	—
Input Return Loss (I_{RL})	V_R = 10 V 2.7 GHz 10.0 GHz	dB	20 9	25 12	—
I-Region (W)	I-Layer	µm	—	15	—
Minority Carrier Lifetime (T_L)	I_F = 10 mA, I_R = 6 mA, @ 50%	ns	—	600	—

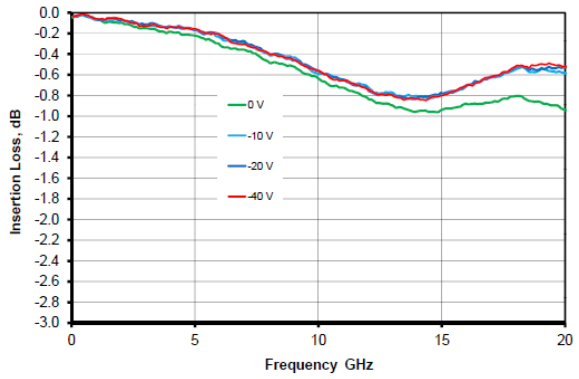
* Restrictions on Hazardous Substances, European Union Directive 2011/65/EU.

Absolute Maximum Ratings

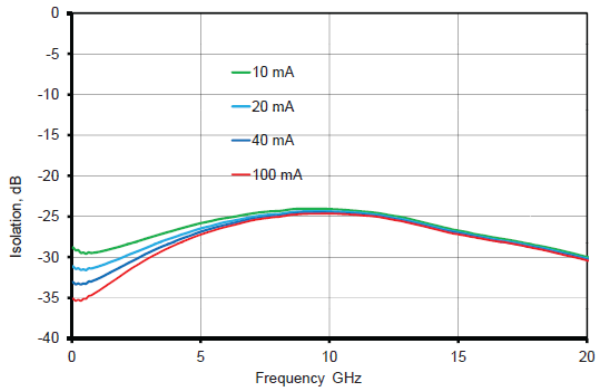
Parameter	Absolute Maximum
Breakdown Voltage	200 V
Forward Current	150 mA
Thermal Resistance	30°C/W
Junction Temperature	+175°C
Storage Temperature	-65°C to +150°C
Assembly Temperature	+260°C, Per JEDEC STD-J-20C

Typical Performance Curves

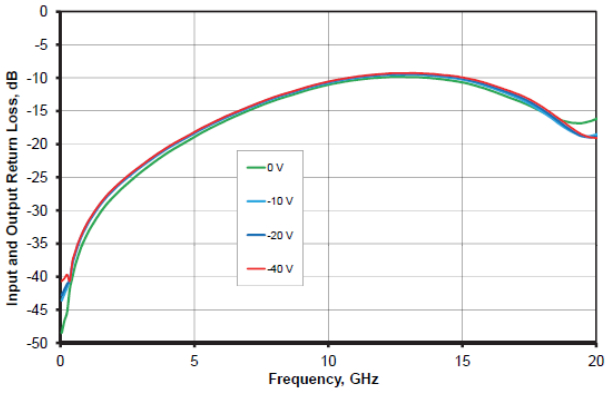
Insertion Loss



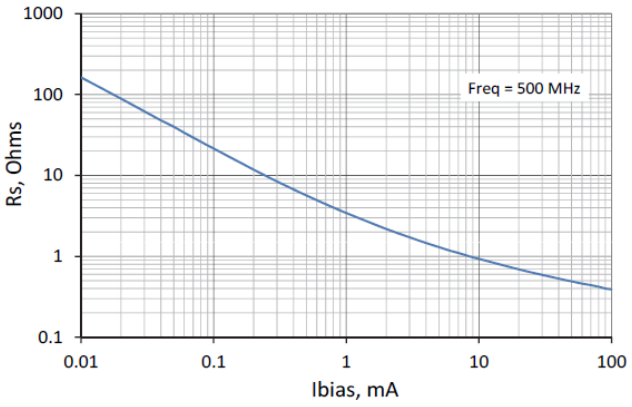
Isolation



Input Return Loss[1]

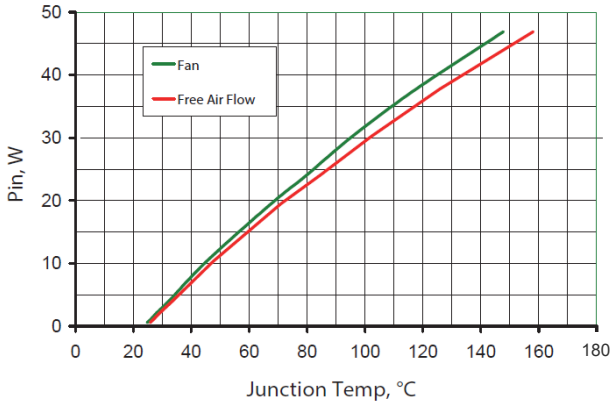


Diode Resistance vs. Current

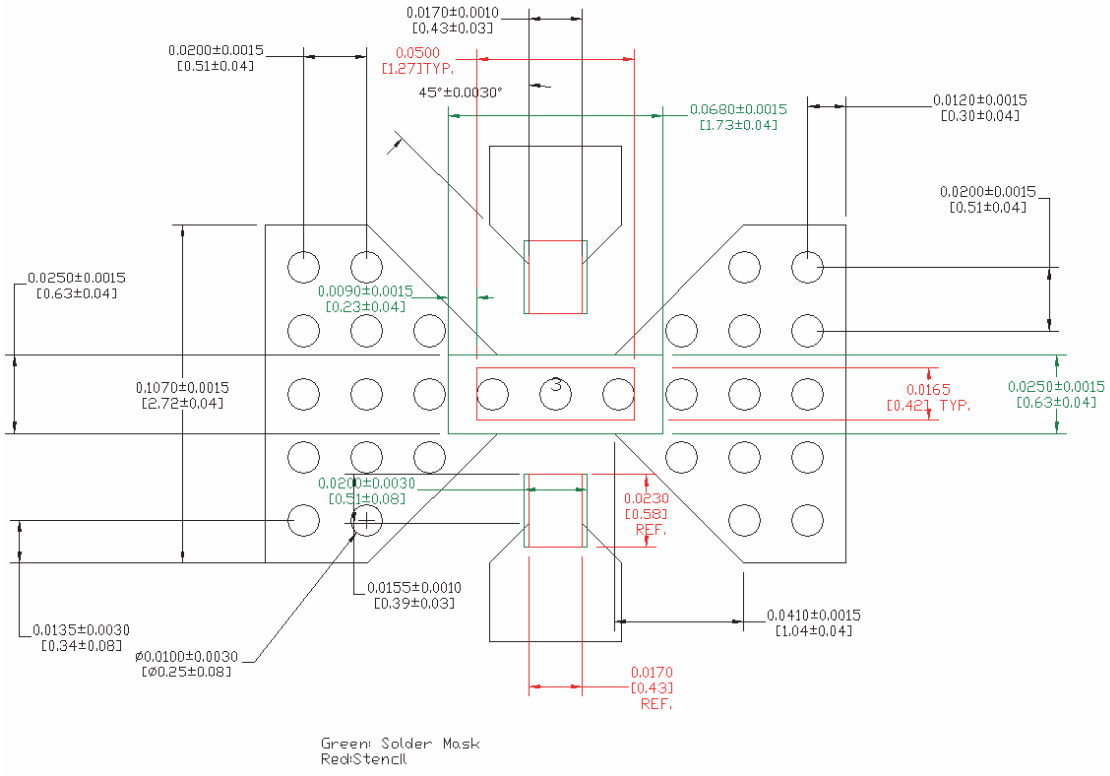


1. Input return loss can be reduced to less than -15 dB with the use of stub tuner printed on the circuit board. Insertion loss is also improve by 0.25 dB at 15 GHz with this tuner.

Junction Temperature vs. Power, 1.3 GHz, T_A = +25°C, 20 mil PCB Mounted on Heatsink



Printed Circuit Board Layout



Outline (2020)