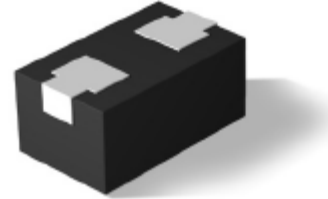


Features

- Small Size (40 x 24 mils)
- Broadband Performance up to 3 GHz
- Supports up to 10 W Power
- Low Insertion Loss, 0.15 dB
- Cost effective choice for switch applications
- RoHS* Compliant



Applications

- ISM

Description

The MSWSE-010-15S is a PIN diode switch element designed for medium incident power applications, up to 10 W CW. It has low insertion loss and medium isolation below 3 GHz.

0402 (Molded Plastic DFN Package)

Electrical Specifications: $T_A = +25^\circ\text{C}$

| Parameter | Test Conditions | Min. | Typ. | Max. | Units |
|----------------------|---|---------|--------------|------------|----------|
| Breakdown Voltage | $I_R = 10 \mu\text{A}$ | 200 | — | — | V |
| Forward Voltage | $I_F = 50 \text{ mA}$ | — | 870 | 950 | mV |
| Junction Capacitance | $V_R = -50 \text{ V}, 1 \text{ MHz}$ | — | 0.13 | — | pF |
| Total Capacitance | $V_R = -50 \text{ V}, 1 \text{ MHz}$ | — | 0.17 | 0.22 | pF |
| Series Resistance | $I_F = 30 \text{ mA}, 500 \text{ MHz}$ $I_F = 100 \text{ mA}, 500 \text{ MHz}$ | — | 0.8 0.6 | 1.0 0.8 | Ω |
| Lifetime | $I_F = 10 \text{ mA}, I_R = 6 \text{ mA}, 50\%$ | — | 650 | 900 | ns |
| I-Region | I-Layer | — | 10 | — | mm |
| Insertion Loss | $I_F = 50 \text{ mA}, 1 \text{ GHz}$ $I_F = 50 \text{ mA}, 2 \text{ GHz}$ | — | 0.05 0.10 | — 0.25 | dB |
| Input Return Loss | $I_F = 50 \text{ mA}, 1 \text{ GHz}$ $I_F = 50 \text{ mA}, 2 \text{ GHz}$ | 25 — | 30 25 | — | dB |
| Isolation | $V_R = 50 \text{ V}, 1 \text{ GHz}$ $V_R = 50 \text{ V}, 2 \text{ GHz}$ | 15 — | 20 15 | — | dB |

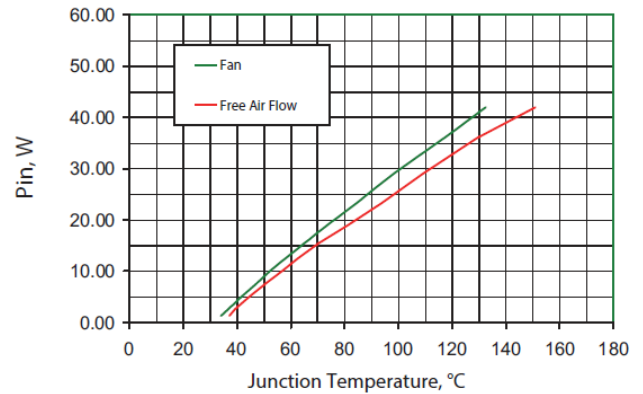
* Restrictions on Hazardous Substances, compliant to current RoHS EU directive.

Absolute Maximum Ratings^{1,2}

| Parameter | Absolute Maximum |
|----------------------|-------------------------------|
| Breakdown Voltage | 200 V |
| Forward Current | 200 mA |
| Thermal Resistance | 35 W CW |
| Junction Temperature | +175°C |
| Storage Temperature | -55°C to +150°C |
| Solder Temperature | +260°C per JEDEC STD-J-20C |

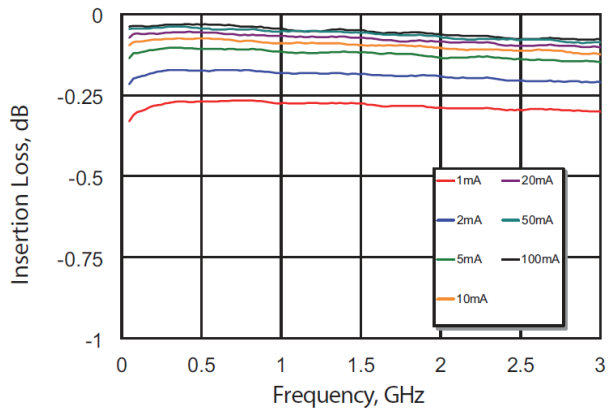
1. Exceeding any one or combination of these limits may cause permanent damage to this device.
2. MACOM does not recommend sustained operation near these survivability limits.

Junction Temperature vs. Input Power Mounted on Heatsink $T_A = 25^\circ\text{C}$, 1.3 GHz

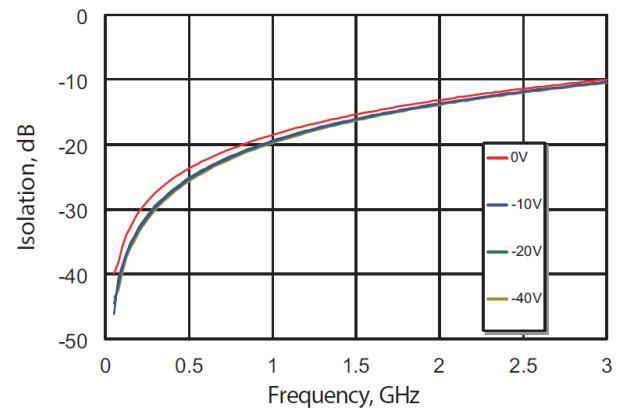


Typical RF Performance Curves @ +25°C

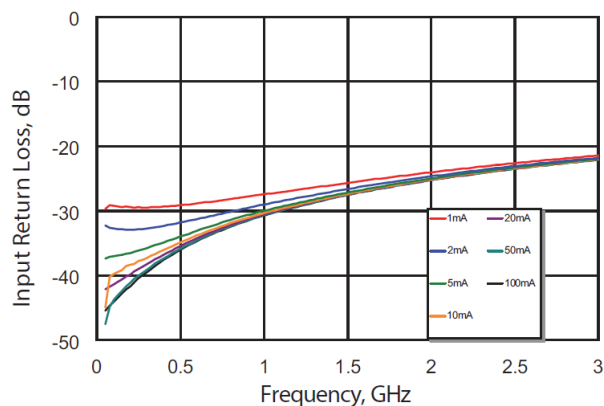
Insertion Loss



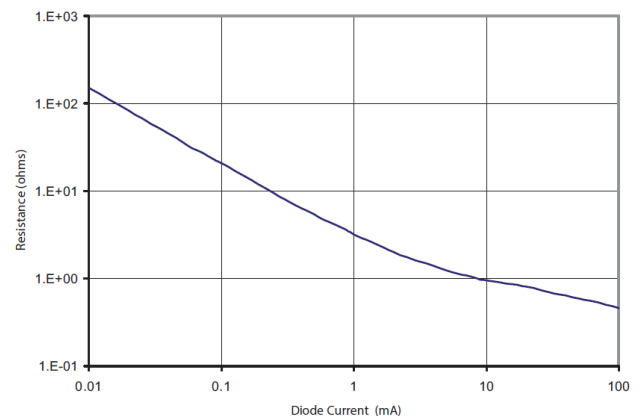
Isolation



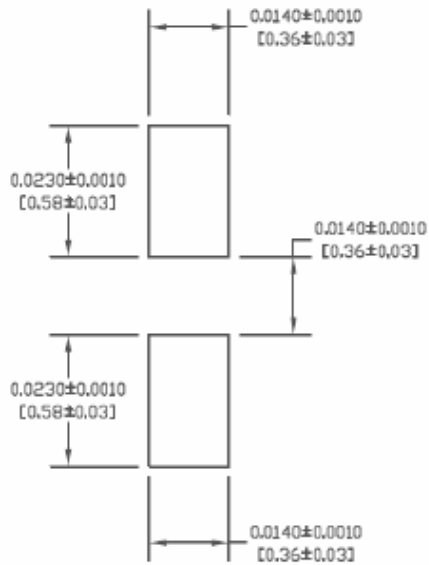
Input Return Loss



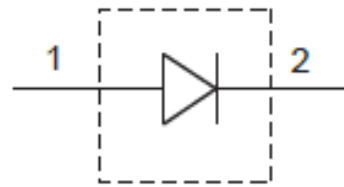
Series Resistance vs. Current



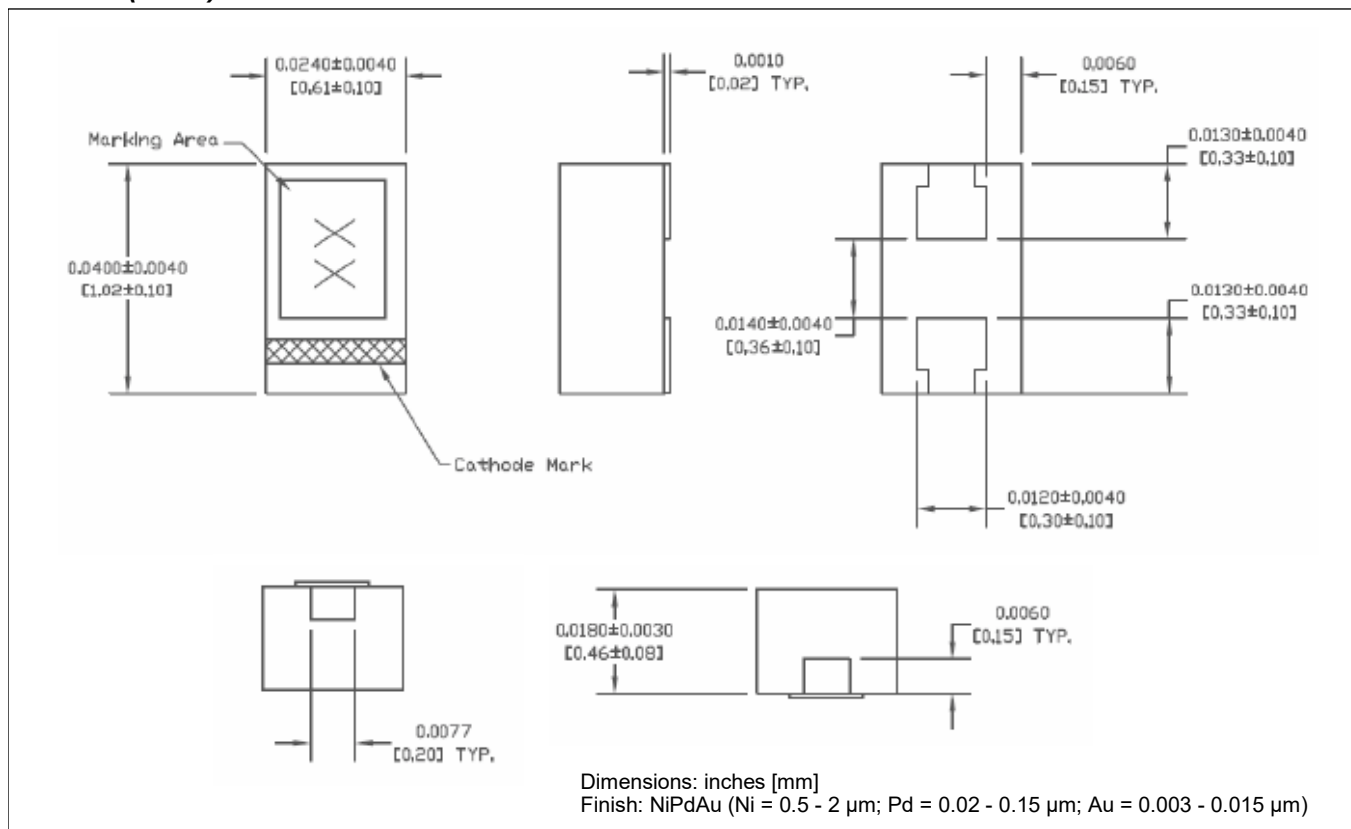
PCB Layout



Schematic



Outline (0402)



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