

## Features

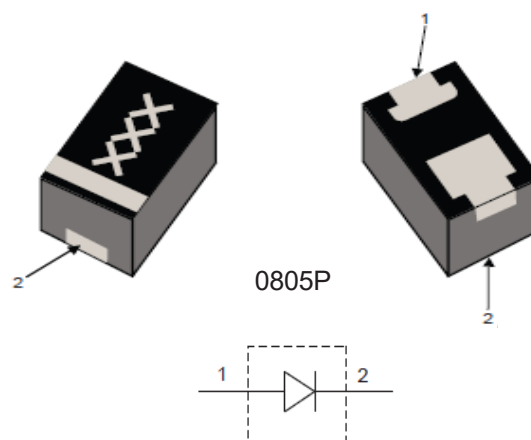
- Supports up to 40 W Power
- Broadband Performance up to 2 GHz
- Low Insertion Loss
- Medium Isolation
- RoHS\* Compliant

## Applications

- ISM

## Description

The MSWSE-044-010 is a PIN diode SPST switch element designed for medium incident power applications, up to 40 W C.W. It has low insertion loss and medium isolation below 2 GHz.



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

Parameter	Test Conditions	Min.	Typ.	Max.	Units
Breakdown Voltage	$I_R = 10 \mu\text{A}$	300	—	—	V
Forward Voltage	$I_F = 50 \text{ mA}$	—	900	1000	mV
Total Capacitance	$V_R = 10 \text{ V}$ , 1 MHz	—	0.3	0.4	pF
Series Resistance	$I_F = 100 \text{ mA}$ , 500 MHz	—	0.5	0.7	$\Omega$
Lifetime	$I_F = 10 \text{ mA}$ , $I_R = 6 \text{ mA}$ , 50%	—	1200	—	ns
I-Region	I-Layer	—	40	—	$\mu\text{m}$
Insertion Loss	$I_F = 10 \text{ mA}$ , <1 GHz $I_F = 10 \text{ mA}$ , <2 GHz	—	0.20 0.25	0.30 0.35	dB
Isolation	$V_R = 50 \text{ V}$ , <1 GHz $V_R = 50 \text{ V}$ , <2 GHz	11 —	14 10	—	dB

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

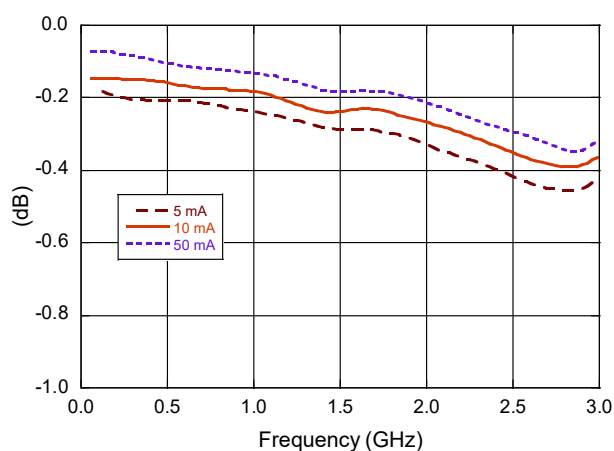
## Absolute Maximum Ratings<sup>1,2</sup>

Parameter	Absolute Maximum
Breakdown Voltage	300 V
Forward Current	200 mA
Thermal Resistance	20°C/W
Junction Temperature	+175°C
Storage Temperature	-55°C to +150°C
Solder Temperature	+260°C, per JEDEC STD-J-20C

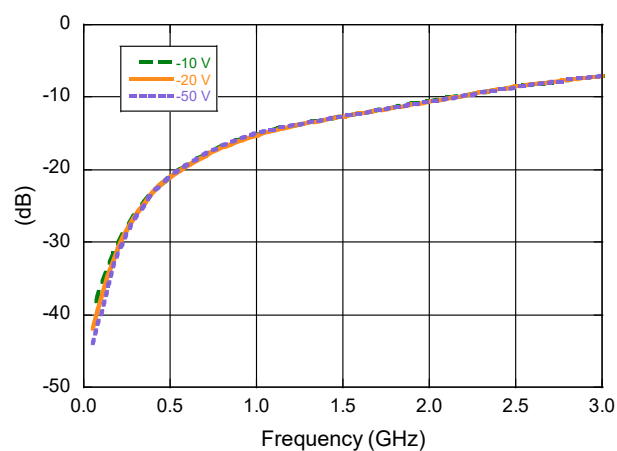
1. Exceeding any one or combination of these limits may cause permanent damage to this device.
2. MACOM does not recommend sustained operation near these survivability limits.

## Typical RF Performance Curves @ +25°C

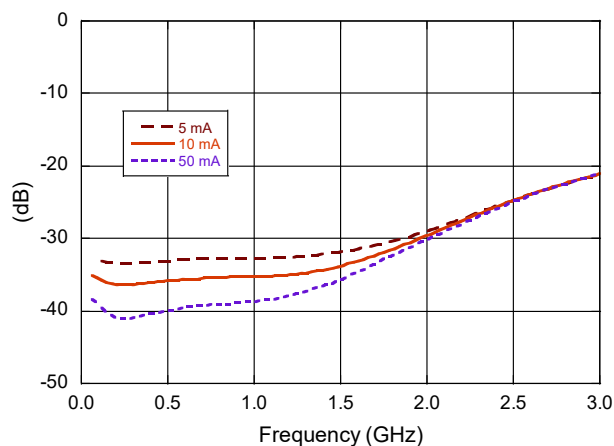
### Insertion Loss



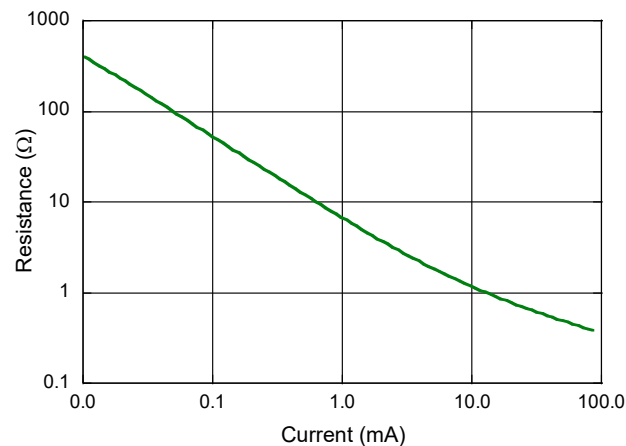
### Isolation



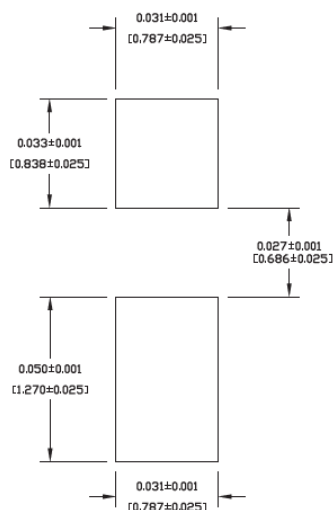
### Input Return Loss



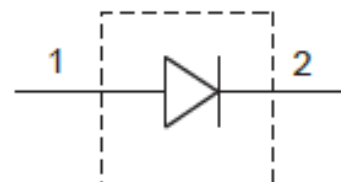
### Series Resistance vs. Current



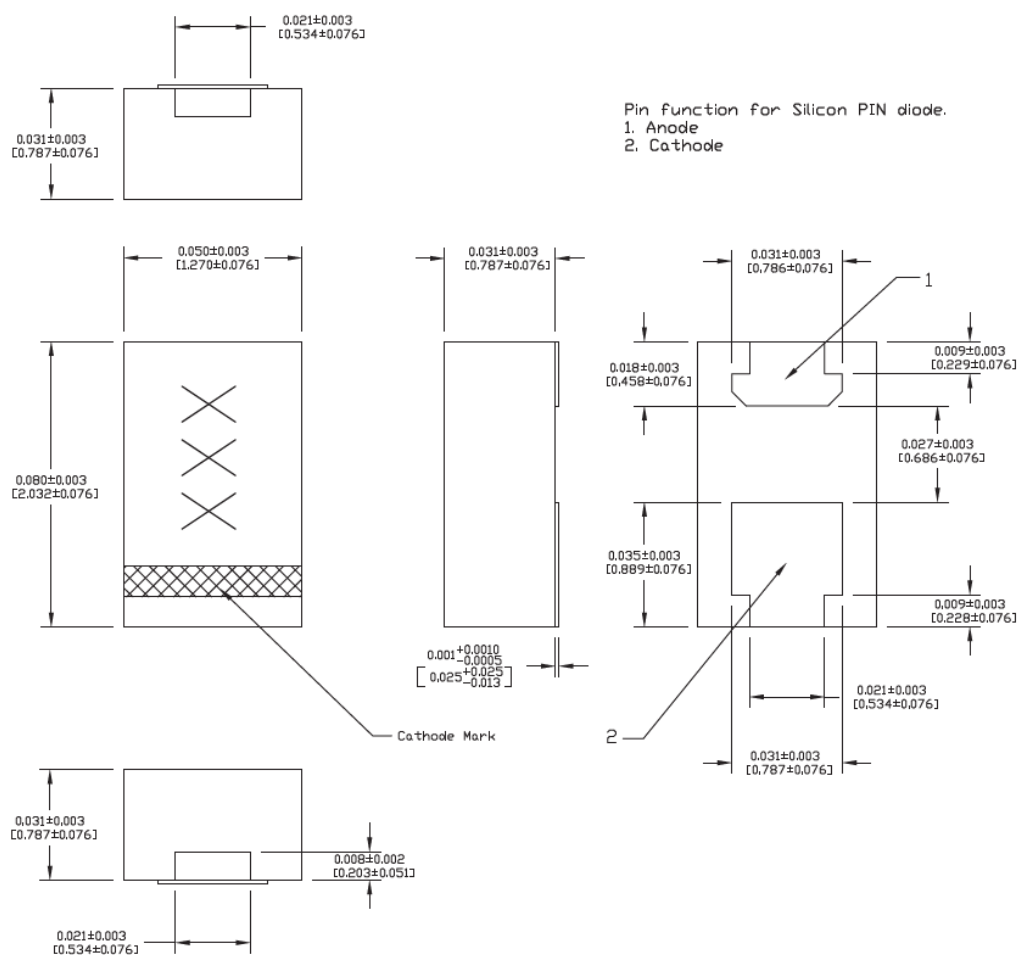
## PCB Layout



## Schematic



## Outline (0805P)



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