

# SURFACE MOUNT PIN DIODE

UPP9401

**POWERMITE™** Package

Commercial Two-Way Radio  
Antenna Switch Diode

## FEATURES

- High Power Surface Mount Package
- Specified Low Distortion
- Low Bias Current Requirements
- High Zero Bias Impedance
- Compatible with Automatic Insertion Equipment
- Very Low Inductance and Capacitance
- Full Metallic Bottom Eliminates Flux Entrapment
- Integral Heat Sink/Locking Tabs

## DESCRIPTION

With high isolation, low loss, and low distortion characteristics, this Microsemi Powermite PIN diode is perfect for two-way radio antenna switch applications where size and power handling capability are critical.

Its advantages also include the low forward bias resistance and high zero bias impedance that are essential for low loss, high isolation and wide bandwidth antenna switch performance.

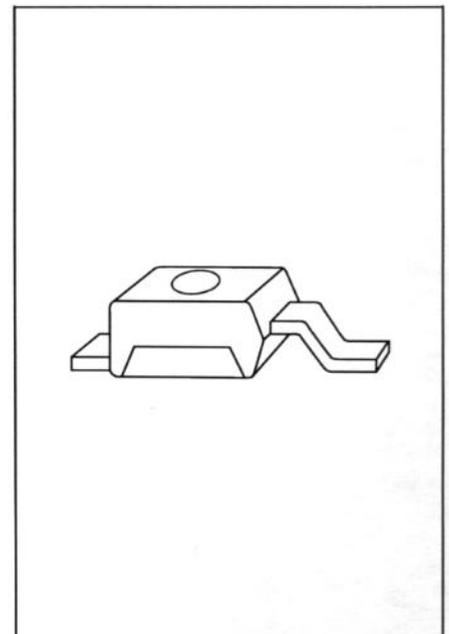
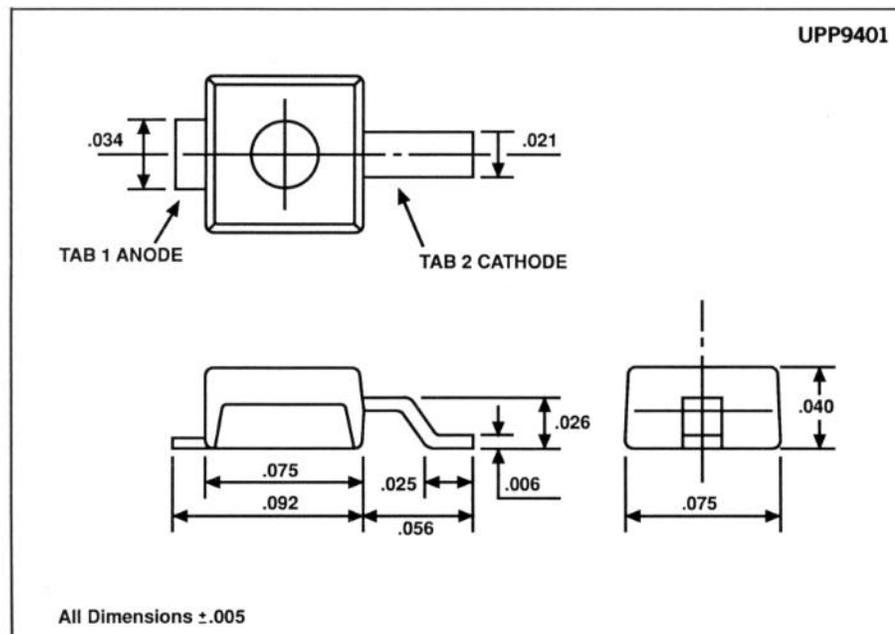
The Powermite package's full metallic bottom eliminates the possibility of solder flux entrapment during assembly, and its unique locking tab acts as an integral heat sink. Its innovative design makes this device ideal for use with automatic insertion equipment.

## ABSOLUTE MAXIMUM RATINGS

Maximum Reverse Voltage	50V
Average Power Dissipation @ $T_{TAB 1} = 75^{\circ}\text{C}$	2.5W*
Thermal Resistance Junction to Tab	30°C/W
Thermal Resistance Junction to Bottom	10°C/W
Operating and Storage Temperature	-55°C to +150°C

\*WHEN MOUNTED ON A PC BOARD WITH 2 OZ. COPPER.

## MECHANICAL SPECIFICATIONS



**Microsemi Corp.**  
Watertown

ELECTRICAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$  unless noted)

TEST	CONDITIONS	MIN	TYP	MAX
Series Resistance $R_S$ , Ohms	$F = 100\text{MHz}$ $I_F = 50\text{mA}$	—	0.75	1.0
Capacitance $C_T$ , pF	$F = 100\text{MHz}$ $V_R = 0\text{V}$	—	0.75	1.0
Parallel Resistance $R_P$ , Ohms	$F = 100\text{MHz}$ $V = 0\text{V}$	5K	10K	—
Carrier Lifetime $\tau$ , $\mu\text{s}$	$I_F = 10\text{mA}$	1.0	2.0	—
Transmit Harmonic Distortion, -dB	$P_{in} = 50\text{W}$ $F = 50\text{MHz}$ $I_F = 50\text{mA}$	80	—	—
Receive 3rd Order Harmonic Distortion, -dB	$F = 100\text{MHz}$ $V = 0\text{V}$ $F_A = 50\text{MHz}$ $F_B = 51\text{MHz}$	60	—	—
Voltage Rating $V_R$ , Volts	$I_R = 10\ \mu\text{A}$	50	—	—
Forward Voltage $V_F$ , Volts	$I_F = 50\text{mA}$	—	—	1.0

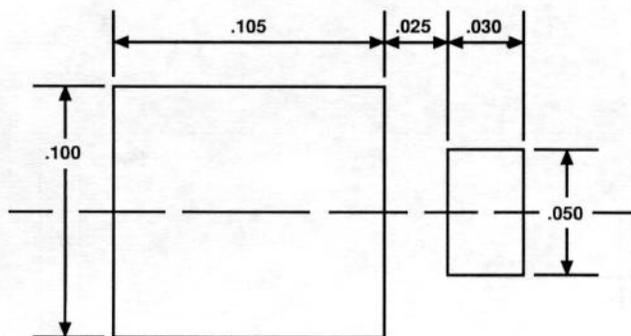


Figure 1. Suggested Mounting Pad Dimensions