

**SURFACE MOUNT PACKAGE PIN DIODE**  
**400 V 2.5 WATT**  
 Commercial Two-Way Radio  
 Antenna Switch Diode

**UPP1001**  
**UPP1002**  
**UPP1004**

**FEATURES**

- . High Power Surface Mount Package
- . 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**

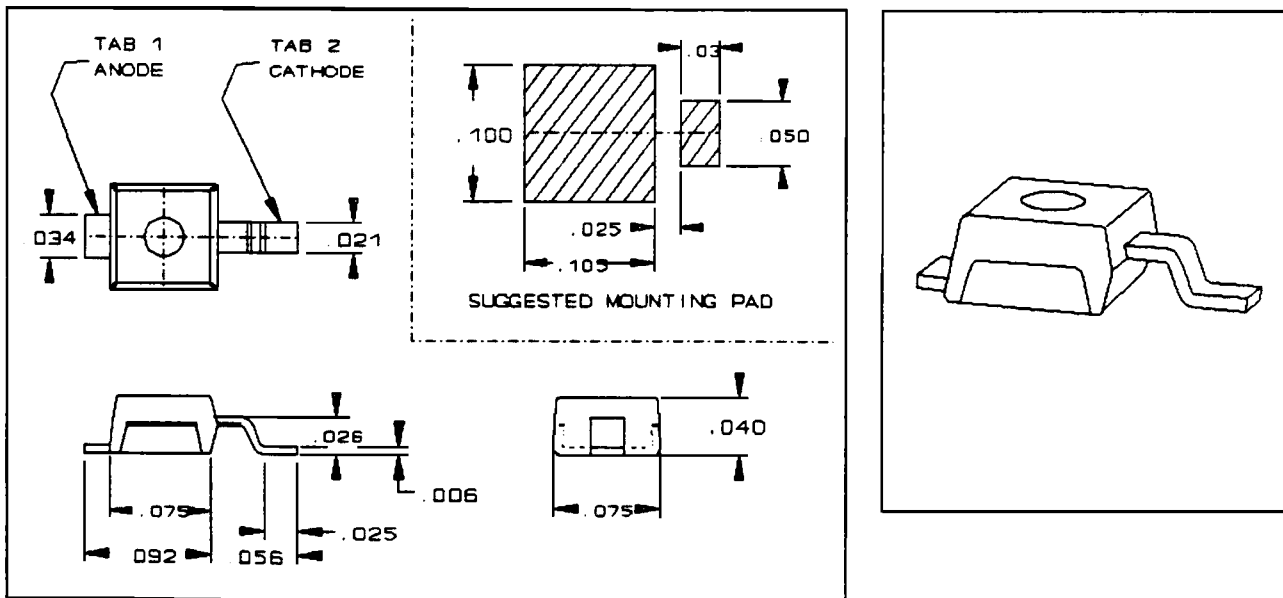
Maximum Reverse Voltage.....100/200/400V  
 Average Power Dissipation @  $T_{TAB 1} = 75^{\circ}C$ .....2.5W\*  
 Thermal Resistance Junction to Tab.....30°C/W  
 Thermal Resistance Junction to Bottom.....10°C/W  
 Operating and Storage Temperature.....-55°C to +150°C

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

**VOLTAGE RATINGS (25°C)**

Reverse Voltage ( $V_R$ ) - Volts $I_R = 10\mu A$	Part type
100V	UPP1001
200V	UPP1002
400V	UPP1004

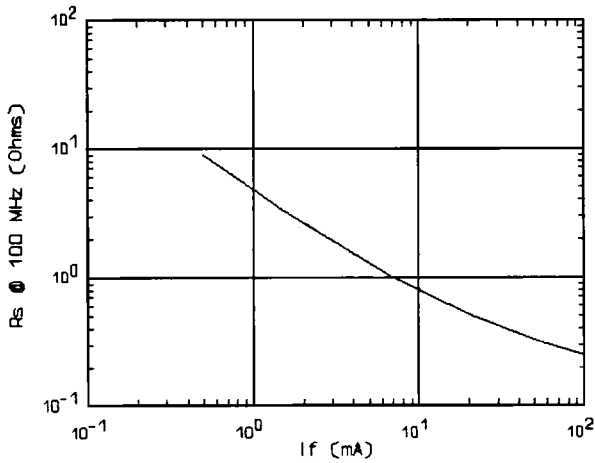
**MECHANICAL SPECIFICATIONS**



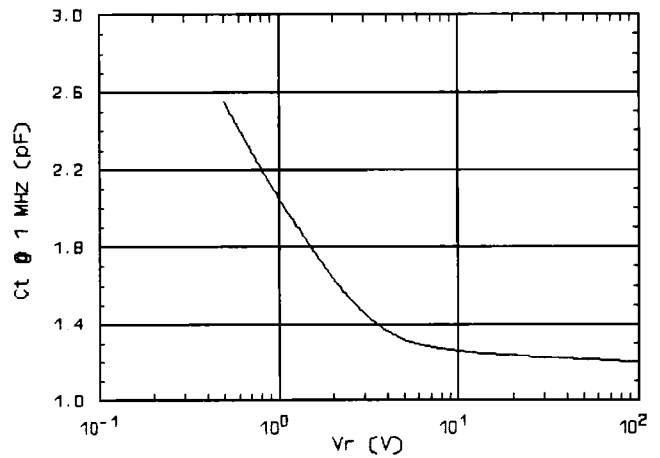
# ELECTRICAL SPECIFICATIONS (25°C)

Test	Min.	Typ.	Max.	Units	Conditions
Diode Resistance $R_s$		0.75	1.0	$\Omega$	100MHz, 10mA
Diode Resistance $R_s$		0.35	0.45	$\Omega$	100MHz, 50mA
Capacitance $C_T$		1.2	1.6	pF	1MHz, 100V
Reverse Current $I_R$		0.1	10	$\mu A$	@ Rated Voltage
Carrier Lifetime $t$	2	3.5		$\mu s$	10mA
Parallel Resistance $R_p$	5	8		K $\Omega$	100MHz, 0V
Forward Voltage $V_f$		0.75	1.0	V	50mA

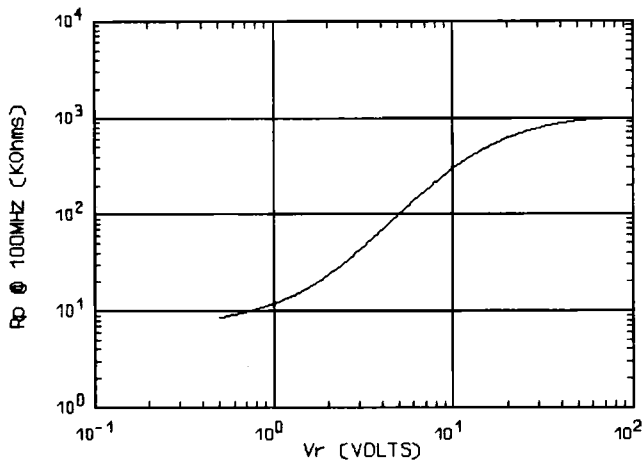
UPP1001, 2, 4  
TYPICAL



UPP1001, 2, 4  
TYPICAL



UPP1001, 2, 4  
TYPICAL



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