



UM9401F

CERAMIC SURFACE MOUNT PIN DIODE

DESCRIPTION

With high isolation, low loss, and low distortion characteristics, this Microsemi ceramic package 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. Its square design makes this device ideal for use with automatic insertion equipment.

IMPORTANT: For the most current data, consult MICROSEMI's website: <http://www.microsemi.com>

ABSOLUTE MAXIMUM RATINGS AT 25 °C (UNLESS OTHERWISE SPECIFIED)

Maximum reverse voltage	50 V
Average power dissipation contact surfaces @ 25 °C	4.0 W
Thermal resistance 25 °C Contacts Free Air	37.5 °C/W 1.5 W
Operating and storage temperature	-65 °C to +175 °C

KEY FEATURES

- High power surface mount package
- Specified low distortion, low loss
- Low bias current requirements
- High zero bias impedance
- Very low inductance and capacitance
- Passivated PIN diode chip
- Hermetically sealed
- Compatible with automatic insertion equipment

APPLICATIONS/BENEFITS

- RoHS compliant packaging available: use UMX9401F





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ELECTRICAL PARAMETERS @ 25°C (unless otherwise specified)

Parameter	Symbol	Conditions	Min	Typ.	Max	Units
Series resistance	R_s	$F = 100 \text{ MHz}$ $I_F = 50 \text{ mA}$		0.5	0.75	Ohms
Capacitance	C_T	$F = 1 \text{ MHz}$, $V_R = 50 \text{ V}$		0.75	0.90	pF
Parallel resistance	R_P	$F = 100 \text{ MHz}$, $V_R = 0 \text{ V}$	5k	10k		Ohms
Carrier lifetime	τ	$I_F = 10 \text{ mA}$	2.0	4.0		μs
Transmit Harmonic distortion		$P_{IN} = 50 \text{ W}$ $F = 50 \text{ MHz}$ $I_F = 50 \text{ mA}$	80			-dB
Receive 3rd order harmonic distortion		$F = 100 \text{ MHz}$ $V = 0 \text{ V}$ $F_A = 50 \text{ MHz}$ $F_B = 51 \text{ MHz}$	60			-dB
Voltage rating	V_R	$I_R = 1 \mu\text{A}$	50			V
Forward Voltage	V_F	$I_F = 100 \text{ mA}$			1.0	V

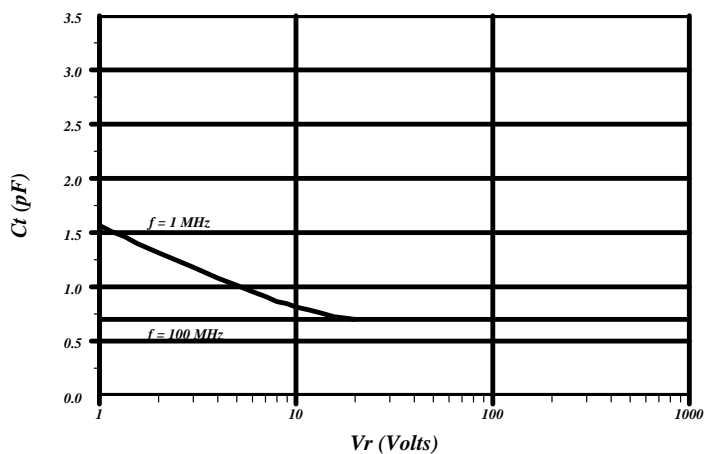
UM9401F



UM9401F

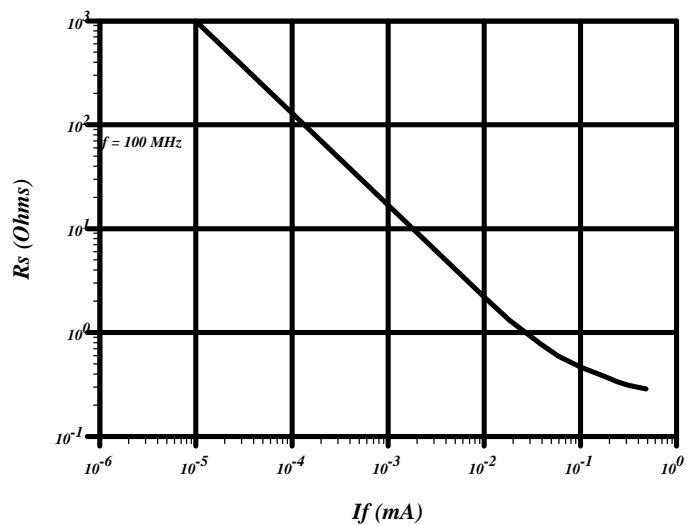
CERAMIC SURFACE MOUNT PIN DIODE

Ct versus Vr
TYPICAL



UM9401F

Rs versus If
TYPICAL



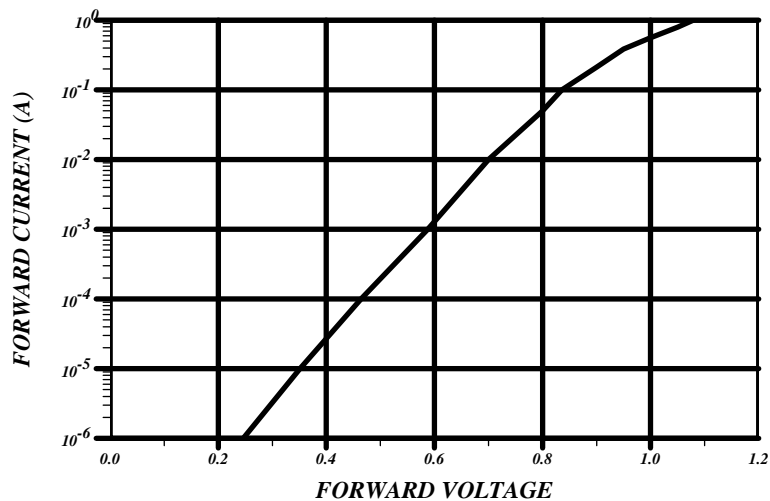
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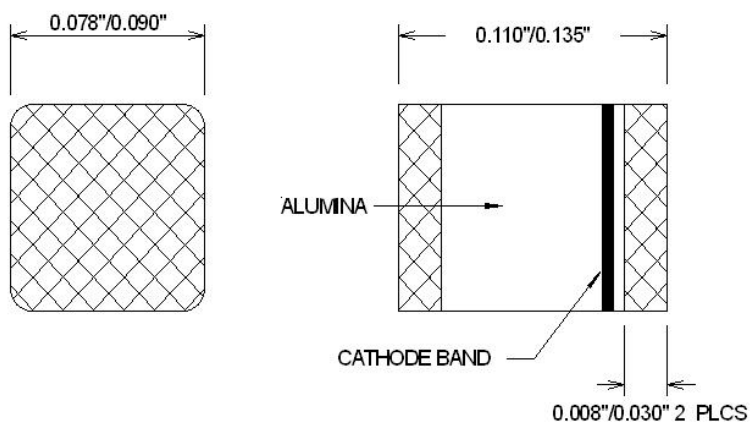
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CERAMIC SURFACE MOUNT PIN DIODE

FORWARD VOLTAGE versus CURRENT
TYPICAL



UM9401F OUTLINE

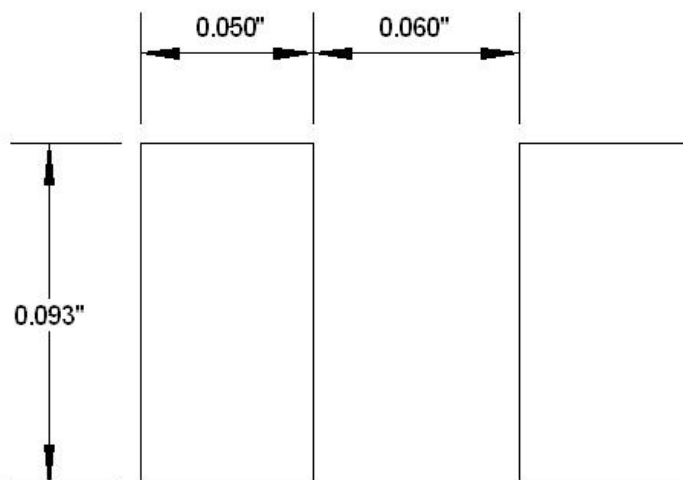


UM9401F FOOTPRINT



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NOTES:

1. These dimensions will match the terminals and provide for additional solder fillets at the outboard ends at Least as wide as the terminals themselves, assuming accuracy of placement within 0.005"
2. If the mounting method chosen requires use of an adhesive separate from the solder compound, a round (or square) spot of cement should be centrally located.



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NOTES:

www.Microsemi.com

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