



Powermite Package Commercial Two-Way Radio Antenna Switch Diode

DESCRIPTION

This Microsemi Powermite PIN diode is perfect for two-way radio antenna switch applications where size and power handling capability are critical with its high isolation, low loss and low distortion characteristics. 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. It is an ideal selection for applications requiring low profile and high-density mounting and is also RoHS compliant. The Powermite package provides a full-metallic bottom that eliminates the possibility of solder flux entrapment during assembly, which in combination with its unique locking tab acts as an efficient heat path to the mounting surface. Its innovative design makes this device ideal for use with automatic insertion equipment. Microsemi also offers numerous other products to meet higher and lower power voltage regulation applications.

Important: For the latest information, visit our website <http://www.microsemi.com>.

FEATURES

- High power surface mount package with very low thermal resistance.
- Specified low distortion.
- Low bias current requirements.
- High zero bias impedance.
- Full metallic bottom eliminates flux entrapment.
- Integral heat sink/locking tabs.
- RoHS compliant.

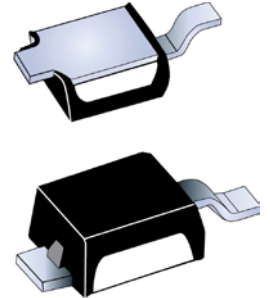
APPLICATIONS / BENEFITS

- Two-way radio antenna switch.
- Low forward bias resistance.
- Low loss high isolation for wide bandwidth performance.
- Small size DO-216 package.
- Compatible with automatic insertion equipment.
- Very low inductance and capacitance.

MAXIMUM RATINGS

Parameters/Test Conditions	Symbol	Value	Unit
Junction and Storage Temperature	T_J and T_{STG}	-55 to +150	°C
Thermal Resistance Junction-to-Case	$R_{\theta JC}$	10	°C/W
Steady-State Power Dissipation @ $T_{TAB1} = 75$ °C ⁽¹⁾	P_D	2.5	W
Reverse Voltage	V_R	50	V
Solder Temperature @ 10 s	T_{SP}	260	°C

Notes: 1. When mounted on a PC board with 2 oz copper.



DO-216 Package

MSC – Lawrence

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MSC – Ireland

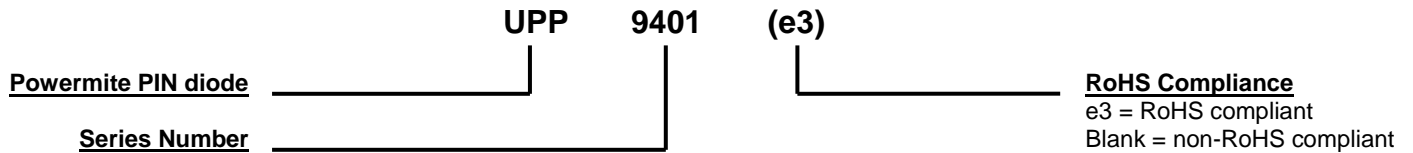
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MECHANICAL and PACKAGING

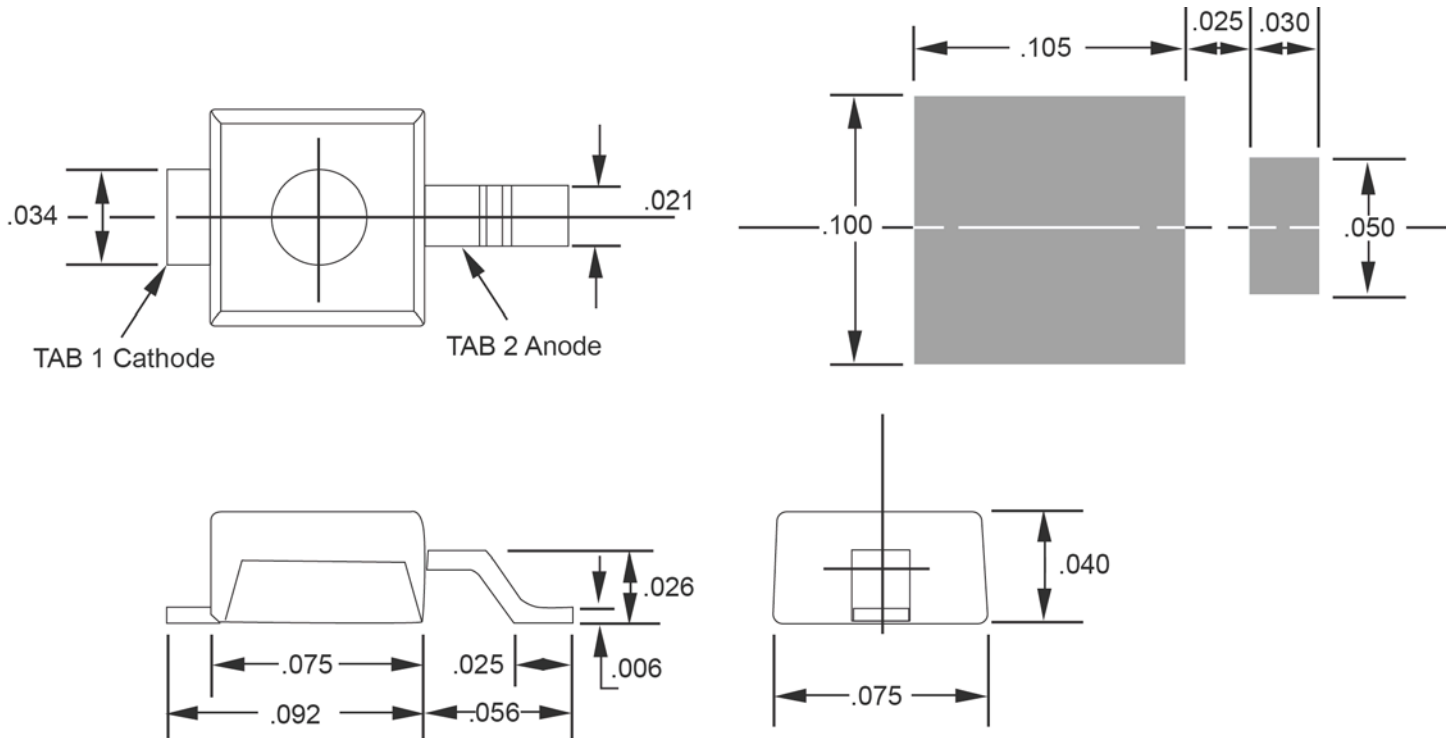
- CASE: Void-free transfer molded thermosetting epoxy compound meeting UL94V-0.
- TERMINALS: Tin/lead or RoHS compliant annealed matte-tin over copper. Readily solderable per MIL-STD-750, method 2026.
- MARKING: P01• (dot indicates "e3" designation).
- POLARITY: Cathode connected to TAB 2.
- TAPE & REEL option: 16 mm tape per standard EIA-481-B. Consult factory for quantities.
- WEIGHT: Approximately 0.016 gram.
- See [Package Dimensions](#) on last page.

PART NOMENCLATURE

SYMBOLS & DEFINITIONS

Symbol	Definition
f	Frequency
I_R	Reverse current
I_F	Forward current

ELECTRICAL CHARACTERISTICS @ $T_A = +25^\circ\text{C}$ unless otherwise noted

SERIES RESISTANCE R_S		CAPACITANCE C_T		PARALLEL RESISTANCE R_P		CARRIER LIFETIME τ		TRANSMIT HARMONIC DISTORTION	RECEIVE 3 rd ORDER HARMONIC DISTORTION	VOLTAGE RATING V_R	FORWARD VOLTAGE V_F
@ f = 100 MHz $I_F = 50 \text{ mA}$		@ f = 100 MHz $V_R = 0 \text{ V}$		@ f = 100 MHz $V = 0 \text{ V}$		@ $I_F = 10 \text{ mA}$		@ Pin = 50 W f = 50 MHz $I_F = 50 \text{ mA}$	@ f = 100 MHz $V = 0 \text{ V}$ f ₁ = 50 MHz f ₂ = 51 MHz	@ $I_R = 10 \mu\text{A}$	@ $I_F = 50 \text{ mA}$
Ohms		pF		Ohms		μS		-dB	-dB	Volts	Volts
TYP	MAX	TYP	MAX	MIN	TYP	MIN	TYP	MIN	MIN	MIN	MAX
0.75	1.0	0.75	1.0	5K	10K	1.0	2.0	80	60	50	1.0

PACKAGE and MOUNTING PAD DIMENSIONS


DIMENSIONS in inches