

**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 available as RoHS Compliant with an e3 suffix. The Powermite package provides a full-metallic bottom that eliminates the possibility of solder flux entrapment during assembly, and 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.

**APPEARANCE**



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

**FEATURES**

- High Power Surface Mount Package with very low thermal resistance
- RoHS compliant with e3 suffix part number
- Specified Low Distortion
- Low Bias Current Requirements
- High Zero Bias Impedance
- Full Metallic Bottom Eliminates Flux Entrapment
- Integral Heat Sink/Locking Tabs

**APPLICATIONS / BENEFITS**

- Two-way radio antenna switch
- Low forward bias resistance
- High zero 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**

- Maximum Reverse Voltage: 50 Volts
- Average Power Dissipation @ T<sub>TAB1</sub> = 75°C: 2.5 Watts (When mounted on a PC board with 2 oz copper.)
- Thermal Resistance Junction to case (bottom): 10°C/W
- Operating and Storage Temperature: -55°C to +150°C
- Solder Temperatures: 260°C for 10 s (maximum)

**MECHANICAL AND PACKAGING**

- CASE: Void-free transfer molded thermosetting epoxy compound meeting UL94V-0
- TERMINALS: Annealed matte Tin over copper and readily solderable per MIL-STD-750, method 2026
- POLARITY: Cathode designated by TAB 1
- MARKING: P01•
- WEIGHT: 0.016 gram (approximate)
- See package dimension on last page
- Tape & Reel option: 16 mm tape per Standard EIA-481-B, 3000 on 7 inch reel or 12,000 on 13 inch reel

**ELECTRICAL CHARACTERISTICS (T<sub>A</sub> = 25°C unless noted)**

Series Resistance R <sub>S</sub> , Ohms f = 100 MHz I <sub>F</sub> = 50 mA		Capacitance @ f = 100 MHz V <sub>R</sub> = 0 V C <sub>T</sub> pF		Parallel Resistance @ f = 100 MHz V = 0 V R <sub>P</sub> Ohms		Carrier Lifetime @ I <sub>F</sub> = 10 mA τ μS		Transmit Harmonic Distortion @ Pin = 50 W f = 50 MHz I <sub>F</sub> = 50 mA -dB	Receive 3 <sup>rd</sup> Order Harmonic Distortion @ f = 100 MHz V = 0 V f <sub>A</sub> = 50 MHz f <sub>B</sub> = 51 MHz -dB	Voltage Rating V <sub>R</sub> @ I <sub>R</sub> = 10 μA Volts	Forward Voltage V <sub>F</sub> @ I <sub>F</sub> = 50 mA 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

