

M/A-COM Products

Rev. V3

Packaged PIN Diodes - ODS-255 Case Style

Features

- High Power PIN Diodes
- Fast Speed PIN Diodes
- Voltage Ratings to 1000 Volts
- Long Carrier Lifetime Designs
- High Reliability for Space/Military Applications

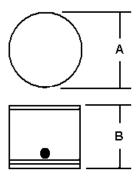
Description and Applications

MA-COM's product line of packaged PIN diodes represents a comprehensive combination of PIN diode electrical characteristics and package outlines. This union of semiconductor and packaging technology gives considerable design flexibility to the PIN diode circuit designer. The fast switching speed PIN diodes utilize thin I-region silicon dioxide passivated chips that incorporate careful control of semiconductor processing. These diodes achieve consistent performance in control circuit applications. The packaged CERMACHIP PIN diodes employ MA-COM's unique hard glass passivated, hermetically sealed PIN diode chip. The packaged CERMACHIP PIN diodes are designed for use in high power and high RF voltage applications. The PIN diode chips are bonded into hermetically sealed ceramic or glass packages that are designed for high volume, close tolerance utilization. Packages are available which are suitable for mounting in a variety of microwave and RF circuit media. The packaged silicon PIN diode series has high inherent reliability and is capable of meeting stringent environmental tests. These diodes may be ordered with testing to selected reliability levels.

Absolute Maximum Ratings¹ @ T_A = +25 °C (unless otherwise specified)

| Parameter | Absolution Max. | | |
|-----------------------|---|--|--|
| Voltage | Voltage Rating | | |
| Operating Temperature | - 65°C to +175°C | | |
| Storage Temperature | -65°C to +200°C | | |
| Max Power Dissipation | Pdiss = <u>T (max_Operating)-25C</u> Thermal Resistance | | |

^{1.} Operation of this device above any one of these parameters may cause permanent damage.



| Dimension | INCHES | | М | м |
|-----------|--------|-------|------|------|
| А | 0.077 | 0.083 | 1.96 | 2.11 |
| В | 0.054 | 0.063 | 1.37 | 1.6 |

| | Minimum Reverse Voltage V _{R @-10µA} (V _{DC}) | Maximum Junction Capacitance (pF) Cj _{@ VR} 1 MHz (pF) | Maximum Series Resistance (Ω) | Nominal Characteristics | |
|-------------|--|--|--|-------------------------|----------------------------|
| Part Number | | | | Carrier Lifetime T_L | l Region Thickness (μm) |
| MA4P202-255 | 100 | 0.05 @10V | 2.5 @ 10mA | 200nsec | 19 |
| MA4P303-255 | 200 | 0.15 @ 10V | 1.5 @ 10mA | 300nsec | 20 |
| MA4P504-255 | 500 | 0.20 @ 100V | 0.60 @ 100mA | 1usec | 50 |
| MA4P505-255 | 500 | 0.35 @ 100V | 0.45 @ 100mA | 2 usec | 50 |
| MA4P506-255 | 500 | 0.70 @ 100V | 0.30 @ 100mA | 3usec | 50 |
| MA4P604-255 | 1000 | 0.30 @ 100V | 1.00 @ 100mA | 3usec | 90 |

Electrical Specifications T_A= +25 C

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