

# Surface Mount Plastic PIN Diode

## 0402P / SOD882



MADP-007436-0402P

Rev. V1

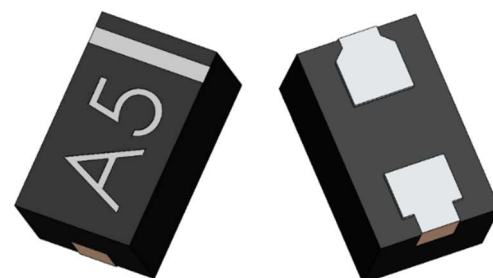
### Features

- Low Loss, High Isolation Switching Diode
- Tape & Reel Packaging
- Small Size, Lead-Free Surface Mount Package (SOD-882)
- Competitive Cross to Skyworks' SMP1322-040LF
- RoHS\* Compliant

### Description and Applications

The MADP-007436-0402P offers low series resistance for best performance in low loss series switch applications.

The MADP-007436-0402P is a silicon PIN diode in a small size, surface mount plastic package. The SOD-882 package is 40 x 24 mil DFN with a NiPdAu Lead Finish. The MADP-007436-0402P is supplied on tape and reel for automatic pick and place assembly and for surface mount placement to circuit boards.



### Ordering Information

| Part Number       | Packaging        |
|-------------------|------------------|
| MADP-007436-0402P | 3,000-piece reel |

### Electrical Specifications @ +25°C

| Parameter          | Test Conditions   | Units         | Min. | Typ. | Max. |
|--------------------|---|---------------|------|------|------|
| Reverse Current    | $V_r = 35\text{ V}$                                       | $\mu\text{A}$ | ---  | ---  | 1    |
| Forward Voltage    | $I_f = 100\text{ mA}$                                     | V             | 0.5  | ---  | 1.2  |
| Capacitance        | $V_r = 20\text{ V}$ , $f = 1\text{ MHz}$                  | pF            | ---  | ---  | 1.0  |
| Series Resistance  | $I_f = 10\text{ mA}$ , $f = 100\text{ MHz}$               | $\Omega$      | ---  | 0.5  | ---  |
| Carrier Lifetime   | $I_f = 10\text{ mA}$ / $I_r = 6\text{ mA}$ , 90% Recovery | $\mu\text{s}$ | ---  | 0.2  | ---  |
| I-Region Thickness | ---   | mils          | ---  | 0.4  | ---  |

1 \* Restrictions on Hazardous Substances, compliant to current RoHS EU directive

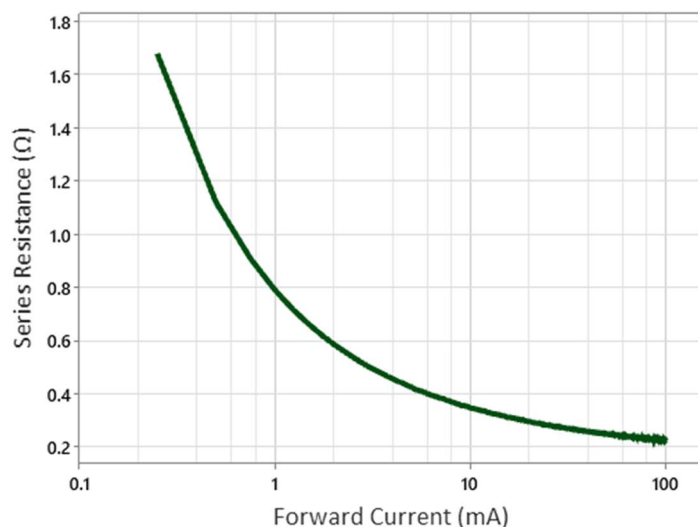
**Absolute Maximum Ratings @ +25°C<sup>5</sup> (Unless Otherwise Noted)**

| Parameter   | Rating          |
|---|-----------------|
| Operating Temperature   | -65°C to +125°C |
| Storage Temperature   | -65°C to +150°C |
| Junction Temperature  | +175°C          |
| RF CW Incident Power:<br>( $\theta$ die = 25°C/W), RF & DC Incident De-rating Coefficient = -16.8 mW/°C | 31 dBm          |
| Power Dissipation:<br>RF & DC Dissipated De-rating Coefficient = -33.3 mW/°C                            | 250 mW          |
| Reverse Voltage   | 75 V            |
| Forward Current   | 150 mA DC       |

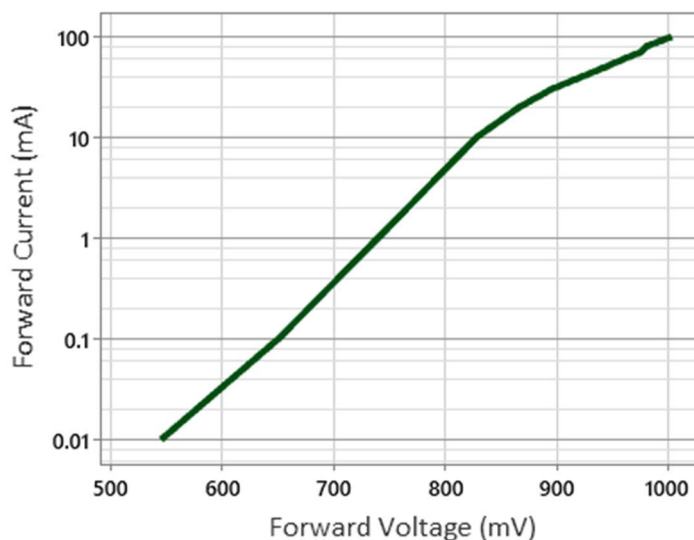
5. Operation of these devices above any one of these parameters may cause permanent damage.

**Typical Performance Curves @ +25 °C**

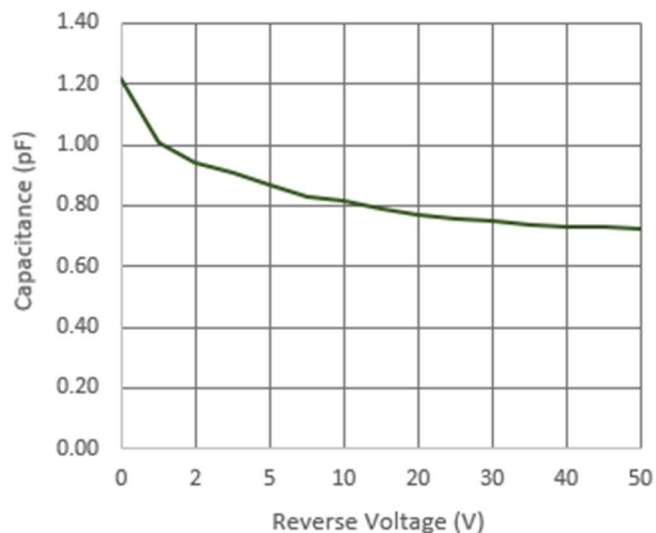
*Series Resistance vs Current [ $f = 100$  MHz]*



*Forward Current vs Voltage*



*Capacitance vs Reverse Voltage*



## Handling Procedures

Please observe the following precautions to avoid damage:

Device can be handled with tweezers or vacuum pickups and are suitable for use with automatic pick-and-place equipment.

## Static Sensitivity

These electronic devices are sensitive to electrostatic discharge (ESD) and can be damaged by static electricity. Proper ESD control techniques should be used when handling these Class 1 devices.

## Cleanliness and Storage

These devices should be handled and stored in a clean environment. Ends of the device are tin plated for greater solderability. Continuous exposure to high humidity (>80%) for extended periods may cause the surface to oxidize. Caution should be taken when storing devices for long periods.

## Mounting Techniques

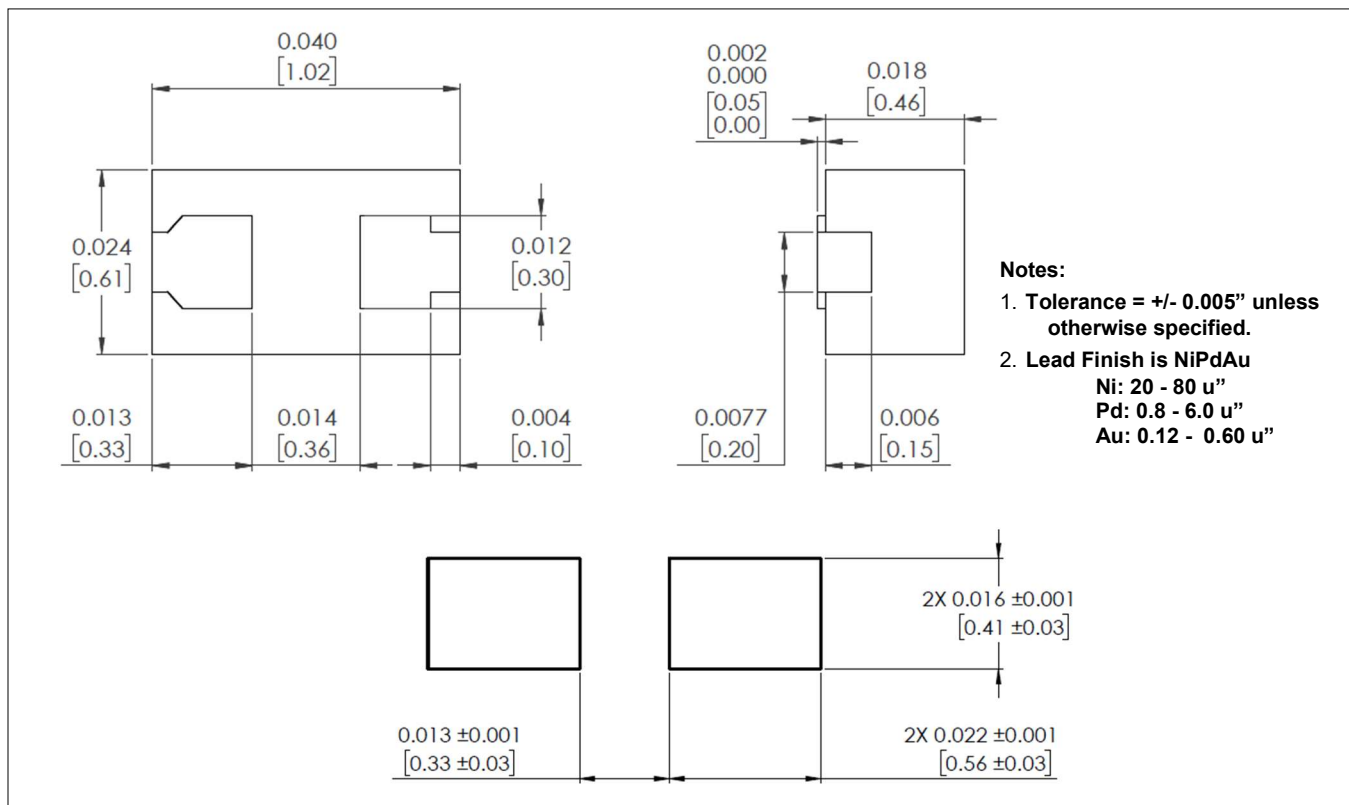
### Solder Attach

Typical wave soldering or reflow techniques may be used to mount MACOM's SMT packages to circuit boards using Sn63/Pb37 alloy or RoHS compliant solders. For more information visit the MACOM website and read application note M538.

### RoHS

The MADP-007436-0402P is fully RoHS compliant meaning it contains less than the maximum allowable concentration of 0.1% by weight in homogenous materials for lead, hex chrome, mercury, PBB, PBDE, and 0.01% for cadmium.

## Package (SOD-882) Pad Dimensions & PCB Layout



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