

Surface Mount Plastic PIN Diodes

Rev. V5

Features

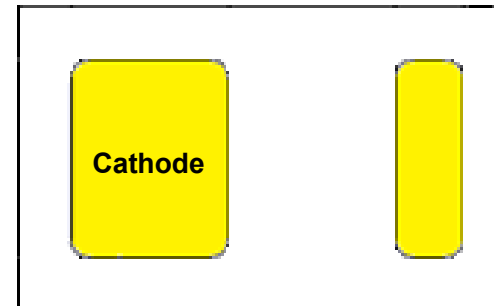
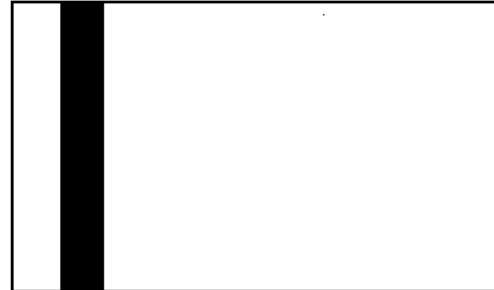
- Surface Mount Packages
- Low Loss, High Isolation Switching Diodes
- Tape and Reel Packaging
- RoHS* Compliant and 260°C Reflow Compatible

Description

The MADP-010630, MADP-010631 and the MADP-010633 are silicon PIN diodes in a low cost, surface mount plastic package for use as a switch or attenuator. These diodes are offered with 100% matte Sn plating and are RoHS compliant devices.

These PIN diodes feature optimized I-region lengths which results in a low resistance, low capacitance device for various microwave control circuit applications.

Package Style 1392



Ordering Information

| Part Number | Package |
|--------------------|---------------|
| MADP-010630-13920T | tape and reel |
| MADP-010631-13920T | tape and reel |
| MADP-010633-13920T | tape and reel |

Electrical Specifications @ T_{AMBIENT} = 25°C

| Part Number | Maximum ⁵ Incident Power (W) | Reverse Voltage ¹ (V) | Maximum Total Capacitance ² (pF) | Maximum R _s ³ (Ohms) | Nominal Characteristics | | |
|-------------|--|--|--|--|--|-------------------------------|---|
| | | | | | Carrier Lifetime ⁴ (μs) | I-Region Thickness (μm) | Thermal ⁶ Resistance θ |
| MADP-010630 | 25 | 100 | 0.35 @ 20 V | 1.5 @ 10 mA | 0.2 | 10 | 82°C/W |
| MADP-010631 | 40 | 100 | 1.00 @ 20 V | 0.5 @ 10 mA | 0.2 | 10 | 32°C/W |
| MADP-010633 | 100 | 500 | 0.4 @ 50 V | 0.6 @ 100 mA | 1.0 | 50 | 25°C/W |

1. The reverse current will not exceed 10 μA at the reverse voltage rating.
2. Total capacitance is measured at 1 MHz at the indicated voltage.
3. Series resistance is measured at 100 MHz.
4. Nominal minority carrier lifetime is measured at I_F = 10 mA, I_R = 6 mA, 90% recovery.
5. Incident power measured at I_F = 50 mA, F = 1GHz
6. Device located on an infinite heatsink

* Restrictions on Hazardous Substances, European Union Directive 2011/65/EU.

**Absolute Maximum Ratings: $T_{AMB} = 25^{\circ}\text{C}$
(unless otherwise specified)**

| Parameter | Absolute Maximum |
|-----------------------|---|
| Operating Temperature | -65°C to $+125^{\circ}\text{C}$ |
| Storage Temperature | -65°C to $+150^{\circ}\text{C}$ |
| Junction Temperature | $+175^{\circ}\text{C}$ |
| Mounting Temperature | $+260^{\circ}\text{C}$ for 30 secs. |

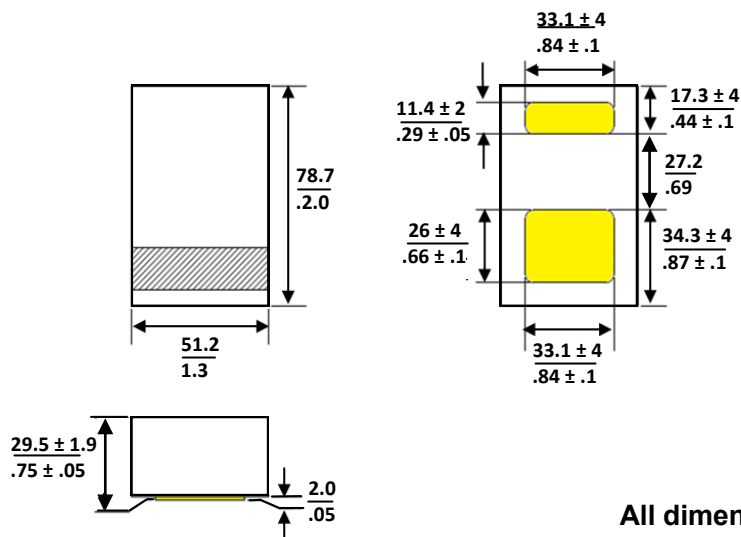
Handling Procedures

Please observe the following precautions to avoid damage:

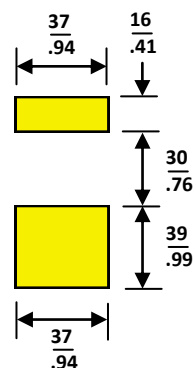
Static Sensitivity

Silicon Integrated Circuits are sensitive to electrostatic discharge (ESD) and can be damaged by static electricity. Proper ESD control techniques should be used when handling these devices.

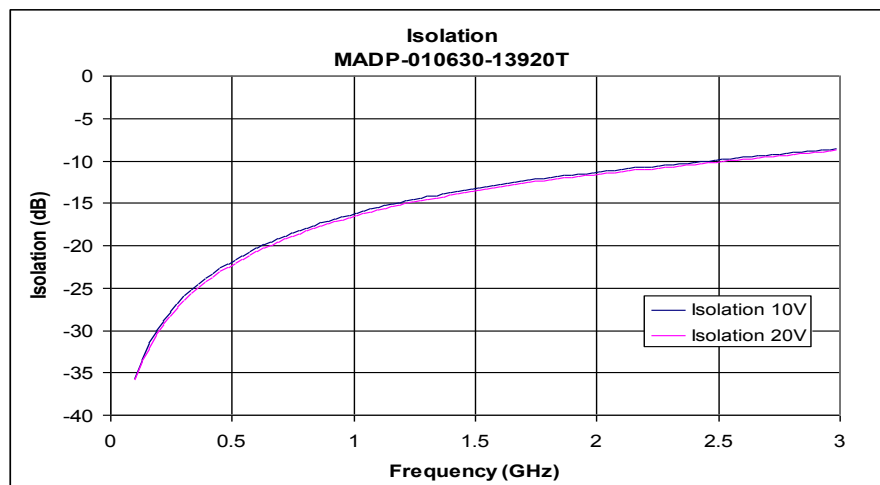
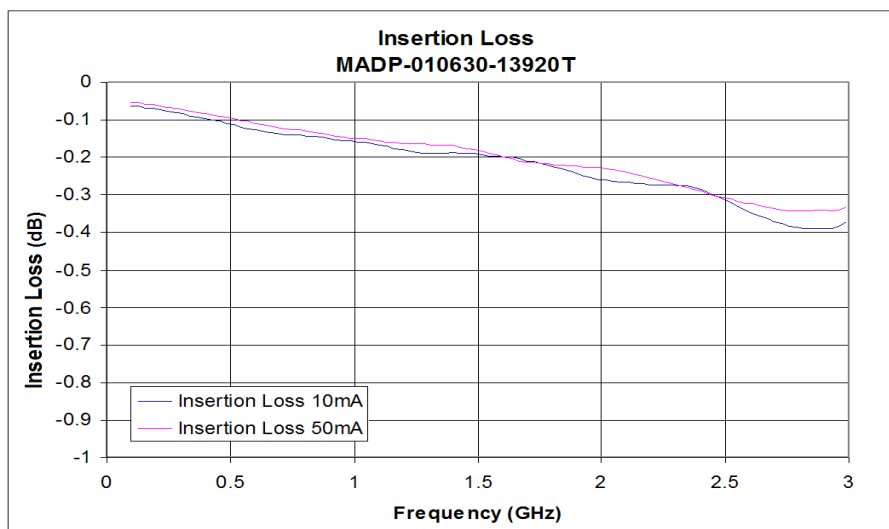
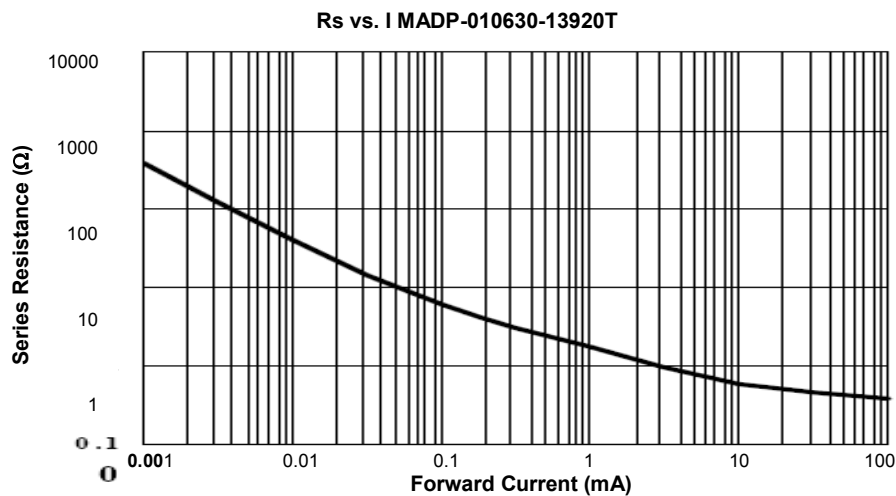
Package Style 1392

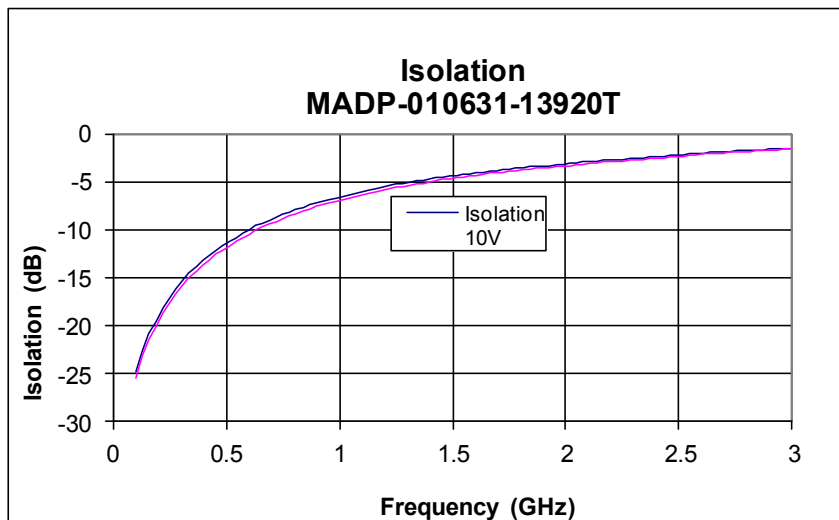
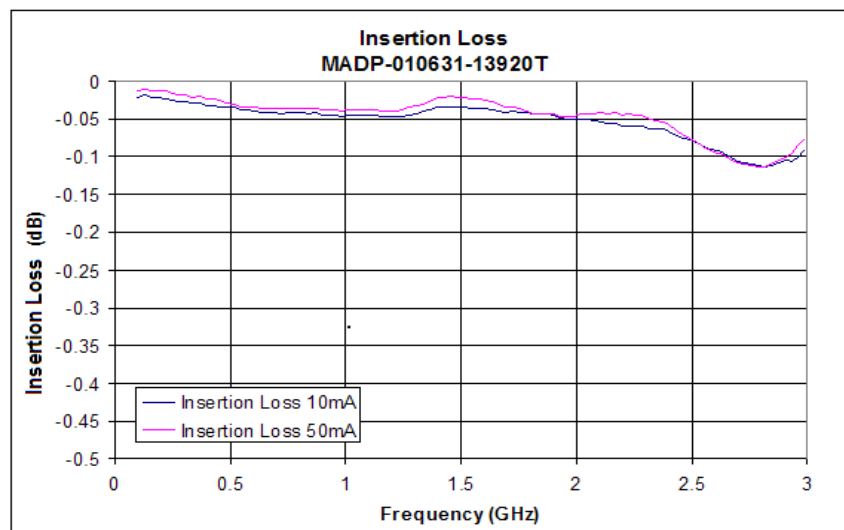
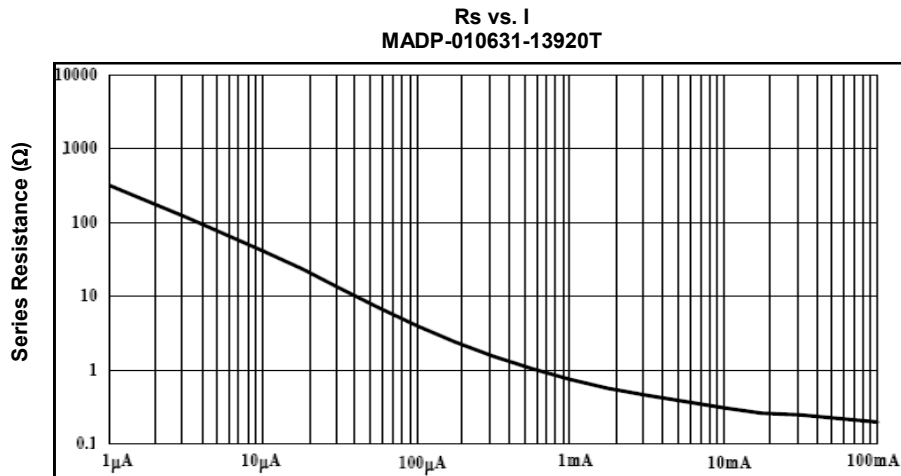


Mounting Pad Configuration



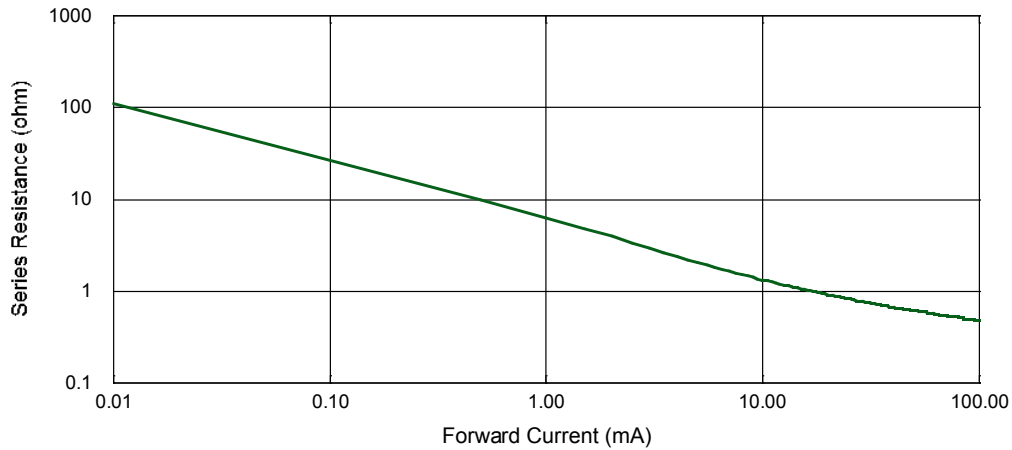
All dimensions are in mils / millimeters



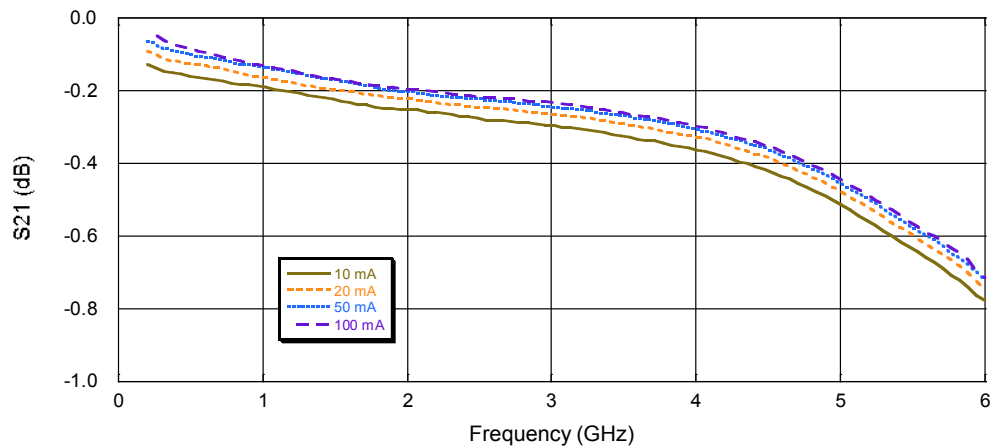


Typical Performance Curves MADP-010633

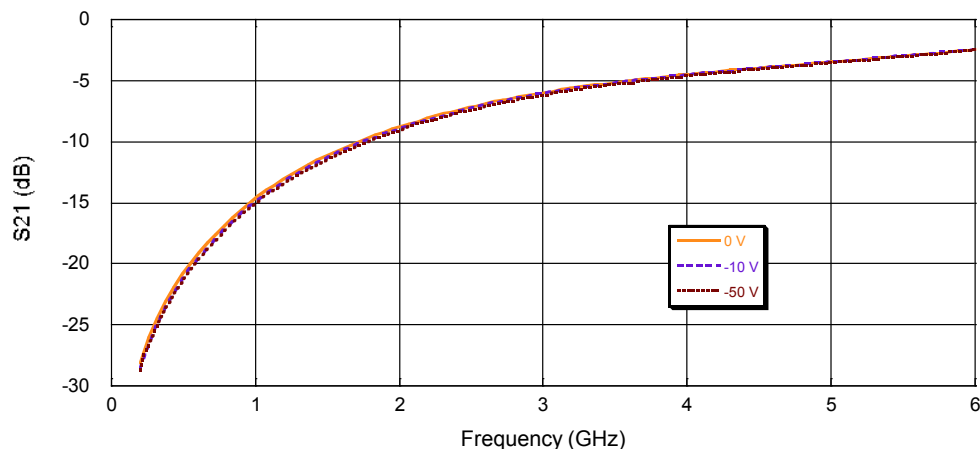
Series Resistance vs. Frequency



Insertion Loss vs. Frequency



Isolation vs. Frequency



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