

Surface Mount Plastic PIN Diodes

Rev. V5

Features

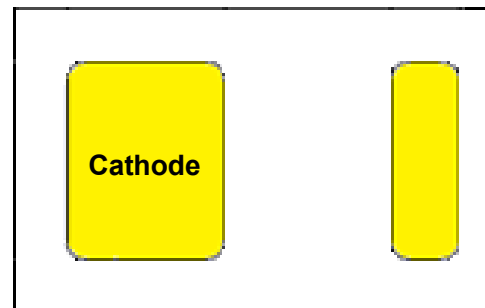
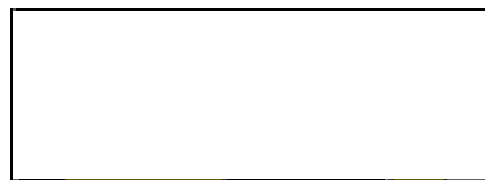
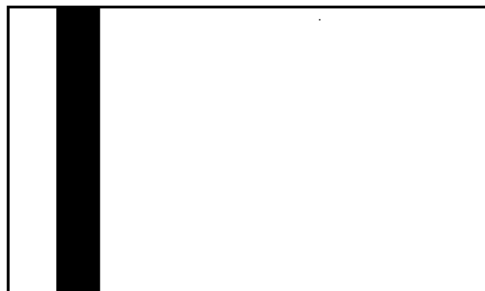
- Surface Mount Packages
- Low Loss, High Isolation Switching Diodes
- Tape and Reel Packaging
- RoHS* Compliant and 260°C Reflow Compatible

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 Incident Power ⁵ (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°C
Storage Temperature	-65°C to +150°C
Junction Temperature	+175°C
Mounting Temperature	+260°C for 30 secs.

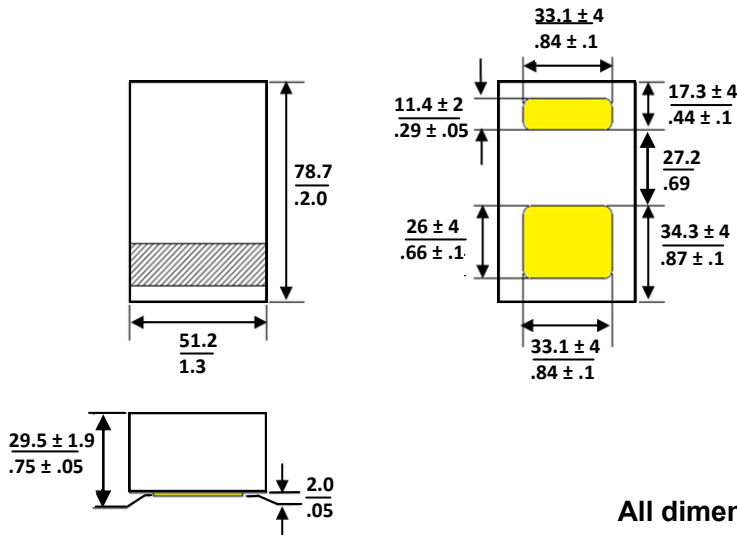
Handling Procedures

Please observe the following precautions to avoid damage:

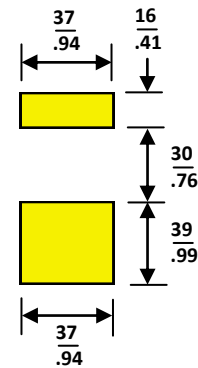
Static Sensitivity

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.

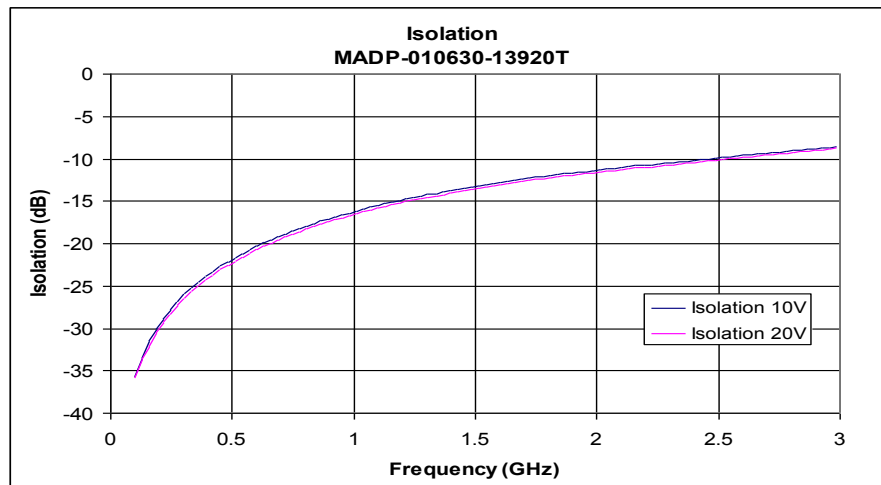
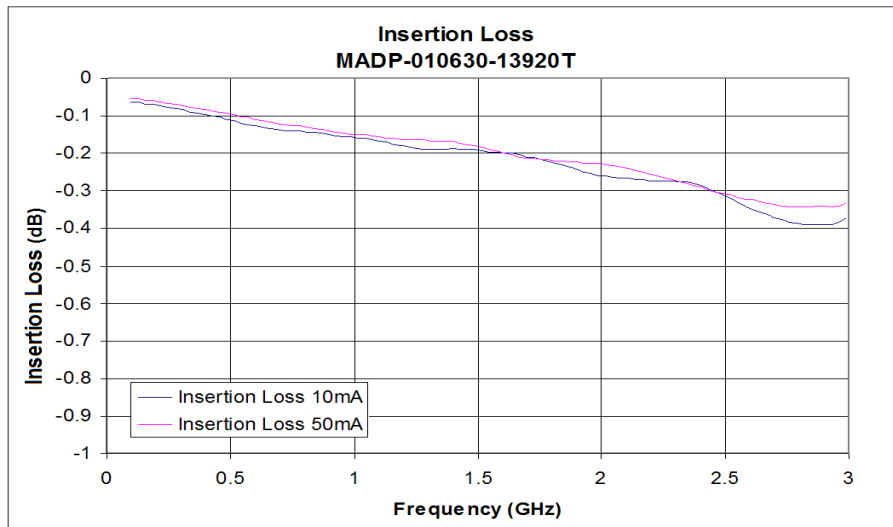
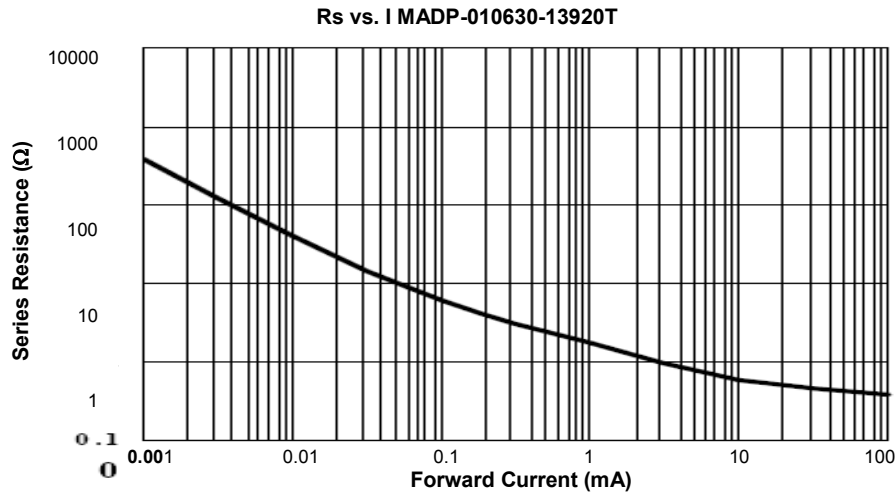
Package Style 1392

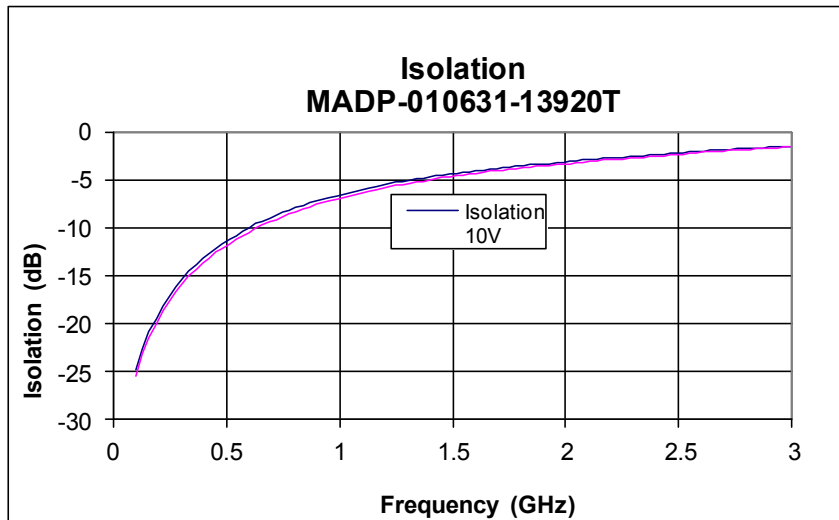
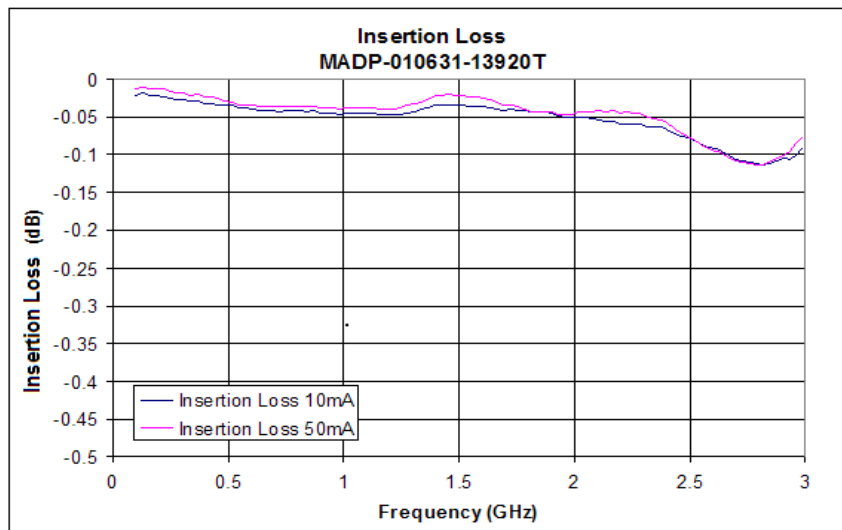
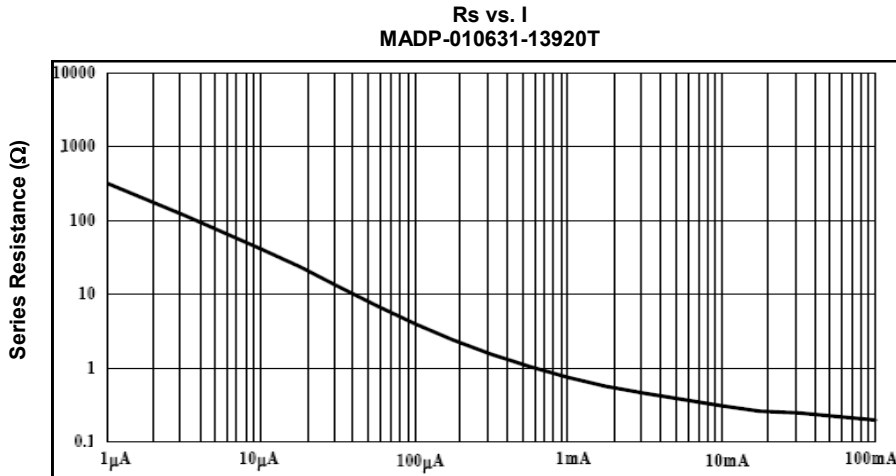


Mounting Pad Configuration



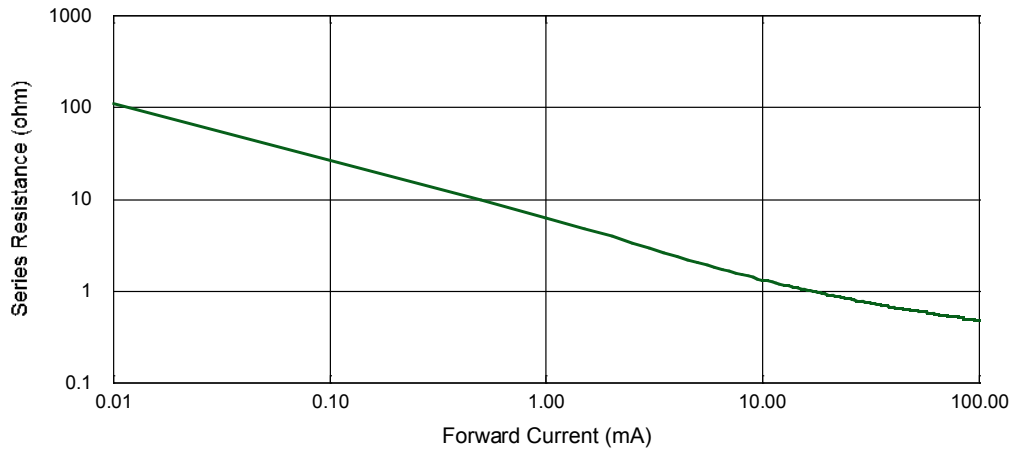
All dimensions are in mils / millimeters



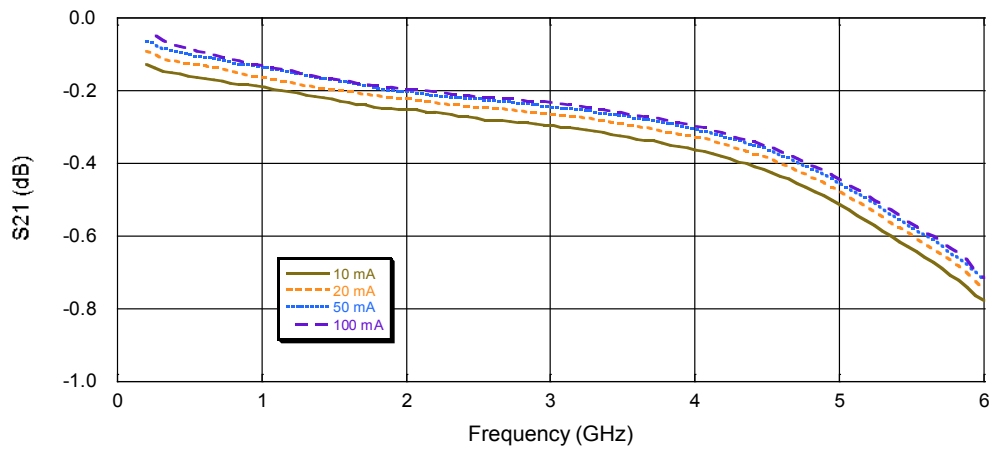


Typical Performance Curves MADP-010633

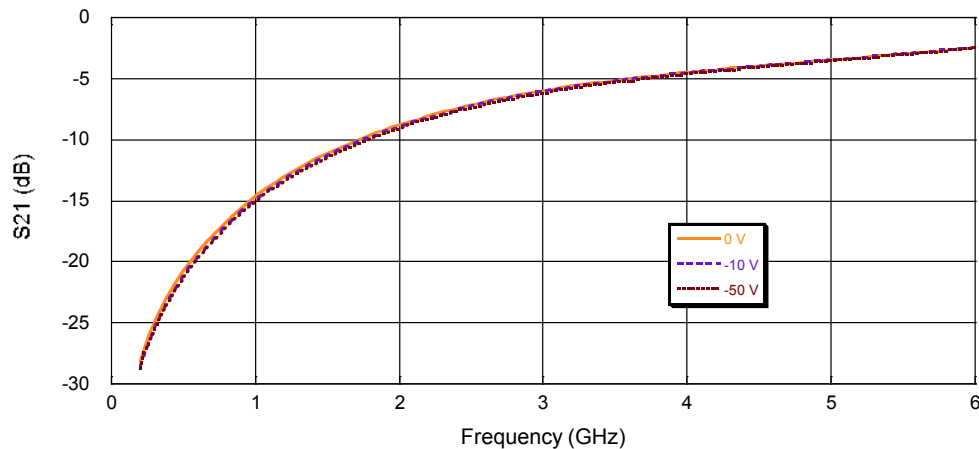
Series Resistance vs. Frequency



Insertion Loss vs. Frequency



Isolation vs. Frequency



M/A-COM Technology Solutions Inc. All rights reserved.

Information in this document is provided in connection with M/A-COM Technology Solutions Inc ("MACOM") products. These materials are provided by MACOM as a service to its customers and may be used for informational purposes only. Except as provided in MACOM's Terms and Conditions of Sale for such products or in any separate agreement related to this document, MACOM assumes no liability whatsoever. MACOM assumes no responsibility for errors or omissions in these materials. MACOM may make changes to specifications and product descriptions at any time, without notice. MACOM makes no commitment to update the information and shall have no responsibility whatsoever for conflicts or incompatibilities arising from future changes to its specifications and product descriptions. No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document.

THESE MATERIALS ARE PROVIDED "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, RELATING TO SALE AND/OR USE OF MACOM PRODUCTS INCLUDING LIABILITY OR WARRANTIES RELATING TO FITNESS FOR A PARTICULAR PURPOSE, CONSEQUENTIAL OR INCIDENTAL DAMAGES, MERCHANTABILITY, OR INFRINGEMENT OF ANY PATENT, COPYRIGHT OR OTHER INTELLECTUAL PROPERTY RIGHT. MACOM FURTHER DOES NOT WARRANT THE ACCURACY OR COMPLETENESS OF THE INFORMATION, TEXT, GRAPHICS OR OTHER ITEMS CONTAINED WITHIN THESE MATERIALS. MACOM SHALL NOT BE LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, INCLUDING WITHOUT LIMITATION, LOST REVENUES OR LOST PROFITS, WHICH MAY RESULT FROM THE USE OF THESE MATERIALS.

MACOM products are not intended for use in medical, lifesaving or life sustaining applications. MACOM customers using or selling MACOM products for use in such applications do so at their own risk and agree to fully indemnify MACOM for any damages resulting from such improper use or sale.