MADP-010630-13920T
MADP-010631-13920T
MADP-010633-13920T

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.

Ordering Information

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Package</th>
</tr>
</thead>
<tbody>
<tr>
<td>MADP-010630-13920T</td>
<td>tape and reel</td>
</tr>
<tr>
<td>MADP-010631-13920T</td>
<td>tape and reel</td>
</tr>
<tr>
<td>MADP-010633-13920T</td>
<td>tape and reel</td>
</tr>
</tbody>
</table>

Electrical Specifications @ $T_{\text{AMBIENT}} = 25^\circ\text{C}$

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Maximum(^5) Incident Power (W)</th>
<th>Reverse Voltage(^1) (V)</th>
<th>Maximum Total Capacitance(^2) (pF)</th>
<th>Maximum (R_s)(^3) (Ohms)</th>
<th>Nominal Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Carrier Lifetime(^4) (µs)</td>
</tr>
<tr>
<td>MADP-010630</td>
<td>25</td>
<td>100</td>
<td>0.35 @ 20 V</td>
<td>1.5 @ 10 mA</td>
<td>0.2</td>
</tr>
<tr>
<td>MADP-010631</td>
<td>40</td>
<td>100</td>
<td>1.00 @ 20 V</td>
<td>0.5 @ 10 mA</td>
<td>0.2</td>
</tr>
<tr>
<td>MADP-010633</td>
<td>100</td>
<td>500</td>
<td>0.4 @ 50 V</td>
<td>0.6 @ 100 mA</td>
<td>1.0</td>
</tr>
</tbody>
</table>

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 $I_L = 10$ mA, $I_R = 6$ mA, 90% recovery.
5. Incident power measured at $I_L = 50$ mA, $F = 1$GHz
6. Device located on an infinite heatsink


Visit www.macomtech.com for additional data sheets and product information.

• North America  Tel: 800.366.2266 / Fax: 978.366.2266
• Europe        Tel: 44.1908.574.200 / Fax: 44.1908.574.300
• Asia/Pacific  Tel: 81.44.844.8296 / Fax: 81.44.844.8298
Absolute Maximum Ratings: $T_{\text{AMB}} = 25^\circ\text{C}$ (unless otherwise specified)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Absolute Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Temperature</td>
<td>-65°C to +125°C</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-65°C to +150°C</td>
</tr>
<tr>
<td>Junction Temperature</td>
<td>+175°C</td>
</tr>
<tr>
<td>Mounting Temperature</td>
<td>+260°C for 30 secs.</td>
</tr>
</tbody>
</table>

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
Surface Mount Plastic PIN Diodes

Rs vs. I MADP-010630-13920T

Insertion Loss MADP-010630-13920T

Isolation MADP-010630-13920T
Surface Mount Plastic PIN Diodes

Rs vs. I
MADP-010631-13920T

Series Resistance (Ω)

Isolation (dB)
Frequency (GHz)

Insertion Loss
MADP-010631-13920T

Insertion Loss 10mA
Insertion Loss 50mA

Frequency (GHz)

Isolation
MADP-010631-13920T

Isolation 10V

Frequency (GHz)
Typical Performance Curves MDP-010633

Series Resistance vs. Frequency

Insertion Loss vs. Frequency

Isolation vs. Frequency
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