**Silicon NIP Diode**

**Features**
- Rugged Construction
- Fully Passivated
- Low Leakage
- Available in Both Chip and Package Styles
- Screening per MIL-PRF-19500 and MIL-PRF-38534 Available

**Description**
The MNP0014 Series are silicon NIP diodes that feature a fully passivated mesa construction for low leakage and reliability.

**Electrical Specifications: T<sub>c</sub> = +25°C**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Test Conditions</th>
<th>Units</th>
<th>Min.</th>
<th>Typ.</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage Breakdown</td>
<td>I&lt;sub&gt;R&lt;/sub&gt; = 10 µA</td>
<td>V</td>
<td>500</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Junction Capacitance</td>
<td>V&lt;sub&gt;R&lt;/sub&gt; = 50 V, 1 MHz</td>
<td>pF</td>
<td>—</td>
<td>0.12</td>
<td>0.18</td>
</tr>
<tr>
<td>Total Capacitance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Package Style: ET47p</td>
<td>V&lt;sub&gt;R&lt;/sub&gt; = 50 V, 1 MHz</td>
<td>pF</td>
<td>—</td>
<td>0.52</td>
<td>0.58</td>
</tr>
<tr>
<td>Package Style: T54p</td>
<td></td>
<td></td>
<td></td>
<td>0.32</td>
<td>0.38</td>
</tr>
<tr>
<td>Package Style: T55p</td>
<td></td>
<td></td>
<td></td>
<td>0.29</td>
<td>0.31</td>
</tr>
<tr>
<td>Package Style: T89p</td>
<td></td>
<td></td>
<td></td>
<td>0.37</td>
<td>0.43</td>
</tr>
<tr>
<td>Series Resistance</td>
<td>I&lt;sub&gt;F&lt;/sub&gt; = 100 mA, 500 MHz</td>
<td>Ω</td>
<td>—</td>
<td>1.3</td>
<td>1.6</td>
</tr>
<tr>
<td>Lifetime</td>
<td>I&lt;sub&gt;F&lt;/sub&gt; = 10 mA, I&lt;sub&gt;R&lt;/sub&gt; = 6 mA, 50%</td>
<td>ns</td>
<td>—</td>
<td>750</td>
<td>—</td>
</tr>
<tr>
<td>I Layer</td>
<td></td>
<td>µm</td>
<td>—</td>
<td>80</td>
<td>—</td>
</tr>
</tbody>
</table>

**Absolute Maximum Ratings<sup>1,2</sup>**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Absolute Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reverse Voltage</td>
<td>500 V</td>
</tr>
<tr>
<td>Thermal Resistance</td>
<td>+10°C/W</td>
</tr>
<tr>
<td>Operating &amp; Storage Temperature</td>
<td>-65°C to +150°C</td>
</tr>
</tbody>
</table>

1. Exceeding any one or combination of these limits may cause permanent damage to this device.
2. MACOM does not recommend sustained operation near these survivability limits.
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Outline Drawings

**C22**

- Dimensions in mils [mm]
- ANODE (C22) CATHODE (C22P)
- 0.018 [0.965]
- 0.022 [0.559]

**ET47**

- Dimensions in mils [mm]
- EPOXY ENCAPSULATION
- 0.035 [0.889] MAX.
- 0.005 [0.127] 0.003 [0.076]
- 1 = ANODE (ET47) CATHODE (ET47P)
- 2 = ANODE (ET47) CATHODE (ET47P)

inches (mm)
Outline Drawings

**T54 / T54p**

- Diameter: 86 [2.184] Dia. 78 [1.981]
- Body: 44 [1.118] 34 [0.864]
- Contacts: 12 [0.395] 10 [0.254]

**T55 / T55p**

- Diameter: 0.045 [1.397] 0.055 [1.143]

**T89 / T89p**

- Diameter: 27 [0.886] max. 80 [2.032] dia. nom.
- Contacts: 11 [0.279] max. 212 [5.385] 138 [3.525]
- Threads: 3–48 UNC–2A

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