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: \( T_C = +25^\circ C \)

<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_R = 10 \mu A )</td>
<td>V</td>
<td>500</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Junction Capacitance DIE</td>
<td>( V_R = 50 V, 1 ) MHz</td>
<td>pF</td>
<td>—</td>
<td>0.12</td>
<td>0.18</td>
</tr>
<tr>
<td>Package (C22p)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Capacitance Package</td>
<td>( V_R = 50 V, 1 ) MHz</td>
<td>pF</td>
<td>0.52</td>
<td>0.32</td>
<td>0.38</td>
</tr>
<tr>
<td>Style: ET47p</td>
<td></td>
<td></td>
<td></td>
<td>0.25</td>
<td>0.31</td>
</tr>
<tr>
<td>T54p</td>
<td></td>
<td></td>
<td></td>
<td>0.37</td>
<td>0.43</td>
</tr>
<tr>
<td>T55p</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T89p</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Series Resistance</td>
<td>( I_F = 100 ) mA, 500 MHz</td>
<td>( \Omega )</td>
<td>—</td>
<td>1.3</td>
<td>1.6</td>
</tr>
<tr>
<td>Lifetime</td>
<td>( I_F = 10 ) mA, ( I_R ) = 6 mA, 50%</td>
<td>ns</td>
<td>—</td>
<td>750</td>
<td>—</td>
</tr>
<tr>
<td>I Layer</td>
<td></td>
<td>( \mu m )</td>
<td>—</td>
<td>80</td>
<td>—</td>
</tr>
</tbody>
</table>

Absolute Maximum Ratings\(^{1,2}\)

<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.
Outline Drawings

**C22**

- ANODE (C22)
- CATHODE (C22P)
- 0.002 [0.050] MINIMUM

- CATHODE (C22)
- ANODE (C22P)
- 0.004 [0.101]
- 0.006 [0.101]

**ET47**

- 1 = ANODE (ET47)
- CATHODE (ET47P)
- 2 = ANODE (ET47)
- CATHODE (ET47P)

- 0.042 [1.067]
- 0.038 [0.965]

- 0.270 [6.858] MIN.
- 2 places

- 0.075 [1.905]
- 0.065 [1.651]

- 0.022 [0.559]
- 0.018 [0.457]

- 0.035 [0.889] MAX.

- 0.005 [0.127]
- 0.003 [0.076]

- EPOXY ENCAPSULATION

Dimensions in mils [mm]
Outline Drawings

**T54 / T54p**

- Body: 12 [0.395], 10 [0.254]
- Cathode (T54), Anode (T54p)

**T55 / T55p**

- Diameter: Ø 0.045 [1.397], 0.055 [1.143]

**T89 / T89p**

- Diameter: 124 [3.150], 110 [3.023]
- Max: 11 [0.279]
- 3-48 UNC-2A

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