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 MNP0008 Series are silicon NIP diodes that features 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>100</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Junction Capacitance</td>
<td>( V_R = 10 \text{ V}, 1 \text{ MHz} )</td>
<td>pF</td>
<td>—</td>
<td>0.08</td>
<td>0.12</td>
</tr>
<tr>
<td>Total Capacitance Package</td>
<td>( V_R = 10 \text{ V}, 1 \text{ MHz} )</td>
<td>pF</td>
<td>—</td>
<td>0.48</td>
<td>0.60</td>
</tr>
<tr>
<td>Die Package (C12p)</td>
<td></td>
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<tr>
<td>ET47p</td>
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<tr>
<td>T54p</td>
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<td>T55p</td>
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<tr>
<td>T89p</td>
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</tr>
<tr>
<td>Series Resistance</td>
<td>( I_F = 10 \text{ mA}, 500 \text{ MHz} )</td>
<td>Ω</td>
<td>—</td>
<td>2.0</td>
<td>2.5</td>
</tr>
<tr>
<td>Lifetime</td>
<td>( I_F = 10 \text{ mA}, I_R = 6 \text{ mA}, 50% )</td>
<td>ns</td>
<td>—</td>
<td>150</td>
<td>—</td>
</tr>
<tr>
<td>I Layer</td>
<td></td>
<td>µm</td>
<td>—</td>
<td>10</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>100 V</td>
</tr>
<tr>
<td>Thermal Resistance</td>
<td>+50°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

**C11/C12**

- Top Contact: 2 [0.051] mils (mm)
- Back Contact: 6 [0.152] and 4 [0.102] mils (mm)

Top contact is Anode except for MSS20,000 and MSS39,000 series diodes.

**ET47**

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

Dimensions in mils [mm]:
- 0.042 [1.067] 0.038 [0.965]
- 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]
Silicon NIP Diode

Outline Drawings

**T54 / T54p**

- **Cathode (T54)**
- **Anode (T54p)**
- **Ceramic Body**
- **Diameter & Dimensions**
  - 86 [2.184] Dia.
  - 78 [1.981]
  - 12 [0.395]
  - 10 [0.254]
  - 44 [1.118]
  - 34 [0.864]
  - 48 [1.219]

**T55 / T55p**

- **Cathode (T55)**
- **Anode (T55p)**
- **Ceramic Body**
- **Dimensions**
  - Ø 0.045 [1.397]
  - 0.055 [1.143]

**T89 / T89p**

- **Cathode (T89)**
- **Anode (T89p)**
- **Ceramic Body**
- **Diameter & Dimensions**
  - 3-48 UNC-2A
  - 212 [5.385]
  - T85 [4.059]
  - 138 [3.525]
  - 126 [3.200]
  - 124 [3.150]
  - 110 [3.023]
  - 80 [2.032] dia. nom.
  - 27 [0.886] max.
  - 11 [0.279] max.
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