MNP0010

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 MNP0010 is a silicon NIP diode 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>150</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Junction Capacitance</td>
<td>$V_R = 10 , V$, 1 MHz</td>
<td>pF</td>
<td>—</td>
<td>0.08</td>
<td>0.12</td>
</tr>
<tr>
<td>Total Capacitance Package Style</td>
<td>$V_R = 10 , V$, 1 MHz</td>
<td>pF</td>
<td>—</td>
<td>0.48</td>
<td>0.60</td>
</tr>
<tr>
<td>ET47p</td>
<td></td>
<td></td>
<td>0.28</td>
<td>0.37</td>
<td></td>
</tr>
<tr>
<td>T54p</td>
<td></td>
<td></td>
<td>0.21</td>
<td>0.29</td>
<td></td>
</tr>
<tr>
<td>T55p</td>
<td></td>
<td></td>
<td>0.33</td>
<td>0.43</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>$I_F = 10 , mA$, 500 MHz</td>
<td>Ω</td>
<td>—</td>
<td>2.0</td>
<td>2.5</td>
</tr>
<tr>
<td>Lifetime</td>
<td>$I_F = 10 , mA$, $I_R = 6 , mA$, 50%</td>
<td>ns</td>
<td>—</td>
<td>300</td>
<td>—</td>
</tr>
<tr>
<td>I Layer</td>
<td></td>
<td>μm</td>
<td>—</td>
<td>20</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>150 V</td>
</tr>
<tr>
<td>Thermal Resistance</td>
<td>$+50^\circ C$/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)
- Top contact is Anode except for MSS20,000 and MSS36,000 series diodes

**ET47**

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

Dimensions in mils [mm]

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Outline Drawings

**T54 / T54p**

- **Cathode (T54)**
- **Anode (T54p)**
- **Diameter**:
  - 86 [2.184] Dia.
  - 78 [1.981]
- **Width**:
  - 12 [0.395]
  - 10 [0.254]
- **Height**:
  - 44 [1.118]
  - 34 [0.864]
- **Diameter**:
  - 48 [1.219]

**T55 / T55p**

- **Cathode (T55)**
- **Anode (T55p)**
- **Diameter**:
  - Ø .045 [1.397]
  - .055 [1.143]
- **Height**:
  - .045 [1.397]
  - .055 [1.295]

**T89 / T89p**

- **Cathode (T89)**
- **Anode (T89p)**
- **Diameter**:
  - 124 [3.150]
  - 110 [3.023]
- **Height**:
  - 80 [2.032] dia. nom.
  - 11 [0.279] max.
- **Thread Size**:
  - 212 [5.385]
  - T85 [4.059]
  - 138 [3.525]
  - 126 [3.200]
  - 3-48 UNC-2A

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