MNP0014

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: $T_C = +25^\circ C$

<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</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>DIE Package (C22p)</td>
<td></td>
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<tr>
<td>Total Capacitance</td>
<td></td>
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<tr>
<td>Package Style:</td>
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<tr>
<td>ET47p</td>
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<tr>
<td>T54p</td>
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<tr>
<td>T55p</td>
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<tr>
<td>T89p</td>
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<tr>
<td>Series Resistance</td>
<td>$I_F = 100 mA$, 500 MHz</td>
<td>Ω</td>
<td>—</td>
<td>1.3</td>
<td>1.6</td>
</tr>
<tr>
<td>Lifetime</td>
<td>$I_F = 10 mA$, $I_R = 6 mA$, 50%</td>
<td>ns</td>
<td>—</td>
<td>750</td>
<td>—</td>
</tr>
<tr>
<td>I Layer</td>
<td></td>
<td>μm</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>$+10^\circ C/W$</td>
</tr>
<tr>
<td>Operating &amp; Storage Temp.</td>
<td>$-65^\circ C$ to $+150^\circ C$</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**

- Dimensions: 0.018 [0.965] 0.022 [0.559]
- Anode (C22) Cathode (C22P) 0.002 [0.050] Minimum
- Cathode (C22) Anode (C22P) 0.004 [0.101] 0.006 [0.101]

**ET47**

- Dimensions: 0.042 [1.067] 0.038 [0.965] 0.270 [6.858] Minimum 2 places
- Anode (ET47) Cathode (ET47P) 0.075 [1.905] 0.065 [1.651]
- Epoxy Encapsulation 0.035 [0.889] Maximum 0.005 [0.127] 0.003 [0.076]

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Outline Drawings

**T54 / T54p**

- Diameter: 86 [2.184] Dia. 78 [1.981]
- Ceramic Body: 12 [0.395] 10 [0.254]
- Cathode (T54) / Anode (T54p): 44 [1.118] 34 [0.864]
- Diameter: 52 [1.321] Dia. 48 [1.219]

**T55 / T55p**

- Diameter: 0.045 [1.397] 0.055 [1.143]
- Ceramic Body: 0.045 [1.397] 0.055 [1.295]

**T89 / T89p**

- 11 [0.279] max.
- 3-48 UNC-2A

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