K3313

Silicon Hyperabrupt Junction Varactor Diode

Features
- Compact 1.27 x 1.7 x 0.09 mm SMT Package
- Uniform Capacitance / Temperature Coefficient
- Available on Tape and Reel

Description
The K3313 silicon hyperabrupt junction varactor diode is designed for use in voltage controlled oscillators (VCO’s) with low tuning voltage operation.

Electrical Specifications:  $T_A = +25^\circ C$ (unless otherwise specified)

<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>$I_R = -10 \ \mu A$, DC</td>
<td>V</td>
<td>12.0</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Forward Voltage</td>
<td>$I_F = 100 \ \text{mA}$, DC</td>
<td>V</td>
<td>—</td>
<td>1.0</td>
<td></td>
</tr>
<tr>
<td>Total Capacitance</td>
<td>$V_R = -1.0 \ \text{V}$, 1 MHz</td>
<td>pF</td>
<td>20.0</td>
<td>8.5</td>
<td>22.0</td>
</tr>
<tr>
<td></td>
<td>$V_R = -2.5 \ \text{V}$, 1 MHz</td>
<td></td>
<td>8.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>$V_R = -4.0 \ \text{V}$, 1 MHz</td>
<td></td>
<td>4.6</td>
<td></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>Breakdown Voltage</td>
<td>12 Min. @ -10 μA</td>
</tr>
<tr>
<td>Moisture Sensitivity Level</td>
<td>1</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-55°C to +125°C</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-65°C to +200°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.

Handling Procedures
Please observe the following precautions to avoid damage:

Static Sensitivity
These electronic devices are sensitive to electrostatic discharge (ESD) and can be damaged by static electricity. Proper ESD control techniques should be used when handling these Class 0 (HBM) devices.
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