Red Enhanced Ultra Low Capacitance Silicon Photodiode
SD172-11-31-221

DESCRIPTION
The SD 172-11-31-221 is an ultra low capacitance silicon PIN photodiode, red enhanced, packaged in a leaded hermetic TO-5 metal package.

FEATURES
- Low Noise
- Red Enhanced
- High Shunt Resistance
- High Response

RELIABILITY
Contact Luna for recommendations on specific test conditions and procedures.

APPLICATIONS
- Military
- Industrial
- Medical

ABSOLUTE MAXIMUM RATINGS

<table>
<thead>
<tr>
<th>SYMBOL</th>
<th>MIN</th>
<th>MAX</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reverse Voltage</td>
<td>-</td>
<td>-</td>
<td>75 V</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-55</td>
<td>to</td>
<td>+150 °C</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-40</td>
<td>to</td>
<td>+125 °C</td>
</tr>
<tr>
<td>Soldering Temperature*</td>
<td>-</td>
<td>-</td>
<td>+240 °C</td>
</tr>
</tbody>
</table>

* 1/16 inch from case for 3 seconds max.

Information in this technical datasheet is believed to be correct and reliable. However, no responsibility is assumed for possible inaccuracies or omission. Specifications are subject to change without notice.
## Red Enhanced Ultra Low Capacitance Silicon Photodiode

### SD172-11-31-221

## OPTO-ELECTRICAL PARAMETERS

<table>
<thead>
<tr>
<th>PARAMETER</th>
<th>TEST CONDITIONS</th>
<th>MIN</th>
<th>TYP</th>
<th>MAX</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dark Current</td>
<td>( V_R = 50V )</td>
<td>-</td>
<td>35</td>
<td>147</td>
<td>nA</td>
</tr>
<tr>
<td>Junction Capacitance</td>
<td>( V_R = 0V, f = 1 MHz )</td>
<td>-</td>
<td>82</td>
<td>-</td>
<td>pF</td>
</tr>
<tr>
<td></td>
<td>( V_R = 50V, f = 1 MHz )</td>
<td>-</td>
<td>10</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Spectral Application Range</td>
<td>Spot Scan</td>
<td>350</td>
<td>-</td>
<td>1100</td>
<td>nm</td>
</tr>
<tr>
<td>Responsivity</td>
<td>( \lambda = 900nm, V_R = 0V )</td>
<td>0.50</td>
<td>0.55</td>
<td>-</td>
<td>A/W</td>
</tr>
<tr>
<td>Breakdown Voltage</td>
<td>( I = 10 \mu A )</td>
<td>-</td>
<td>75</td>
<td>-</td>
<td>V</td>
</tr>
<tr>
<td>Noise Equivalent Power</td>
<td>( V_R = 5V, \lambda = 950nm )</td>
<td>-</td>
<td>2.0x10^{-13}</td>
<td>-</td>
<td>W/\sqrt{Hz}</td>
</tr>
<tr>
<td>Response Time**</td>
<td>( RL = 50\Omega, V_R = 0V )</td>
<td>-</td>
<td>190</td>
<td>-</td>
<td>nS</td>
</tr>
<tr>
<td></td>
<td>( RL = 50\Omega, V_R = 50V )</td>
<td>-</td>
<td>13</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

**Response time of 10% to 90% is specified at 660nm wavelength light.

## TYPICAL PERFORMANCE

### SPECTRAL RESPONSE

![Spectral Response Graph](image-url)