**Features**

- Wide receiving angle
- Linear response vs. irradiance
- Fast switching time
- Side-looking package ideal for space limited applications

**Description**

The OP950 device consists of a PIN silicon photodiode molded in a clear epoxy package which allows spectral response from visible to infrared light wavelengths. The wide receiving angle provides relatively even reception over a large area. The side-looking package is designed for easy PC board mounting. This photodiode is mechanically and spectrally matched to Optek’s GaAs and GaAlAs series of infrared emitting diodes.

**Absolute Maximum Ratings** \((T_A = 25^\circ C\) unless otherwise noted)

- Reverse Breakdown Voltage \(= 60\) V
- Storage and Operating Temperature Range \(-40^\circ C\) to \(+100^\circ C\)
- Lead Soldering Temperature \([1/16\) inch \((1.6\) mm\) from case for 5 sec. with soldering iron\)] \(= 260^\circ C\)
- Power Dissipation \(= 100\) mW

**Notes:**

1. RMA flux is recommended. Duration can be extended to 10 sec. max. when flow soldering. Max. 20 grams force may be applied to leads when soldering.
2. Derate linearly \(1.67 \text{ mW/}^\circ C\) above \(25^\circ C\).
3. Light source is an unfiltered GaAs LED with a peak emission wavelength of 935nm and a radiometric intensity level which varies less than 10% over the entire lens surface of the photodiode being tested.
4. To calculate typical dark current in \(\mu A\), use the formula \(I_D = 10^{(0.042 T_A - 1.5)}\) where \(T_A\) is ambient temperature in \(^\circ C\).

**Typical Performance Curves**
**Type OP950**

**Electrical Characteristics**  \( T_A = 25^\circ C \) unless otherwise noted

<table>
<thead>
<tr>
<th>SYMBOL</th>
<th>PARAMETER</th>
<th>MIN</th>
<th>TYP</th>
<th>MAX</th>
<th>UNITS</th>
<th>TEST CONDITIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>( I_L )</td>
<td>Reverse Light Current</td>
<td>8</td>
<td>18</td>
<td>µA</td>
<td></td>
<td>( V_R = 5 \text{ V}, E_o = 1 \text{ mW/cm}^2 )</td>
</tr>
<tr>
<td>( I_D )</td>
<td>Reverse Dark Current</td>
<td>1</td>
<td>60</td>
<td>nA</td>
<td></td>
<td>( V_R = 30 \text{ V}, E_o = 0 )</td>
</tr>
<tr>
<td>( V_{(BR)} )</td>
<td>Reverse Breakdown Voltage</td>
<td>60</td>
<td></td>
<td>V</td>
<td></td>
<td>( I_R = 100 \mu A )</td>
</tr>
<tr>
<td>( V_F )</td>
<td>Forward Voltage</td>
<td></td>
<td></td>
<td>1.2</td>
<td>V</td>
<td>( I_F = 1 \text{ mA} )</td>
</tr>
<tr>
<td>( C_T )</td>
<td>Total Capacitance</td>
<td>4</td>
<td></td>
<td>pF</td>
<td></td>
<td>( V_R = 20 \text{ V}, E_o = 0, f = 1.0 \text{ MHz} )</td>
</tr>
<tr>
<td>( t_r, t_f )</td>
<td>Rise Time, Fall Time</td>
<td>5</td>
<td></td>
<td>ns</td>
<td></td>
<td>( V_R = 20 \text{ V}, \lambda = 850 \text{ nm}, R_L = 50 \Omega )</td>
</tr>
</tbody>
</table>

Typical Performance Curves

- Normalized Light Current vs Reverse Voltage
- Total Capacitance vs Reverse Voltage
- Normalized Light and Dark Current vs Ambient Temperature
- Light Current vs. Irradiance
- Switching Time Test Circuit
- Light Current vs. Angular Displacement

Optek reserves the right to make changes at any time in order to improve design and to supply the best product possible.

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