PNZ334 (PN334)  
PIN Photodiode

For optical fiber communication systems

- **Features**
  - Plastic type package (ø 5)
  - High coupling capability suitable for plastic fiber
  - High quantum efficiency
  - High-speed response

### Absolute Maximum Ratings (Ta = 25˚C)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Symbol</th>
<th>Ratings</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reverse voltage (DC)</td>
<td>V&lt;sub&gt;R&lt;/sub&gt;</td>
<td>30</td>
<td>V</td>
</tr>
<tr>
<td>Power dissipation</td>
<td>P&lt;sub&gt;D&lt;/sub&gt;</td>
<td>100</td>
<td>mW</td>
</tr>
<tr>
<td>Operating ambient temp.</td>
<td>T&lt;sub&gt;opr&lt;/sub&gt;</td>
<td>-25 to +85</td>
<td>°C</td>
</tr>
<tr>
<td>Storage temperature</td>
<td>T&lt;sub&gt;stg&lt;/sub&gt;</td>
<td>-30 to +100</td>
<td>°C</td>
</tr>
</tbody>
</table>

### Electro-Optical Characteristics (Ta = 25˚C)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Symbol</th>
<th>Conditions</th>
<th>min</th>
<th>typ</th>
<th>max</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dark current</td>
<td>I&lt;sub&gt;D&lt;/sub&gt;</td>
<td>V&lt;sub&gt;R&lt;/sub&gt; = 10V</td>
<td>0.1</td>
<td>10</td>
<td></td>
<td>nA</td>
</tr>
<tr>
<td>Photo current</td>
<td>I&lt;sub&gt;L&lt;/sub&gt;</td>
<td>V&lt;sub&gt;R&lt;/sub&gt; = 10V, L = 1000 lx&lt;sup&gt;*&lt;/sup&gt;</td>
<td>5</td>
<td>7</td>
<td>850</td>
<td>µA</td>
</tr>
<tr>
<td>Peak sensitivity wavelength</td>
<td>λ&lt;sub&gt;p&lt;/sub&gt;</td>
<td>V&lt;sub&gt;R&lt;/sub&gt; = 10V</td>
<td></td>
<td></td>
<td>850</td>
<td>nm</td>
</tr>
<tr>
<td>Response time</td>
<td>t&lt;sub&gt;r&lt;/sub&gt;, t&lt;sub&gt;f&lt;/sub&gt;&lt;sup&gt;*&lt;/sup&gt;</td>
<td>V&lt;sub&gt;R&lt;/sub&gt; = 10V, R&lt;sub)L&lt;/sub&gt; = 50Ω</td>
<td>2</td>
<td>ns</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Capacitance between pins</td>
<td>C&lt;sub&gt;t&lt;/sub&gt;</td>
<td>V&lt;sub&gt;R&lt;/sub&gt; = 0V, f = 1MHz</td>
<td>6</td>
<td></td>
<td></td>
<td>pF²</td>
</tr>
<tr>
<td>Acceptance half angle</td>
<td>θ</td>
<td>Measured from the optical axis to the half power point</td>
<td>70</td>
<td></td>
<td></td>
<td>deg.</td>
</tr>
</tbody>
</table>

<sup>*</sup> Measurements were made using a tungsten lamp (color temperature T = 2856K) as a light source.

<sup>*</sup>² Switching time measurement circuit

- t<sub>d</sub>: Delay time
- t<sub>r</sub>: Rise time (Time required for the collector photo current to increase from 10% to 90% of its final value)
- t<sub>f</sub>: Fall time (Time required for the collector photo current to decrease from 90% to 10% of its initial value)

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