AVALANCHE PHOTODIODES FOR ANALYTICAL APPLICATIONS

Product Description
C30927 series of quadrant Si Avalanche Photodiode and the C30985E multi-element APD array utilize the double-diffused "reach-through" structure. This structure provides ultra high sensitivity at 400-1000 nm.

The C30927 quadrant structure has a common avalanche junction, with separation of the quadrants achieved by segmentation of the light entry p+ surface opposite the junction. With this design, there is no dead space between the elements and therefore no loss of response at boresight.

The C30927EH-01, -02 and -03 are optimized for use at wavelengths of 1060, 900, and 800 nm respectively. Each device type will provide high responsivity and excellent performance when operated within about 50 nm of the specified wavelength.

The C30985E is a 25 element monolithic linear APD array having a high inter-electrode resistance with a 75 μm dead space between the elements. Packages have a common ground and bias with a separate lead for each element output.

Avalanche Photodiodes – Si APD Arrays

Applications
- Spectroscopy
- Particle detection
- Spot tracking and alignment systems
- Adaptive optics
- Lidar

Features and Benefits
- High quantum efficiency
- Hermetically sealed packages
- Monolithic chip with minimal dead space between elements
- Specific tailored wavelength response
- RoHS compliant

Product Table

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Number of Elements</th>
<th>Photo Sensitive Diameter</th>
<th>Responsivity A/W</th>
<th>Dark Current per Element nA</th>
<th>Spectral Noise Current pA/Hz</th>
<th>Capacitance @100kHz pf</th>
<th>Response Time ns</th>
<th>NEP fW/√Hz</th>
<th>NEP V</th>
</tr>
</thead>
<tbody>
<tr>
<td>C30927EH-01</td>
<td>4</td>
<td>1.5</td>
<td>15(1060 nm)</td>
<td>25</td>
<td>0.5</td>
<td>1</td>
<td>3</td>
<td>33(1060 nm)</td>
<td>275-425</td>
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<tr>
<td>C30927EH-02</td>
<td>4</td>
<td>1.5</td>
<td>62(900 nm)</td>
<td>25</td>
<td>0.5</td>
<td>1</td>
<td>3</td>
<td>16(900 nm)</td>
<td>275-425</td>
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<tr>
<td>C30927EH-03</td>
<td>4</td>
<td>1.5</td>
<td>55(800 nm)</td>
<td>25</td>
<td>0.5</td>
<td>1</td>
<td>3</td>
<td>9(800 nm)</td>
<td>275-425</td>
</tr>
<tr>
<td>C30985E</td>
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<td>0.3</td>
<td>31(900 nm)</td>
<td>1</td>
<td>0.1</td>
<td>0.5</td>
<td>2</td>
<td>3(900 nm)</td>
<td>250-425</td>
</tr>
</tbody>
</table>

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Package Drawing – C30927 Series

Package Drawing – C30985E