Si PIN photodiode
S6801/S6968 series

φ14 mm lens plastic package

S6801/S6968 series is a Si PIN photodiode molded into a plastic package with a φ14 mm lens. Four types are provided, S6801, S6968 with a clear plastic package and S6801-01, S6968-01 with a visible-cut package.

### Features
- Plastic packages with φ14 mm lens
- High-speed response (S6968 series): 50 MHz Typ. (VR=10 V, λ=850 nm)
- High sensitivity (S6801, S6968): 0.63 A/W (λ=850 nm)
- Directivity: 35 ° (half angle)
- Visible-cut type: S6801-01, S6968-01
- Active area size: φ14 mm (lens diameter)
- Effective active area: 150 mm²

### Applications
- Spatial light transmission
- Optical communication
- Optical data link
- High-speed optical measurement
- Optical switch
- Laser radar

### General ratings / Absolute maximum ratings

<table>
<thead>
<tr>
<th>Type No.</th>
<th>Package</th>
<th>Active area size</th>
<th>Effective active area</th>
<th>Reverse voltage VR Max. (V)</th>
<th>Operating temperature Topr (°C)</th>
<th>Storage temperature Tstg (°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>S6801</td>
<td>Plastic</td>
<td>φ14</td>
<td>150</td>
<td>35</td>
<td>-25 to +85</td>
<td>-40 to +100</td>
</tr>
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### Electrical and optical characteristics

<table>
<thead>
<tr>
<th>Type No.</th>
<th>Spectral response range λ (nm)</th>
<th>Peak sensitivity wavelength λp (nm)</th>
<th>Photo sensitivity S λ=850 nm (A/W)</th>
<th>Short circuit current Isc 100 lx 2856 K (μA)</th>
<th>Dark current ID VR=10 V (μA)</th>
<th>Temp. coefficient of ID TCID (times/°C)</th>
<th>Cut-off frequency fc VR=10 V RL=50 Ω λ=850 nm, -3 dB (MHz)</th>
<th>Terminal capacitance Ct VR=10 V f=1 MHz (pF)</th>
<th>Half * angle (degree)</th>
</tr>
</thead>
<tbody>
<tr>
<td>S6801</td>
<td>320 to 1100 960</td>
<td>0.57 0.63</td>
<td>95 120</td>
<td>0.5 10</td>
<td>1.15</td>
<td>7 15</td>
<td>40 80</td>
<td>30 50</td>
<td>±35</td>
</tr>
<tr>
<td>S6801-01</td>
<td>700 to 1100 920</td>
<td>0.5 0.55</td>
<td>64 80</td>
<td>0.5 5</td>
<td></td>
<td>10</td>
<td>50 100</td>
<td></td>
<td>±35</td>
</tr>
<tr>
<td>S6968</td>
<td>320 to 1060 920</td>
<td>0.57 0.63</td>
<td>83 104</td>
<td>0.5 10</td>
<td>1.15</td>
<td>7 15</td>
<td>40 80</td>
<td>30 50</td>
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</tr>
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<td>S6968-01</td>
<td>700 to 1060</td>
<td>0.5 0.55</td>
<td>57 72</td>
<td>0.5 5</td>
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<td>10</td>
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* Photocurrent generated in a photodiode varies depending on the incident light angle. The half angle is the incident light angle at which the photocurrent is 50% of that generated when the incident light is perpendicular to the photodiode.
Spectral response

**S6801 series**

![Spectral response for S6801](image1)

**S6968 series**

![Spectral response for S6968](image2)

**Dark current vs. reverse voltage**

**S6801 series**

![Dark current for S6801](image3)

**S6968 series**

![Dark current for S6968](image4)

Cut-off frequency vs. reverse voltage

![Cut-off frequency vs. reverse voltage](image5)

Terminal capacitance vs. reverse voltage

![Terminal capacitance vs. reverse voltage](image6)

Directivity

![Directivity](image7)

Dimensional outline

(unit: mm, tolerance unless otherwise noted: ±0.1)

![Dimensional outline](image8)