Si photodiodes

S5627-01, etc.

Photodiodes molded into clear plastic packages

These are Si photodiodes molded into clear plastic packages. Two types are available with sensitivity in the visible range and in the visible to near IR range. Two photosensitive areas of 1.3 × 1.3 mm and 2.4 × 2.8 mm are also available. The S5627-01 provides a spectral response characteristic similar to the visible range sensitivity without using visual-compensated filters.

Features
- S5627-01: Visible range (Filterless type)
- S4797-01, S6931-01: Visible to near IR range (Suppressed IR sensitivity type)
- S2833-01, S4011-06DS: Visible to near IR range

Applications
- Exposure meters
- Illuminometers
- Stroboscope light control
- Copier
- Display light control
- Optical switches, etc.

Structure / Absolute maximum ratings

<table>
<thead>
<tr>
<th>Type no.</th>
<th>Package</th>
<th>Dimensional outline</th>
<th>Photosensitive area size</th>
<th>Effective photosensitive area</th>
<th>Absolute maximum ratings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>(mm)</td>
<td>(mm²)</td>
<td></td>
<td>Reverse voltage Vr max (V)</td>
</tr>
<tr>
<td>S5627-01</td>
<td>DIP type</td>
<td>(1)</td>
<td>1.3 × 1.3</td>
<td>1.6</td>
<td>10</td>
</tr>
<tr>
<td>S6931-01</td>
<td></td>
<td>(2)</td>
<td>2.4 × 2.8</td>
<td>6.6</td>
<td></td>
</tr>
<tr>
<td>S4797-01</td>
<td></td>
<td>(3)</td>
<td>1.3 × 1.3</td>
<td>1.6</td>
<td></td>
</tr>
<tr>
<td>S2833-04</td>
<td></td>
<td>(2)</td>
<td>2.4 × 2.8</td>
<td>6.6</td>
<td></td>
</tr>
<tr>
<td>S2833-01</td>
<td></td>
<td>(4)</td>
<td>2.4 × 2.8</td>
<td>6.6</td>
<td></td>
</tr>
<tr>
<td>S4011-06DS</td>
<td></td>
<td>(5)</td>
<td>1.3 × 1.3</td>
<td>1.6</td>
<td></td>
</tr>
</tbody>
</table>

*1: No dew condensation
When there is a temperature difference between a product and the surrounding area in high humidity environment, dew condensation may occur on the product surface. Dew condensation on the product may cause deterioration in characteristics and reliability.

Note: Exceeding the absolute maximum ratings even momentarily may cause a drop in product quality. Always be sure to use the product within the absolute maximum ratings.

Electrical and optical characteristics (Typ. Ta=25 °C, unless otherwise noted)

<table>
<thead>
<tr>
<th>Type no.</th>
<th>Spectral response range λ (nm)</th>
<th>Peak sensitivity wavelength λp (nm)</th>
<th>Photosensitivity S (A/W)</th>
<th>Infrared sensitivity ratio</th>
<th>Short circuit current Isc 100 lx (μA)</th>
<th>Temp. coefficient of Isc (%/°C)</th>
<th>Dark current Id</th>
<th>Temp. coefficient of Id</th>
<th>Rise time tr</th>
<th>Terminal capacitance CQ</th>
<th>Shunt resistance Rsh</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>GaP LED 560 nm He-Ne Laser 633 nm</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Min. (GΩ) Typ. (GΩ)</td>
</tr>
<tr>
<td>S5627-01</td>
<td>320 to 840</td>
<td>540</td>
<td>0.3</td>
<td>0.2</td>
<td>35</td>
<td>0.25</td>
<td>0.25</td>
<td>50</td>
<td>1.13</td>
<td>2</td>
<td>700</td>
</tr>
<tr>
<td>S6931-01</td>
<td>320 to 1000</td>
<td>720</td>
<td>0.48</td>
<td>0.2</td>
<td>42</td>
<td>1.2</td>
<td>0.1</td>
<td>20</td>
<td>1.12</td>
<td>0.5</td>
<td>200</td>
</tr>
<tr>
<td>S4797-01</td>
<td></td>
<td></td>
<td>0.4</td>
<td>0.37</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S2833-04</td>
<td></td>
<td></td>
<td>0.33</td>
<td>0.38</td>
<td>6.5</td>
<td>0.1</td>
<td>1.9</td>
<td>10</td>
<td>1.12</td>
<td>2.5</td>
<td>700</td>
</tr>
<tr>
<td>S2833-01</td>
<td></td>
<td></td>
<td>0.58</td>
<td>0.38</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.5</td>
<td>100</td>
</tr>
<tr>
<td>S4011-06DS</td>
<td></td>
<td></td>
<td>0.58</td>
<td>0.38</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

This product does not support lead-free soldering. For details on reflow soldering conditions for surface-mount components, please contact our sales office.

www.hamamatsu.com
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**Spectral response**

(Typ. Ta=25 °C)

![Spectral response graph](image)

**Dark current vs. reverse voltage**

(Typ. Ta=25 °C)

![Dark current vs. reverse voltage graph](image)

**Rise time vs. load resistance**

(Typ. Ta=25 °C, Ve=0 V)

![Rise time vs. load resistance graph](image)

**Shunt resistance vs. ambient temperature**

(Typ. Ve=10 mV)

![Shunt resistance vs. ambient temperature graph](image)
### Si photodiodes | S5627-01, etc.

#### Dimensional outlines (unit: mm)

(1) S5627-01

![DIAGRAM]

Photosensitive surface

1. Cathode
2. NC
3. Anode
4. NC (short lead)

Tolerance unless otherwise noted: ±0.1
Position accuracy of photosensitive area center with respect to the package dimensions marked *

\[ X, Y \leq \pm 0.2 \]
\[ \theta \leq \pm 2^\circ \]

NC terminal should be open-circuited at use.

(2) S6931-01, S2833-04

![DIAGRAM]

Photosensitive surface

1. NC
2. Cathode
3. Anode
4. Cathode

Tolerance unless otherwise noted: ±0.1
Position accuracy of photosensitive area center with respect to the package dimensions marked *

\[ X, Y \leq \pm 0.2 \]
\[ \theta \leq \pm 2^\circ \]

Lead surface finish: Silver plating
Standard packing: Stick (50 pcs/stick)
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(3) S4797-01

Tolerance unless otherwise noted: ±0.1
Position accuracy of photosensitive area center with respect to the package dimensions marked *

- X ≤±0.2
- θ ≤±2°

Lead surface finish: Silver plating
Standard packing: Stick (50 pcs/stick)

(4) S2833-01

Tolerance unless otherwise noted: ±0.1
Position accuracy of photosensitive area center with respect to the package dimensions marked *

- X, Y ≤±0.2
- θ ≤±2°

Lead surface finish: Silver plating
Standard packing: Stick (50 pcs/stick)
Si photodiodes

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(5) S4011-06DS

5.0 ± 0.2

4.7

4.8

4.1 ± 0.2

[Including burr]

1.8

0.8

0.5

5°

10°

0.7 ± 0.3

0.7 ± 0.3

0.25

0.1 ± 0.1

10°

5°

Anode

Cathode

NC

Cathode

Photosensitive surface

Tolerance unless otherwise noted: ±0.1
Position accuracy of photosensitive area center with respect to the package dimensions marked *

X, Y≤±0.2

θ≤±2°

Lead surface finish: Silver plating
Standard packing: Stick (50 pcs/stick)

Related information

www.hamamatsu.com/sp/ssp/doc_en.html

- Precautions
- Disclaimer
- Metal, ceramic, plastic package products
- Surface mount type products
- Technical information
- Si photodiode/Application circuit examples

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