UV - Photodetector with integrated amplifier

| JIC 157 A | JIC 158 A | JIC 159 A |

**characteristics:**
- Integrated UV-A filter
- Spectral range: 315 ... 395 nm
- Active area: 0.965 mm²
- Responsivity, decadic staggering: 0.3/3/30 mV/nW
- Extra sensor pin for external adjustment of gain and bandwidth
- Single supply voltage
- Sensor assembly isolated to ground
- Hermetically welded TO5-metal/glass package
- Components are in conformity with RoHS and WEEE

**applications:**
- Selective UV-A-measurement
- Control of sterilization lamps
- Flamedetection and flamecontrol
- Control of irradiancy in varnish and adhesive hardening

**absolute maximum ratings:**
- Supply voltage: +5.5 V
- Working temperature range: -25 °C ... +85 °C
- Storage temperature range: -40 °C ... +100 °C
- Welding temperature (5s): 300 °C

**technical data:**

Common test conditions, as not otherwise specified: \( T_A = 25 \, ^\circ C, V_S = +5 \, V \)

Typical values, maximum values in brackets

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Test Condition</th>
<th>JIC 157A</th>
<th>JIC 158A</th>
<th>JIC 159A</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feedback resistor</td>
<td></td>
<td>10</td>
<td>100</td>
<td>1.000</td>
<td>MΩ</td>
</tr>
<tr>
<td>Dark offset voltage</td>
<td>( E = 0 , l x ), ( B = 1 , kHz )</td>
<td>± 1</td>
<td>± 2</td>
<td>± 3</td>
<td>mV</td>
</tr>
<tr>
<td>Noise voltage</td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td>mV rms</td>
</tr>
<tr>
<td>Max. spectral responsivity</td>
<td>( \lambda = 340 , nm )</td>
<td>0.3</td>
<td>3</td>
<td>30</td>
<td>mV/nW</td>
</tr>
<tr>
<td>Risetime</td>
<td></td>
<td>30</td>
<td>150</td>
<td>600</td>
<td>µs</td>
</tr>
<tr>
<td>Bandwidth</td>
<td>( -3 , dB )</td>
<td>10</td>
<td>2</td>
<td>0.5</td>
<td>kHz</td>
</tr>
<tr>
<td>Saturation voltage</td>
<td>( R_L = 2 , kΩ )</td>
<td>+ 4.95 (+ 4.8)</td>
<td></td>
<td></td>
<td>V</td>
</tr>
<tr>
<td>Short current</td>
<td></td>
<td>± 50</td>
<td></td>
<td></td>
<td>mA</td>
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<tr>
<td>Supply voltage</td>
<td></td>
<td>+ 2.7...+ 5</td>
<td></td>
<td></td>
<td>V</td>
</tr>
<tr>
<td>Current consumption</td>
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<td>750 (1100)</td>
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<td></td>
<td>µA</td>
</tr>
</tbody>
</table>

rev2 (03/2009)
relative spectral responsivity

pin configuration

package dimension

application hints:

- If an external resistor for reduction of gain is used, please make sure that length of connectors is as short as possible to reduce noise and capacitive interference.

- If internally adjusted gain is used only, please cut pin "1".