UV - Photodetector with integrated amplifier

**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: \( T_A = 25 \, ^\circ C, \, V_s = +5 \, V \)
typ. values, maximum values in brackets

<table>
<thead>
<tr>
<th>parameter</th>
<th>test condition</th>
<th>JIC157A</th>
<th>JIC158A</th>
<th>JIC159A</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 , lx )</td>
<td>± 1</td>
<td>± 2</td>
<td>± 3</td>
<td>mV</td>
</tr>
<tr>
<td>noise voltage</td>
<td>( B = 1 , kHz )</td>
<td>1</td>
<td></td>
<td></td>
<td>mVrms</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_i = 2 , k\Omega )</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>
<td></td>
<td>750 (1100)</td>
<td></td>
<td></td>
<td>µA</td>
</tr>
</tbody>
</table>
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”. 

1  $R_f$
2  Out
3  $V_S$
4  GND
5  Case

280 300 320 340 360 380 400 420
wavelength in nm