UV - Photodetector with integrated amplifier

**characteristics:**
- integrated UV-A filter
- spectral range 315 ... 395 nm
- active area 0,22 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
- flamemtetection and flamecontrol
- control of irradiancy in varnish and adhesive hardening

**absolute maximum ratings:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Test Condition</th>
<th>JIC137A</th>
<th>JIC138A</th>
<th>JIC139A</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>λ = 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</td>
<td>(+ 4,8)</td>
<td></td>
<td>V</td>
</tr>
<tr>
<td>short current</td>
<td></td>
<td>± 50</td>
<td></td>
<td></td>
<td>mA</td>
</tr>
<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>

**technical data:**

common test conditions, as not otherwise specified: T_A = 25 °C, V_s = +5 V

typ. values, maximum values in brackets
relative spectral responsivity

![Graph showing relative spectral responsivity]

wavelength in nm

pin configuration

![Pin configuration diagram]

1. $R_f$
2. Out
3. $V_s$
4. GND
5. Case

package dimension

![Package dimension diagram]

- 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“.