UV - Photodetector with integrated amplifier

**characteristics:**
- integrated UV-B filter
- spectral range: 280 ... 325 nm
- active area: 0.055 mm²
- responsivity, decadic staggering: 0.4/4/40 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-measurement
- control of UV-B part of UV-lamps
- 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: \( T_A = 25 \, ^°C \), \( V_S = +5 \, V \)

<table>
<thead>
<tr>
<th>parameters</th>
<th>test condition</th>
<th>JIC127B</th>
<th>JIC128B</th>
<th>JIC129B</th>
<th>unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>feedback resistor</td>
<td></td>
<td>10</td>
<td>100</td>
<td>1000</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>mV&lt;sub&gt;rms&lt;/sub&gt;</td>
</tr>
<tr>
<td>max. spectral responsivity</td>
<td>( \lambda = 315 , nm )</td>
<td>0.4</td>
<td>4</td>
<td>40</td>
<td>mV/nW</td>
</tr>
<tr>
<td>risetime</td>
<td></td>
<td>20</td>
<td>100</td>
<td>700</td>
<td>µs</td>
</tr>
<tr>
<td>bandwidth</td>
<td>( -3 , dB )</td>
<td>15</td>
<td>3</td>
<td>0.5</td>
<td>kHz</td>
</tr>
<tr>
<td>saturation voltage</td>
<td>( R_L = 2 , kΩ )</td>
<td></td>
<td>4,95 (+ 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>

rev2 (03/2009)
relative spectral responsivity

pin configuration

package dimensions

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".