UV - Photodetector with integrated amplifier

**JIC 127 C**
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**characteristics:**
- integrated UV-C filter
- spectral range: 210 ... 280 nm
- active area: 0.055 mm²
- responsivity, decadic staggering: 0.8/8/80 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 sterilization lamps
- flamemodulation and flamedetection
- 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>JIC127C</th>
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<th>JIC129C</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>mV rms</td>
</tr>
<tr>
<td>max. spectral responsivity</td>
<td>$\lambda = 254 , nm$</td>
<td>0.6</td>
<td>6</td>
<td>60</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>+ 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>
</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>
relative spectral responsivity

[Graph showing relative spectral responsivity with wavelength on the x-axis from 200 to 400 nm and relative spectral responsivity on the y-axis from 0 to 1.]

pin configuration

- 1 R\textsubscript{f}
- 2 Out
- 3 V\textsubscript{s}
- 4 GND
- 5 Case

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 \textquotedblleft 1\textquotedblright. 