UV - Photodetector with integrated amplifier

**characteristics:**
- integrated UV-BC filter
- spectral range: 280 ... 305 nm
- active area: 0,22 mm²
- responsivity, decadic staggering: 0,7/7/70 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-BC-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>JIC147BC</th>
<th>JIC148BC</th>
<th>JIC149BC</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>( \pm 1 )</td>
<td>( \pm 2 )</td>
<td>( \pm 3 )</td>
<td>mV</td>
</tr>
<tr>
<td>noise voltage</td>
<td>( B = 1 ) kHz</td>
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<td></td>
<td></td>
<td>mV rms</td>
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<tr>
<td>max. spectral responsivity</td>
<td>( \lambda = 254 ) nm</td>
<td>0,7</td>
<td>7</td>
<td>70</td>
<td>mV/nW</td>
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<tr>
<td>risetime</td>
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<td>30</td>
<td>150</td>
<td>600</td>
<td>μs</td>
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<tr>
<td>bandwidth</td>
<td>( -3 ) dB</td>
<td>10</td>
<td>2</td>
<td>0,5</td>
<td>kHz</td>
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<tr>
<td>saturation voltage</td>
<td>( R_s = 2 ) kΩ</td>
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<td></td>
<td></td>
<td>V</td>
</tr>
<tr>
<td>short current</td>
<td></td>
<td>( \pm 50 )</td>
<td></td>
<td></td>
<td>mA</td>
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<tr>
<td>supply voltage</td>
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<td>+ 2,7...+ 5</td>
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<td></td>
<td>V</td>
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<tr>
<td>current consumption</td>
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<td>750 (1100)</td>
<td></td>
<td></td>
<td>μA</td>
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</tbody>
</table>
relative spectral responsivity

![Graph showing relative spectral responsivity](image)

**pin configuration**

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

**package dimension**

![Package dimension diagram](image)

**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 \(1\).