UV - Photodetector with integrated amplifier

JIC 117 A
JIC 118 A
JIC 119 A

characteristics:
- integrated UV-A filter
- spectral range 315...395 nm
- active area 0,055 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-measurement
- control of UV-A 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
typ. values, maximum values in brackets

<table>
<thead>
<tr>
<th>parameters</th>
<th>test condition</th>
<th>JIC117A</th>
<th>JIC118A</th>
<th>JIC119A</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>
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<tr>
<td>max. spectral responsivity</td>
<td>λ = 340 nm</td>
<td>0,3</td>
<td>3</td>
<td>30</td>
<td>mV/mW</td>
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<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>
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<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>
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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

![Graph showing relative spectral responsivity against wavelength in nm.]

wavelength in nm

0.0, 0.2, 0.4, 0.6, 0.8, 1.0

280, 300, 320, 340, 360, 380, 400, 420

pin configuration

<table>
<thead>
<tr>
<th>Pin</th>
<th>Description</th>
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<tbody>
<tr>
<td>1</td>
<td>$R_f$</td>
</tr>
<tr>
<td>2</td>
<td>Out</td>
</tr>
<tr>
<td>3</td>
<td>$V_S$</td>
</tr>
<tr>
<td>4</td>
<td>GND</td>
</tr>
<tr>
<td>5</td>
<td>Case</td>
</tr>
</tbody>
</table>

package dimensions

![Diagram showing 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 capacitative interference.

- If internally adjusted gain is used only, please cut pin “1”.