SiC - photodiode JEA0,1L

Preliminary data sheet

Characteristics:
- Spectral range: 210 ... 380 nm
- Active area: 0.2 mm²
- High UV response: 0.18 A/W
- TO 39-package
- Cap with lenscap
- Components are in conformity with RoHS and WEEE

Applications:
- UV-measurement only
- UV-source control (for instance in sterilizers)
- Flamedetection

Maximum ratings:
- Maximum reverse voltage: 20 V
- Operating temperature range: -40 °C ... 125 °C
- Storage temperature range: -40 °C ... 125 °C
- Soldering temperature (3s): 260 °C

Technical data:

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Test conditions</th>
<th>Min.</th>
<th>Typ.</th>
<th>Max.</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active area 1)</td>
<td></td>
<td>2,75</td>
<td></td>
<td></td>
<td>mm²</td>
</tr>
<tr>
<td>Spectral range</td>
<td></td>
<td>205</td>
<td>355</td>
<td></td>
<td>nm</td>
</tr>
<tr>
<td>Maximum of spectral responsivity</td>
<td>( \lambda_{\text{max}} = 265 \text{ nm} )</td>
<td>0,18</td>
<td></td>
<td></td>
<td>A/W</td>
</tr>
<tr>
<td>Absolute spectral responsivity</td>
<td>( \lambda = 254 \text{ nm} )</td>
<td>0,16</td>
<td></td>
<td></td>
<td>A/W</td>
</tr>
<tr>
<td>Short current (sunlight)</td>
<td>Bright sun</td>
<td>200</td>
<td></td>
<td></td>
<td>nA</td>
</tr>
<tr>
<td></td>
<td>Cloudy</td>
<td>80</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dark current ( I_R )</td>
<td>( V_R = 1 \text{ V} )</td>
<td>10</td>
<td></td>
<td></td>
<td>fA</td>
</tr>
<tr>
<td>Capacitance</td>
<td></td>
<td>30</td>
<td></td>
<td></td>
<td>pF</td>
</tr>
</tbody>
</table>

1) Effective active area because of focusing of light by the lens.
1 anode
2 cathode & case

The application example shows a typical circuit. $R_f$ is responsible for the gain of the circuit. $C_f$ compensates the reverse junction capacitance of the photodiode and input capacitance of the OPV. The exact value of $C_f$ depends on $R_f$, used OPV and capacitance of the circuit. A typical value is 1 pF.

The diagram shows dependence of amplitude of the application circuit with AD795, $R_f = 50 \, \text{M}\Omega$ and $C_f = 0.5 \, \text{pF}$. 