SiC - photodiode JEC 0,1 ID

characteristics:
- spectral range: 210 ... 380 nm
- active SiC-chip area: 0,055 mm²
- integrated diffusor
- sensor isolated to package
- TO 39-package

applications:
- UV-measurement only
- UV-source control
- flame detection

maximum ratings:
- reverse voltage: 20 V
- operating temperature range: -25 °C ... 70 °C
- storage temperature range: -40 °C ... 100 °C
- soldering temperature (3s): 260 °C

technical data:

<table>
<thead>
<tr>
<th>parameter</th>
<th>test condition</th>
<th>min.</th>
<th>typ.</th>
<th>max.</th>
<th>unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>sensitive area (diffusor)</td>
<td></td>
<td></td>
<td>16</td>
<td></td>
<td>mm²</td>
</tr>
<tr>
<td>spectral range</td>
<td></td>
<td>210</td>
<td></td>
<td>380</td>
<td>nm</td>
</tr>
<tr>
<td>maximum of spectral responsivity *</td>
<td>λmax = 275 nm</td>
<td>0,25</td>
<td></td>
<td></td>
<td>mA/W</td>
</tr>
<tr>
<td>absolute spectral responsivity *</td>
<td>λ = 254 nm</td>
<td>0,18</td>
<td></td>
<td></td>
<td>mA/W</td>
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<tr>
<td>dark current IR</td>
<td>V_R = 1 V</td>
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<td></td>
<td>fA</td>
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<tr>
<td>short current (sun light)</td>
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<td>50</td>
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<td>20</td>
<td>nA</td>
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<tr>
<td>capacitance</td>
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<td>21</td>
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<td></td>
<td>pF</td>
</tr>
</tbody>
</table>

(*) based on sensitive area of diffusor

rev 1 (07/2009)
The application example shows a typical circuit. $R_f$ is responsible for the gain of the circuit. $C_r$ compensates the reverse junction capacitance of the photodiode and input capacitance of the OPV. The exact value of $C_r$ 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 OPA 111, $R_f = 50 \, \text{M}\Omega$ and $C_r = 0.5 \, \text{pF}$. 

1 kathode
2 anode
3 case