SiC-photodiodes
JEC1,6 / JEC5

preliminary data sheet

characteristics:
- Large area monolithic SiC photodiodes
- Active area: 1.55 or 5 mm²
- Spectral range: 215 ... 360 nm
- High UV-responsivity: 0.16 A/W
- Hermetically sealed TO39-package
- Components are ROHS and WEE conform

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

maximum ratings:
- Reverse voltage: 20 V
- Operating temperature range: -40 °C ... 100 °C
- Storage temperature range: -40 °C ... 100 °C
- Soldering temperature (3s): 260 °C

technical data:

<table>
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<tr>
<th>parameter</th>
<th>test condition</th>
<th>JEC1,6</th>
<th>JEC5</th>
<th>unit</th>
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</thead>
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<tr>
<td>Active area</td>
<td>test condition</td>
<td>JEC1,6</td>
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<tr>
<td>Maximum of spectral responsivity</td>
<td></td>
<td>0.16</td>
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<td>A/W</td>
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<tr>
<td>Spectral range</td>
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<td>215</td>
<td>215</td>
<td>360 nm</td>
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<tr>
<td>Absolute spectral responsivity</td>
<td></td>
<td>0.14</td>
<td>0.14</td>
<td>A/W</td>
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<tr>
<td>Dark current I_D</td>
<td>E = 0 lx</td>
<td>100</td>
<td>200</td>
<td>fA</td>
</tr>
<tr>
<td>Rise time of photocurrent</td>
<td>R_L = 50 Ω, λ = 254 nm, I_P = 10 μA</td>
<td>tbc</td>
<td>tbc</td>
<td>ns</td>
</tr>
<tr>
<td>Capacitance</td>
<td>F = 1 MHz, E = 0 lx</td>
<td>250</td>
<td>1.000</td>
<td>pF</td>
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</tbody>
</table>
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Relative spectral responsivity

Package dimensions

Application example

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 the input capacitance of the OP-amp. The exact value of \( C_f \) depends on \( R_f \) used OP-amp and capacitance of the circuit. A typical value is 1 pF.

The chart shows dependence of amplitude of the application circuit with OP-amp = AD795, \( R_f = 10 \, M\Omega \) and \( C_f = 1 \, pF \).