SiC-Photodiode
JEA0,25L  JEAC0,25L

preliminary data sheet

characteristics :

- low cost SiC-Photodiode with lens cap
- active area: 0,25 mm²
- spectral range: 205 … 355 nm
- high UV-responsivity: 0,18 A/W
- hermetically sealed TO-package
- option for isolated assembly of photodiode
- HT-option for extended working temperature range 150°C
- RoHS, REACH and WEEE conform

applications :

- optical measurements in UV-range
- control of sterilization lamps
- flame control

absolute maximum ratings :

- reverse voltage   10 V
- operating temperature range - 40 °C ... 125 °C
- storage temperature range   - 40 °C ... 125 °C
- soldering temperature (3s)  260 °C

technical data :

test conditions, as not otherwise specified:  Tₐ = 25 °C , Vᵣ = 0 V

<table>
<thead>
<tr>
<th>parameter</th>
<th>Test - conditions</th>
<th>JEA0,25L</th>
<th>JEAC0,25L</th>
<th>unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>active area</td>
<td></td>
<td>0,55 x 0,55</td>
<td>mm²</td>
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<td>spectral range</td>
<td></td>
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<tr>
<td>λₘᵟᵫ</td>
<td>S = 0,1 x Sₘᵅᵫ</td>
<td>205</td>
<td>355</td>
<td>nm</td>
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<tr>
<td>λₘᵬᵫ</td>
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<td></td>
<td>nm</td>
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<tr>
<td>maximum of spectral</td>
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<td>265</td>
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<td>nm</td>
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<td>responsivity</td>
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<tr>
<td>maximum sensitivity Sₘᵅᵫ</td>
<td>λ = 265 nm</td>
<td>0,18</td>
<td>A/W</td>
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<td>absolute sensitivity S₂₅₄ₙₘ</td>
<td>λ = 254 nm</td>
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<td>dark current Iᵣ</td>
<td>Vᵣ = 1 V</td>
<td>25</td>
<td>fA</td>
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<td>junction capacitance C</td>
<td>f = 10 kHz</td>
<td>75</td>
<td>pF</td>
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</table>
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Relative spectral sensitivity

- Graph showing relative spectral sensitivity vs. wavelength in nm.

Relative angular response

- Graph showing relative angular response vs. angle in degrees.

Package dimensions

- Diagram illustrating the package dimensions of JEA 0,25L and JEAC 0,25L:
  - JEA 0,25L: 1 Anode, 2 Cathode + Case
  - JEAC 0,25L: 1 Cathode, 2 Anode + Case

Bottom view

- Diagram showing the bottom view of the photodiodes.
The application example shows a typical circuit. $R_i$ 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 $R_i$, used OP-amp and capacitance of the circuit. A typical value is 1pF. The chart shows dependence of amplitude of the application circuit with OP-amp = AD795, $R_i = 10$ MΩ and $C_f = 1$pF.