SiC-Photodiode with integrated filter
JEAO,1C; JEA0,1BC; JEA0,1B

characteristics:
- small area SiC-photodiode
- active area: 0.1 mm²
- filter option for UVC-, UVB- and UVBC-range
- more filter options on request
- hermetically sealed TO-package
- RoHS, REACH and WEEE compliant

applications:
- optical measurement in UV-range with limited spectral range
- control of sterilization lamps
- flame control
- sun light measurement

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: $T_A = 25$ °C, $V_R = 0$ V

<table>
<thead>
<tr>
<th>parameter</th>
<th>test condition</th>
<th>JEA0,1C</th>
<th>JEA0,1BC</th>
<th>JEA0,1B</th>
<th>unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>active area</td>
<td></td>
<td>0.365x0.365</td>
<td></td>
<td></td>
<td>mm²</td>
</tr>
<tr>
<td>spectral range</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>$\lambda_{min}$</td>
<td>$S = 0.1 \times S_{max}$</td>
<td>225</td>
<td>228</td>
<td>265</td>
<td>nm</td>
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<tr>
<td>$\lambda_{max}$</td>
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<td>280</td>
<td>322</td>
<td>322</td>
<td>nm</td>
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<tr>
<td>wavelength of peak response</td>
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<td>265</td>
<td>275</td>
<td>300</td>
<td>nm</td>
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<tr>
<td>peak response $S_{max}$</td>
<td>$S = S_{max}$</td>
<td>0.18</td>
<td>0.19</td>
<td>0.12</td>
<td>A/W</td>
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<tr>
<td>dark current $I_R$</td>
<td>$V_R = 1$ V</td>
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<td>10</td>
<td></td>
<td>fA</td>
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<tr>
<td>junction capacity C</td>
<td>$f = 10$ kHz</td>
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<td>30</td>
<td></td>
<td>pF</td>
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<tr>
<td>field of view (FOV)</td>
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<td>±45</td>
<td>±45</td>
<td>±45</td>
<td>Grad</td>
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<tr>
<td>weight</td>
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<td>0.92</td>
<td>0.92</td>
<td>1.06</td>
<td>Gramm</td>
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<td>height of package H</td>
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<td>4.5</td>
<td>4.5</td>
<td>6.8</td>
<td>mm</td>
</tr>
</tbody>
</table>
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JEAO,1C; JEAO,1BC; JEAO,1B

**relative spectral responsivity**

![Graph showing relative spectral responsivity for JEAO,1C, JEAO,1BC, and JEAO,1B.]

**package dimension**

![Diagram showing package dimensions: Ø 8.3, Ø 6.1, 1.6, 13.5, 0.45.]

**bottom view**

1 anode
2 cathode & case
The chart shows dependence of amplitude of the application circuit with OP-amp = AD795, $R_f = 10 \ M\Omega$ and $C_f = 1 \ pF$

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, $R_i = 10 \ M\Omega$ and $C_i = 1 \ pF$