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

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:  TA = 25 °C , VR = 0 V

<table>
<thead>
<tr>
<th>parameter</th>
<th>test condition</th>
<th>JEAO,1C</th>
<th>JEAO,1BC</th>
<th>JEAO,1B</th>
<th>unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>active area</td>
<td></td>
<td>0,365x0,365</td>
<td>mm²</td>
<td></td>
<td></td>
</tr>
<tr>
<td>spectral range</td>
<td></td>
<td>225</td>
<td>228</td>
<td>265</td>
<td>nm</td>
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<tr>
<td>S = 0,1 * S_max</td>
<td></td>
<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>VR = 1 V</td>
<td>10</td>
<td></td>
<td></td>
<td>fA</td>
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<tr>
<td>junction capacity C</td>
<td>f = 10 kHz</td>
<td>±45</td>
<td>±45</td>
<td>±45</td>
<td>Grad</td>
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<tr>
<td>field of view (FOV)</td>
<td></td>
<td>4,5</td>
<td>4,5</td>
<td>6,8</td>
<td>mm</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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<tr>
<td>height of package H</td>
<td></td>
<td>4,5</td>
<td>4,5</td>
<td>6,8</td>
<td>mm</td>
</tr>
</tbody>
</table>
SiC-Photodiode with integrated filter
JEA0,1C; JEA0,1BC; JEA0,1B

relative spectral responsivity

![Graph showing relative spectral responsivity for JEA0,1C, JEA0,1BC, and JEA0,1B.]

package dimension

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

bottom view

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

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 $C_r$ depends on $R_i$, used OP-amp and capacitance of the circuit. A typical value is $1 \, \text{pF}$.

The chart shows dependence of amplitude of the application circuit with OP-amp = AD795, $R_f = 10 \, \text{M} \Omega$ and $C_r = 1 \, \text{pF}$.