SiC-Photodiode
JEAO,05; JEAO,05S; JEAO,05SS

characteristics:
- low cost SiC-photodiode
- active area: 0,05 mm²
- spectral range: 210 ... 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 20 V
- operating temperature range - 40 °C ... 125 °C
- storage temperature range - 40 °C ... 125 °C
- soldering temperature (3s) 300 °C

technical data:

<table>
<thead>
<tr>
<th>parameter</th>
<th>test condition</th>
<th>JEA0,05 / JEA0,05I</th>
<th>JEA0,05S / JEA0,05ISZ</th>
<th>JEA0,05SS / JEA0,05SSZ</th>
<th>unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>active area</td>
<td></td>
<td>0,288x0,288</td>
<td>mm²</td>
<td></td>
<td></td>
</tr>
<tr>
<td>spectral range</td>
<td></td>
<td>S = 0,1 x S_{max}</td>
<td>210</td>
<td>355</td>
<td>nm</td>
</tr>
<tr>
<td>λ_{min}, λ_{max}</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>nm</td>
</tr>
<tr>
<td>wavelength of peak response</td>
<td></td>
<td>265</td>
<td>nm</td>
<td></td>
<td></td>
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<tr>
<td>peak response S_{max}</td>
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<td>λ = 265 nm</td>
<td>0,18</td>
<td></td>
<td>A/W</td>
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<tr>
<td>spectral response S_{254nm}</td>
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<td>λ = 254 nm</td>
<td>0,16</td>
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<td>A/W</td>
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<tr>
<td>dark current I_{R}</td>
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<td>V_{R} = 1 V</td>
<td>10</td>
<td></td>
<td>fA</td>
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<tr>
<td>junction capacitance C</td>
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<td>f = 10 kHz</td>
<td>30</td>
<td></td>
<td>pF</td>
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<tr>
<td>field of view (FOV)</td>
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<td>±40</td>
<td>±27</td>
<td>±40</td>
<td>degree</td>
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<tr>
<td>FOV for isolated assembly</td>
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<td>±44</td>
<td>±30</td>
<td>±48</td>
<td>degree</td>
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<td>0,8</td>
<td>0,3</td>
<td>0,3</td>
<td>gram</td>
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<tr>
<td>package drawing for direct</td>
<td></td>
<td>TO39 / TO39(i)</td>
<td>TO18 / TO18(i)</td>
<td>TO52 / TO52(i)</td>
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<tr>
<td>or isolated assembly</td>
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<td></td>
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</table>

test conditions, as not otherwise specified: T_A = 25 °C , V_R = 0 V
SiC-Photodiode
JE0,05; JE0,05S; JE0,05SS

relativ spectral responsivity

![Graph showing relativ spectral responsivity]

**package dimension TO39**

1 anode  
2 cathode+case  
3 case

**package dimension TO18 / TO52**

1 anode  
2 cathode+case  
3 case

**TO39(i)**

TO18(i) / TO52(i)

TO18/TO18(i): h = 5,2 mm
TO52/TO52(i): h = 3,7 mm

![Package diagrams for TO39 and TO18/TO52]
The application example shows a typical circuit. $R_t$ 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 $R_t$, 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, $R_t = 10 \, \text{M}\Omega$, and $C_f = 1\,\text{pF}$. 