SiC-Photodiode
JEA0,25; JEA0,25S; JEA0,25SS

preliminary data sheet

characteristics:

♦ 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: $T_A = 25 ^\circ C$, $V_R = 0 V$

<table>
<thead>
<tr>
<th>Parameter</th>
<th>test conditions</th>
<th>JEA0,25 / JEA0,25I</th>
<th>JEA0,25S / JEA0,25ISZ</th>
<th>JEA0,25SS / JEA0,25ISSZ</th>
<th>unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>active area</td>
<td></td>
<td>0,55x0,55</td>
<td></td>
<td></td>
<td>mm²</td>
</tr>
<tr>
<td>spectral range</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>nm</td>
</tr>
<tr>
<td>$\lambda_{min}$</td>
<td></td>
<td></td>
<td>$S = 0,1 x S_{max}$</td>
<td>205</td>
<td>nm</td>
</tr>
<tr>
<td>$\lambda_{max}$</td>
<td></td>
<td></td>
<td>355</td>
<td></td>
<td>nm</td>
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<tr>
<td>wavelength of peak response</td>
<td></td>
<td></td>
<td></td>
<td>265</td>
<td>nm</td>
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<tr>
<td>peak response $S_{max}$</td>
<td>$\lambda = 265$</td>
<td>0,18</td>
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<td>A/W</td>
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<tr>
<td>spectral response $S_{254nm}$</td>
<td>$\lambda = 254$</td>
<td>0,16</td>
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<td>A/W</td>
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<tr>
<td>dark current $I_R$</td>
<td>$V_R = 1 V$</td>
<td>10</td>
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<td></td>
<td>fA</td>
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<tr>
<td>junction capacitance $C$</td>
<td>$f = 10$ kHz</td>
<td>75</td>
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<td></td>
<td>pF</td>
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<tr>
<td>field of view (FOV)</td>
<td>±45</td>
<td>±35</td>
<td>±40</td>
<td></td>
<td>°</td>
</tr>
<tr>
<td>FOV for isolated assembly</td>
<td>±48</td>
<td>±38</td>
<td>±45</td>
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<td>°</td>
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<tr>
<td>weight</td>
<td>0,8</td>
<td>0,3</td>
<td>0,3</td>
<td></td>
<td>g</td>
</tr>
<tr>
<td>package drawing for direct or isolated assembly</td>
<td>TO39 / TO39(i)</td>
<td>TO18 / TO18(i)</td>
<td>TO52 / TO52(i)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
SiC-Photodiode
JEAO,25; JEA0,25S; JEA0,25SS

relativ spectral responsivity

![Graph showing the relativ spectral responsivity of SiC-Photodiodes JEA0,25, JEA0,25S, and JEA0,25SS. The x-axis represents wavelength in nm ranging from 200 to 380, and the y-axis represents the responsivity ranging from 0 to 1.]

package dimension TO39

1 anode
2 cathode+case

bottom view

package dimension TO18 / TO52

1 anode
2 cathode+case

bottom view

package dimension TO39(i)

1 anode
2 cathode
3 case

bottom view

package dimension TO18(i) / TO52(i)

1 anode
2 cathode
3 case

bottom view

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

The application example shows a typical circuit where Rf is responsible for the gain of the circuit. Cf compensates the reverse junction capacitance of the photodiode and the input capacitance of the OP-amp. The exact value of Cf depends on Rf, 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, Rf = 10 MΩ and Cf = 1pF.