UVC-selective SiC based UV sensor

SG01S-C18

Features

- UVC Photodiode with small photoactive area
- Optimally suited for detection and control of strong UVC radiation
- Silicon Carbide based chip for extreme irradiation hardness
- Spectral Response in accordance with DVGW W 294
- TO-18 metal package with 0.054 mm² active chip area
- The chip is made by Cree Research Inc., U.S.A.
- Radiation-hard UVC interference filter is made in Germany

Maximum Ratings

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Symbol</th>
<th>Value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating temperature range</td>
<td>( T_{\text{opt}} )</td>
<td>-25 ... +80</td>
<td>°C</td>
</tr>
<tr>
<td>Reverse voltage</td>
<td>( V_{\text{Rmax}} )</td>
<td>20</td>
<td>V</td>
</tr>
</tbody>
</table>
# UVC-selective SiC based UV sensor

**SG01S-C18**

## General Characteristics
*(T<sub>a</sub> = 25 °C)*

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Symbol</th>
<th>Value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Filter aperture</td>
<td>D</td>
<td>2,1</td>
<td>mm</td>
</tr>
<tr>
<td>Filter aperture area</td>
<td>a</td>
<td>3,46</td>
<td>mm&lt;sup&gt;2&lt;/sup&gt;</td>
</tr>
<tr>
<td>Active area</td>
<td>A</td>
<td>0,054</td>
<td>mm&lt;sup&gt;2&lt;/sup&gt;</td>
</tr>
<tr>
<td>Dark current at 1 V reverse bias</td>
<td>I&lt;sub&gt;d&lt;/sub&gt;</td>
<td>1</td>
<td>fA</td>
</tr>
<tr>
<td>Capacitance</td>
<td>C</td>
<td>21</td>
<td>pF</td>
</tr>
<tr>
<td>Short circuit current for 10 mW/cm&lt;sup&gt;2&lt;/sup&gt; @ 254 nm</td>
<td>I&lt;sub&gt;0&lt;/sub&gt;</td>
<td>ca. 350</td>
<td>nA</td>
</tr>
</tbody>
</table>

## Spectral Characteristics
*(T<sub>a</sub> = 25 °C)*

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Symbol</th>
<th>Value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. spectral sensitivity</td>
<td>S&lt;sub&gt;max&lt;/sub&gt;</td>
<td>0.11</td>
<td>A W&lt;sup&gt;-1&lt;/sup&gt;</td>
</tr>
<tr>
<td>Wavelength of max. spectral sensitivity</td>
<td>λ&lt;sub&gt;Smax&lt;/sub&gt;</td>
<td>270</td>
<td>nm</td>
</tr>
<tr>
<td>Range of spectral sensitivity</td>
<td></td>
<td>230 - 285</td>
<td>nm</td>
</tr>
</tbody>
</table>

For price, delivery and to place orders, please contact Scitec in England at Scitec Instruments Ltd, Bartles Industrial Estate, North Street, Redruth Cornwall, TR15 1HR
Tel. +44 1209 314608, Fax +44 1209 314609
or visit our website: www.scitec.uk.com
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Linear Spectral Response

![Linear Spectral Response Graph]

Logarithmic Spectral Response

![Logarithmic Spectral Response Graph]
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**Application Example**

- Circuit diagram with labels: $C = 1 \, \text{pF}$, $R = 100 \, \text{MOhm}$
- Components: +U, -U, Out

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**Dimensions**

- Diagram showing chip position and dimensions:
  - Width: 4.7
  - Height: 5.17
  - Spiros: 4.0
  - Distance: 14.0
  - Gap: 0.4
  - Thickness: 2.54

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