

## SG01L-18

### Broadband SiC based UV photodiode $A = 1,0 \text{ mm}^2$

#### General Features



#### Properties of the SG01L-18 UV photodiode

- Broadband UVA+UVB+UVC photodiode
- Active Area  $A = 1,0 \text{ mm}^2$
- TO18 hermetically sealed metal housing
- $10\mu\text{W}/\text{cm}^2$  peak radiation results a current of approx. 12nA

#### About the material Silicon Carbide (SiC)

SiC provides the unique property of extreme radiation hardness, near-perfect visible blindness, low dark current, high speed and low noise. These features make SiC the best available material for visible blind semiconductor UV detectors. The SiC detectors can be permanently operated at up to  $170^\circ\text{C}$ . The temperature coefficient of signal (responsivity) is also low,  $<0,1\%/K$ . Because of the low noise (dark current, in the fA range), very low UV radiation intensities can be measured reliably. Please note that this device needs an appropriate amplifier (see circuit on following page). SiC photodiodes are available as unfiltered broadband devices or with optical filters providing UV-A, UV-B, or UV-C-only sensitivity, or erythral action curve compliance.

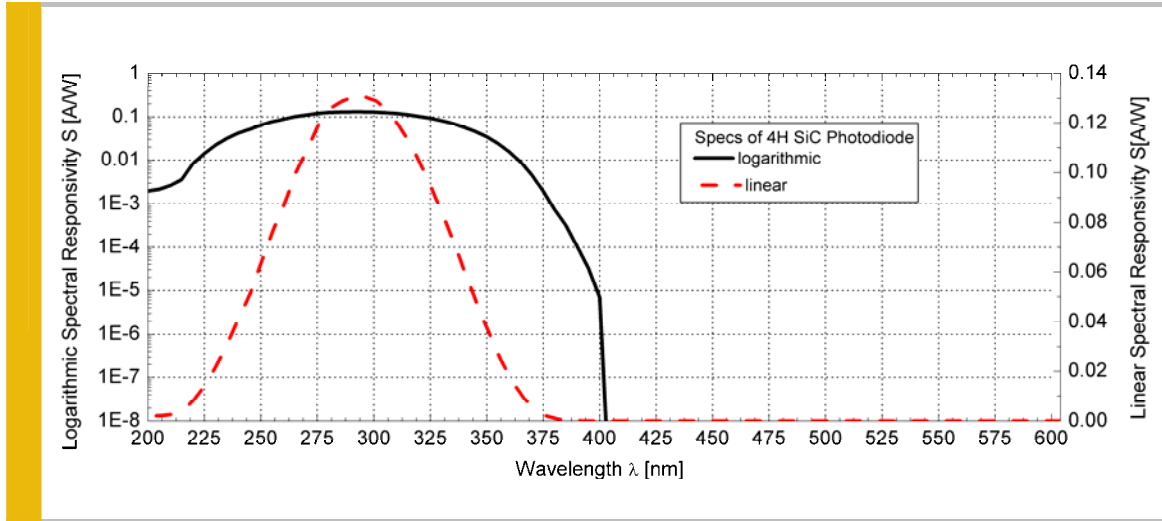
#### Specifications

Parameter	Symbol	Value	Unit
<b>Maximum Ratings</b>			
Operating Temperature Range	$T_{\text{opt}}$	-55 ... +170	$^\circ\text{C}$
Storage Temperature Range	$T_{\text{stor}}$	-55 ... +170	$^\circ\text{C}$
Soldering Temperature (3s)	$T_{\text{sold}}$	260	$^\circ\text{C}$
Reverse voltage	$V_{\text{Rmax}}$	20	V
<b>General Characteristics (<math>T=25^\circ\text{C}</math>)</b>			
Active Area	$A$	1,0	$\text{mm}^2$
Dark current (1V reverse bias)	$I_{\text{d}}$	3,4	fA
Capacitance	$C$	250	pF
Short circuit ( $10\mu\text{W}/\text{cm}^2$ at peak)	$I_0$	12	nA
Temperature coefficient	$Tc$	$<+0,1$	%/K
<b>Spectral Characteristics (<math>T=25^\circ\text{C}</math>)</b>			
Max. spectral responsivity	$S_{\text{max}}$	0,130	$\text{AW}^{-1}$
Wavelength of max. spectral resp.	$\lambda_{\text{max}}$	295	nm
Responsivity range ( $S=0,1 \cdot S_{\text{max}}$ )	-	220 ... 360	nm
Visible blindness ( $S_{\text{max}} / S_{>405\text{nm}}$ )	VB	$>10^{10}$	-

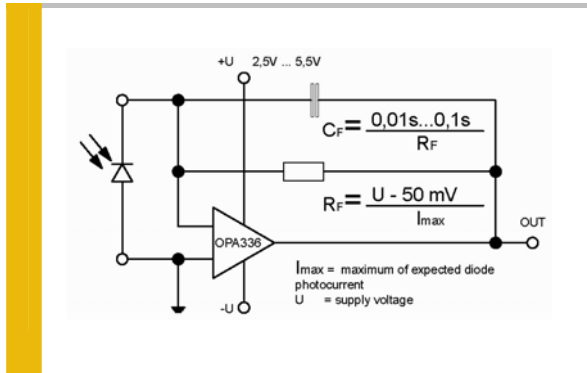
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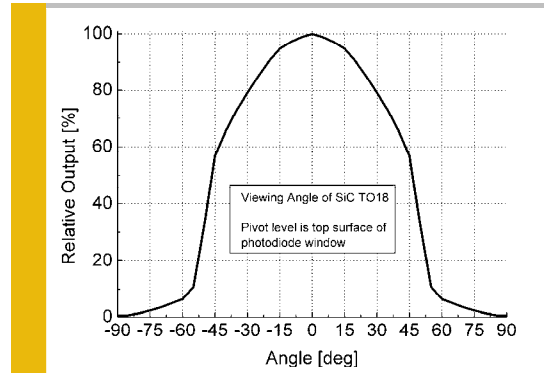
### Spectral Response



### Circuit



### Viewing Angle



### Drawing

