

SG01S-C18

UVC-only SiC based UV photodiode $A = 0,06 \text{ mm}^2$



General Features



Properties of the SG01S-C18 UV photodiode

- UVC-only sensitivity compliant with DVGW W294
- Active Area $A = 0,06 \text{ mm}^2$
- TO18 hermetically sealed housing, PTB tested high chip stability
- 10mW/cm^2 radiation at 254nm results a current of approx. 315nA

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°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 erythema action curve compliance.

Specifications

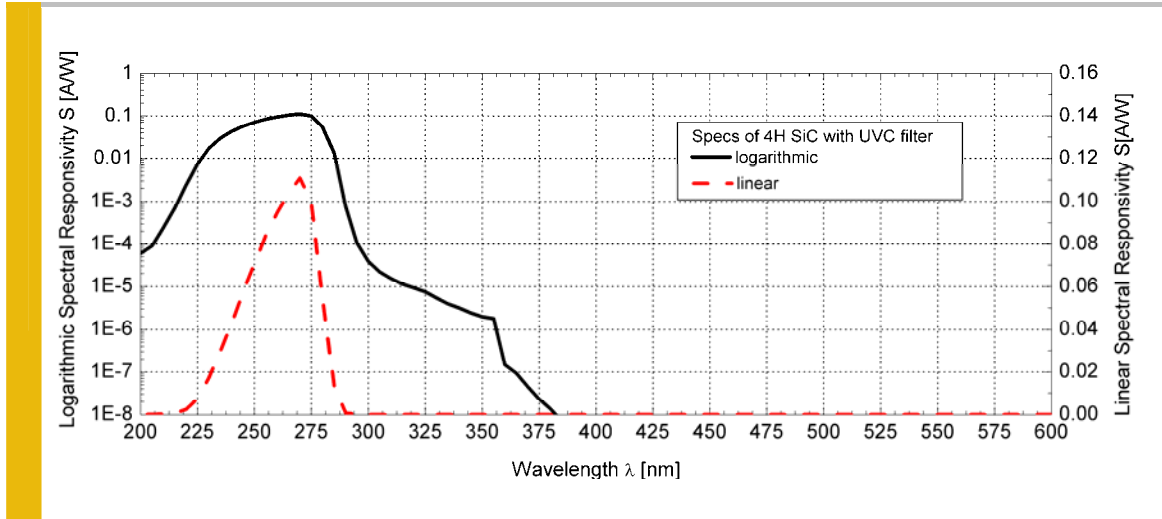
Parameter	Symbol	Value	Unit
Maximum Ratings			
Operating Temperature Range	T_{opt}	-25 ... +170	°C
Storage Temperature Range	T_{stor}	-25 ... +170	°C
Soldering Temperature (3s)	T_{sold}	260	°C
Reverse voltage	V_{Rmax}	20	V
General Characteristics (T=25°C)			
Active Area	A	0,06	mm^2
Dark current (1V reverse bias)	I_{d}	0,2	fA
Capacitance	C	15	pF
Short circuit (10mW/cm ² at 254nm)	I_0	315	nA
Temperature coefficient	Tc	<+0,1	%/K
Spectral Characteristics (T=25°C)			
Max. spectral responsivity	S_{max}	0,100	AW^{-1}
Wavelength of max. spectral resp.	λ_{max}	270	nm
Responsivity range ($S=0,1 * S_{\text{max}}$)	-	230 ... 285	nm
Visible blindness ($S_{\text{max}} / S_{>405\text{nm}}$)	VB	$>10^{10}$	-

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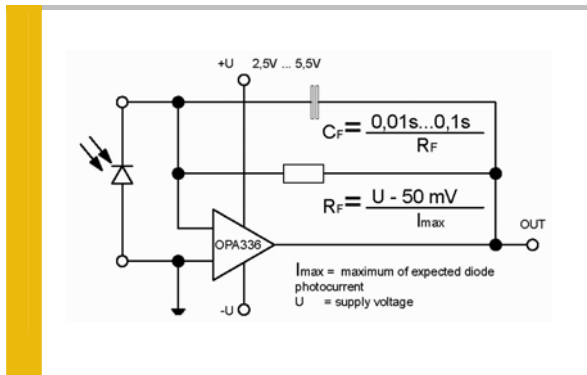
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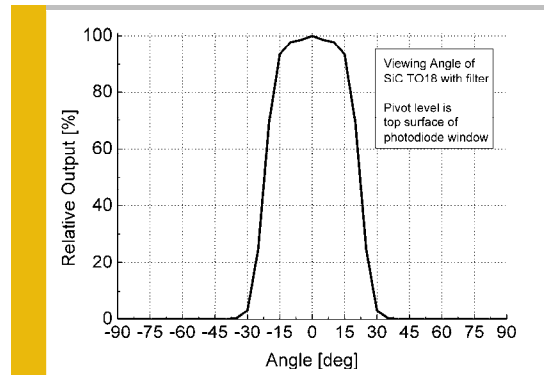
Spectral Response



Circuit



Viewing Angle



Drawing

