

General Features



Properties of the SG01M-LENS UV photodiode

- Broad Band UVA+UVB+UVC diode **for very weak radiation**
- Radiation sensitive area $A = 11,00 \text{ mm}^2$
- TO5 hermetically sealed housing
- $10\mu\text{W}/\text{cm}^2$ radiation at 254nm results a current of approx. 70 nA

About the material Silicon Carbide (SiC)

The material SiC provides unique properties looking at visible blindness, speed and noise. A high long term radiation hardness for radiation intensities up to $1000 \text{ W}/\text{m}^2$ is given. These features make SiC the best currently available material for visible blind semiconductor UV detectors. Some SiC detectors (our HT-series) can be permanently operated at $T=170^\circ\text{C}$ where the temperature coefficient is only $<0,1\%/K$. Because of the low dark current in the fA range also very low radiation intensities can be reliably measured. Please note that this needs suited amplifier circuit (please refer to page 2 and 3 of this datasheet). SiC photodiodes are available as non-filtered broad band devices or with filters e.g. providing an UVA-, UVB-, or UVC-only sensitivity or an erythema-curve compliance.

Specifications

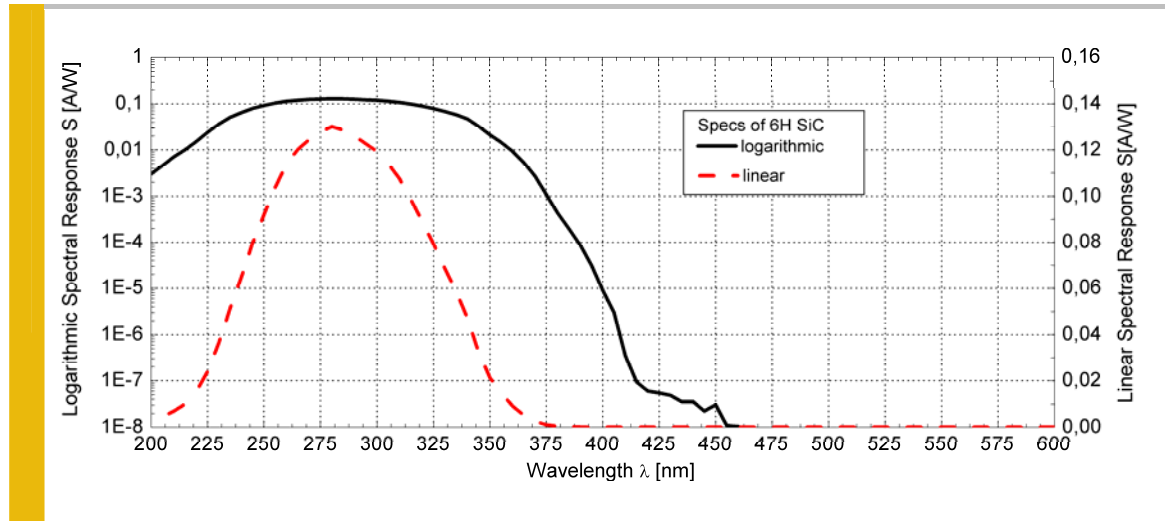
Parameter	Symbol	Value	Unit
Maximum Ratings			
Operating Temperature Range	T_{opt}	-25 ... +70	$^\circ\text{C}$
Storage Temperature Range	T_{stor}	0 ... +100	$^\circ\text{C}$
Soldering Temperature (3s)	T_{sold}	260	$^\circ\text{C}$
Reverse voltage	V_{Rmax}	20	V
General Characteristics ($T=25^\circ\text{C}$)			
Sensitive area (chip size = $0,22 \text{ mm}^2$)	A	11,0	mm^2
Dark current (1V reverse bias)	I_{d}	2	fA
Capacitance	C	80	pF
Short circuit ($10\mu\text{W}/\text{cm}^2$ at peak)	I_0	70	nA
Temperature coefficient	Tc	$<-0,1$	%/K
Spectral Characteristics ($T=25^\circ\text{C}$)			
Max. spectral sensitivity	S_{max}	0,110	AW^{-1}
Wavelength of max. spectral sens.	λ_{max}	288	nm
Sensitivity range ($S=0,1 * S_{\text{max}}$)	-	220 ... 360	nm
Visible blindness ($S_{\text{max}} / S_{>400\text{nm}}$)	VB	10^5	-

SG01M-LENS

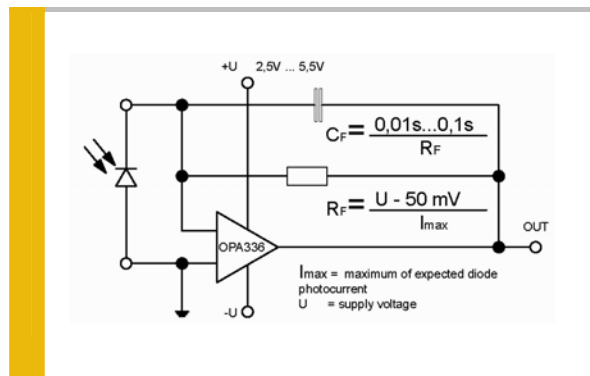
Concentrator lens SiC UV photodiode $A_{\text{virtual}} = 11,0\text{mm}^2$



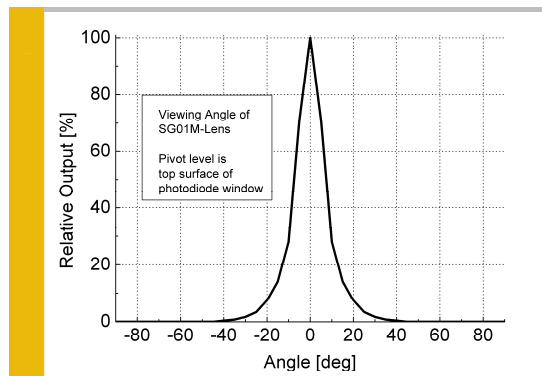
Spectral Response



Circuit



Viewing Angle



Drawing

