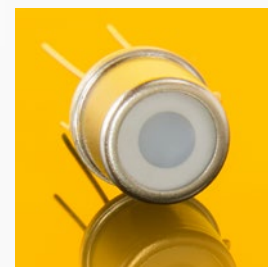




## UV-TIAMO

- Broadband UVA+UVB+UVC amplified SiC UV detector
- Integrated Transimpedance Amplifier
- Sensitivity Range: 227-360 nm
- Approx. max irradiance  $18\mu\text{W}/\text{cm}^2$
- TO5 housing with diffuser
- Applications: UV irradiation measurements



### Description

The UV-TIAMO devices are using modern hybride technology to cancel unwanted signal disturbances caused by moisture or electromagnetic radiation. The stable 0...5V output voltage can be directly connected to a SPC controller or a voltage multimeter. No external amplifier is needed.

The photodetectors work with a SiC sensing chip. 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.

### Maximum Ratings ( $T = 25^\circ\text{C}$ )

Parameter	Symbol	Values		Unit
		Min.	Max.	
Operating Temperature	$T_{opr}$	-25	+85	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-40	+100	$^\circ\text{C}$
Soldering Temperature (max. 3s)	$T_{sol}$		+300	$^\circ\text{C}$

### General Characteristics ( $T = 25^\circ\text{C}$ )

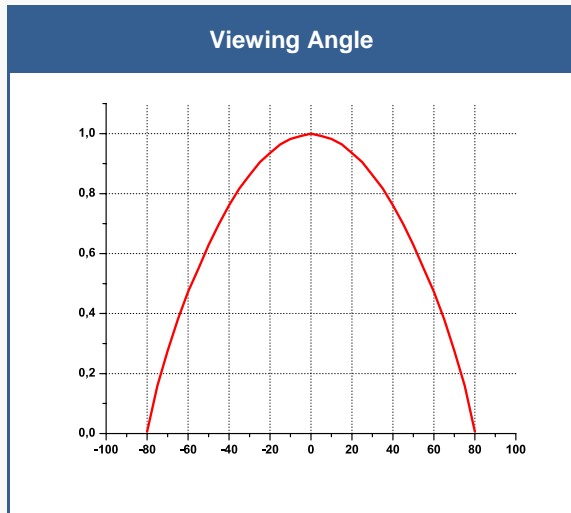
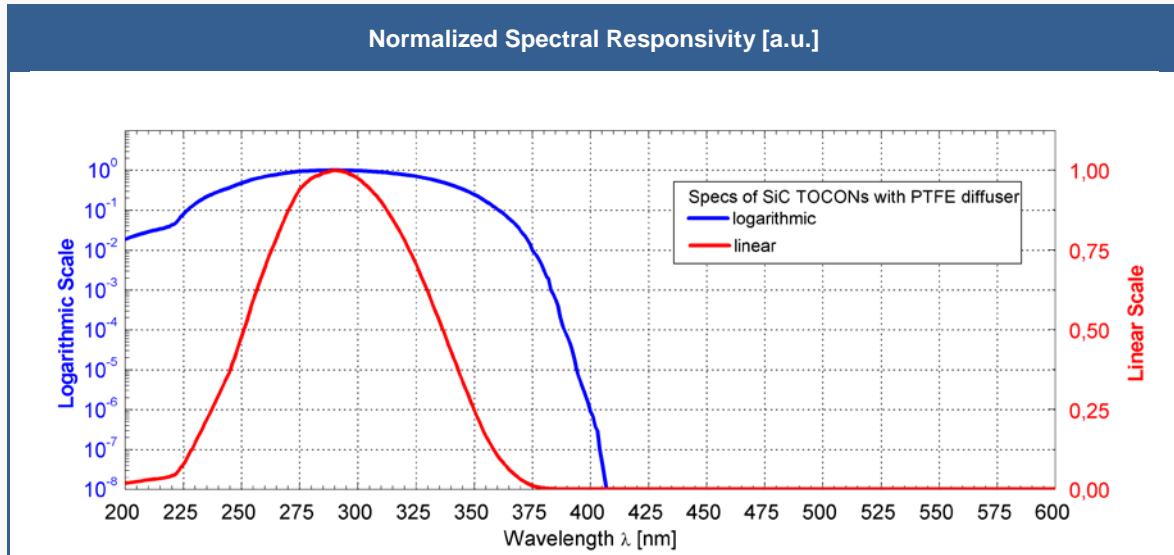
Parameter	Symbol	Min.*	Values		Unit
			Typ.*	Max.*	
Supply voltage	$V_{supply}$	2.5		5.0	V
Saturation voltage	$V_{sat}$		$V_{supply} - 5\%$		V
Dark offset voltage	$V_{offset}$		50		$\mu\text{V}$
Current consumption	I		150		$\mu\text{A}$
Bandwidth (-3 dB)	$\Theta$		15		Hz
Risetime (10-90%) (other risetimes on demand)	$t_{rise}$		0,066		s
Temperature coefficient	$T_C$			-0.3	%/K

### Spectral Characteristics ( $T = 25^\circ\text{C}$ )

Parameter	Symbol	Min.*	Values		Unit
			Typ.*	Max.*	
Sensitivity at peak	$S_{max}$		280		$\text{mV}/\text{nW}/\text{cm}^2$
Wavelength of max. spectral sens.	$\lambda_{max}$		290		nm
Sensitivity range ( $S=0.1*S_{max}$ )	-	227		360	nm
Visible blindness ( $S_{max} / S_{>405\text{nm}}$ )	VB		$10^{10}$		-



## Performance Characteristics



**Product Portfolio**

We offer the following amplified UV photodetectors:

Option	Approx. min irradiance	Approx. max irradiance ( $V_{\text{supply}} = 5V$ )
UV-TIAMO-BL	1.8 pW/cm <sup>2</sup>	18 nW/cm <sup>2</sup>
UV-TIAMO	1.8 nW/cm <sup>2</sup>	18 μW/cm <sup>2</sup>
UV-TIAMO-S	1.8 μW/cm <sup>2</sup>	18 mW/cm <sup>2</sup>
UV-TIAMO-M	18 μW/cm <sup>2</sup>	180 mW/cm <sup>2</sup>

UV photodiodes without amplifier and different spectral sensitivities are available.

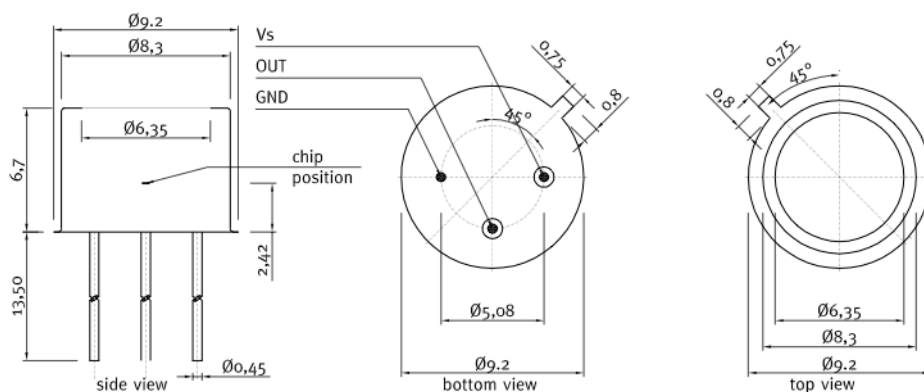
**Falls benötigt...**

**Falls benötigt...**



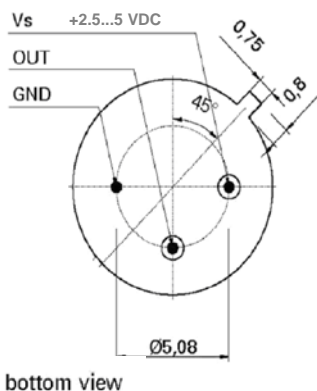
## Outline Dimensions

### TO5 with concentrator lens cap



All dimensions in mm

## Connection diagram



The detector is to be supplied with a voltage of  $V_{supply}=2.5...5VDC$  between pin *Vs* and pin *GND*.

The voltage output signal is measured between pin *OUT* and pin *GND*.

Please note that the theoretic maximum signal output is always a little less (approx. 5%) than the supply voltage.

#### CAUTION!

**Wrong wiring leads to immediate destruction of the device.**

## Application Note

To make the photodiode running reliably, particularly in harsh environment, EMC compatibility and protection against dust, water, and mechanical influences is required. Below listed modules base on a SiC photodiode and guarantee this protection and safety.

**UV-probe:** SiC based sensor modules in **customizable industry grade housings** (e.g. cosine response, water pressure proof, sapphire windows) and **different electronic output configurations** (voltage, current, USB, Can, LAN) to choose from.

→ Ask us for further details!