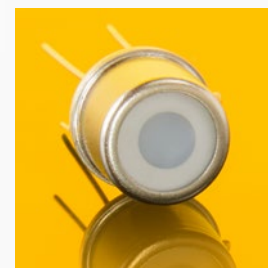




## UV-TIAMO-S

- Broadband UVA+UVB+UVC amplified SiC UV detector
- Integrated Transimpedance Amplifier
- Sensitivity Range: 227-360 nm
- Approx. max irradiance 18mW/cm<sup>2</sup>
- 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°C)

Parameter	Symbol	Values		Unit
		Min.	Max.	
Operating Temperature	T <sub>opr</sub>	-25	+85	°C
Storage Temperature	T <sub>stg</sub>	-40	+100	°C
Soldering Temperature (max. 3s)	T <sub>sol</sub>		+300	°C

### General Characteristics (T = 25°C)

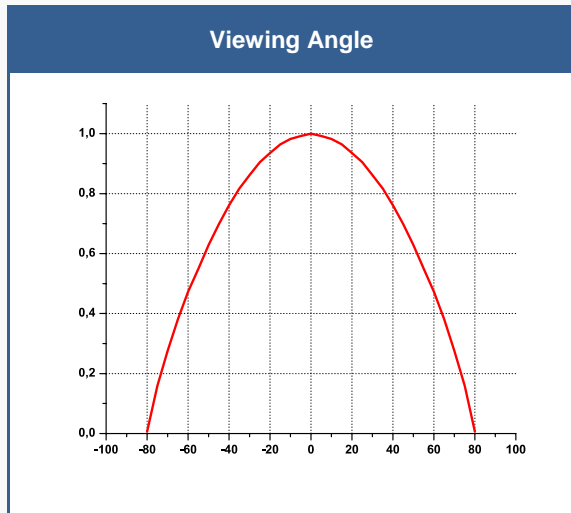
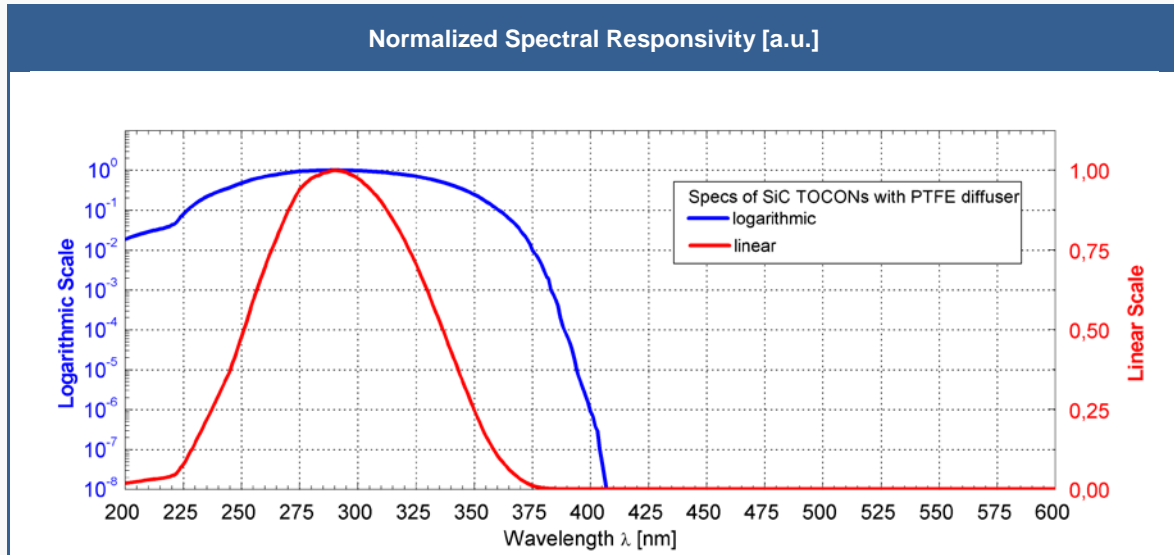
Parameter	Symbol	Min.*	Values		Unit
			Typ.*	Max.*	
Supply voltage	V <sub>supply</sub>	2.5		5.0	V
Saturation voltage	V <sub>sat</sub>		V <sub>supply</sub> - 5%		V
Dark offset voltage	V <sub>offset</sub>		50		µV
Current consumption	I		150		µA
Bandwidth (-3 dB)	Θ		15		Hz
Risetime (10-90%) (other risetimes on demand)	t <sub>rise</sub>		0,073		s
Temperature coefficient	T <sub>C</sub>			-0.3	%/K

### Spectral Characteristics (T = 25°C)

Parameter	Symbol	Min.*	Values		Unit
			Typ.*	Max.*	
Sensitivity at peak	S <sub>max</sub>		280		mV/nW/cm <sup>2</sup>
Wavelength of max. spectral sens.	λ <sub>max</sub>		290		nm
Sensitivity range (S=0.1*S <sub>max</sub> )	-	227		360	nm
Visible blindness (S <sub>max</sub> / S <sub>&gt;405nm</sub> )	VB		10 <sup>10</sup>		-



## 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 $\mu$ W/cm <sup>2</sup>
UV-TIAMO-S	1.8 $\mu$ W/cm <sup>2</sup>	18 mW/cm <sup>2</sup>
UV-TIAMO-M	18 $\mu$ W/cm <sup>2</sup>	180 mW/cm <sup>2</sup>

UV photodiodes without amplifier and different spectral sensitivities are available.

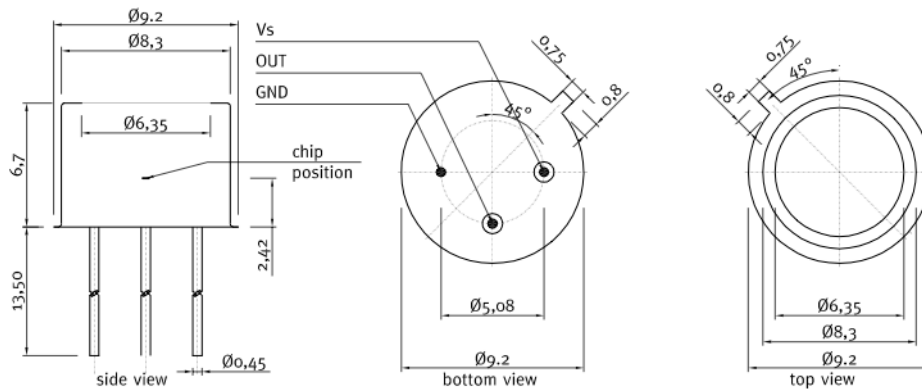
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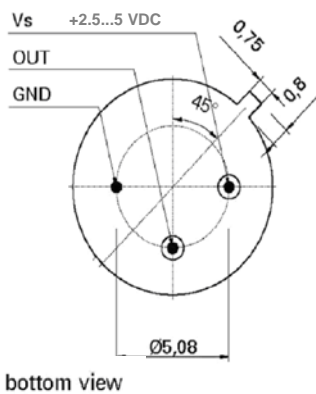
## Outline Dimensions

### T05 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!