ROITHNER LASERTECHNIK GmbH
WIEDNER HAUPTSTRASSE 76 1040 VIENNA AUSTRIA
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v 3.2

UV-TIAMO-C1

- UVC only amplified SiC UV detector
- Integrated Transimpedance Amplifier
- Sensitivity Range: 225-287 nm
- Max. irradiance 180 nW/cm² @ 254 nm
- Min. irradiance 18 pW/cm²
- Applications: UVA +UVB blind, for fire detection

RoHS COMPLIANT Pb-Free

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_{opr}	-25	+85	°C
Storage Temperature	T_{stg}	-40	+100	°C
Soldering Temperature (max. 3s)	T_{sol}		+300	°C

General Characteristics (T = 25°C)

Parameter	Symbol	Values			Unit
		Min.*	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		µV
Current consumption	I		150		µA
Bandwidth (-3 dB)	Θ		15		Hz
Risetime (10-90%) (other risetimes on demand)	t_{rise}		0,075		s
Temperature coefficient	T_C			-0.3	%/K

Spectral Characteristics (T = 25°C)

Parameter	Symbol	Values			Unit
		Min.*	Typ.*	Max.*	
Responsivity @ 254 nm	S_{max}		28		mV/nW/cm²
Wavelength of max. spectral sens.	λ_{max}		275		nm
Sensitivity range ($S=0.1*S_{max}$)	-	225		287	nm
Visible blindness (S_{max} / $S_{>405nm}$)	VB		10^{10}		-

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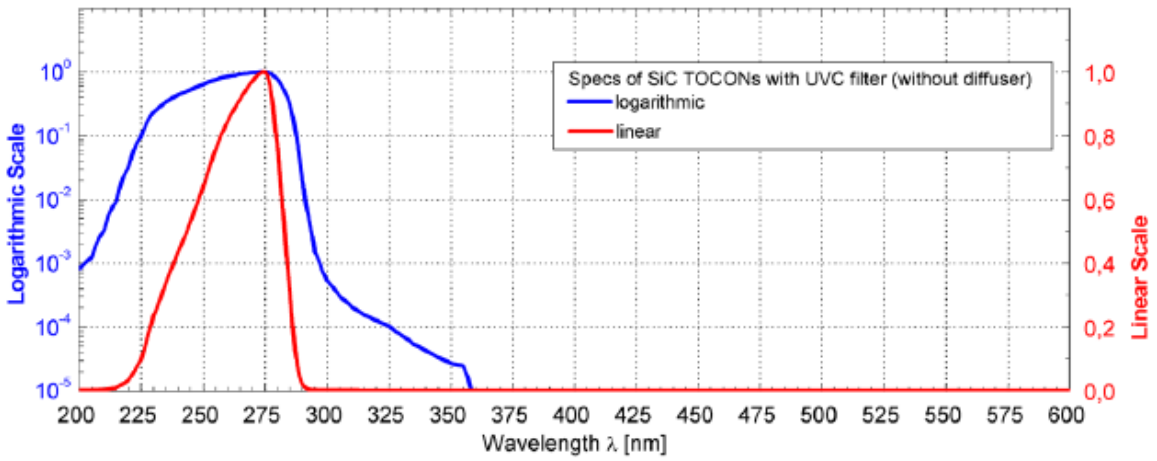
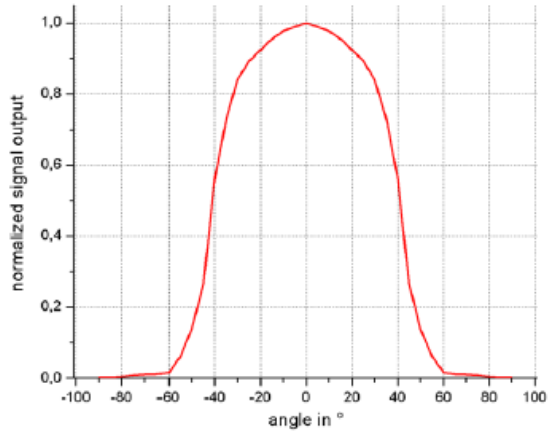
Performance Characteristics

Normalized Spectral Responsivity [a.u.]



Viewing Angle



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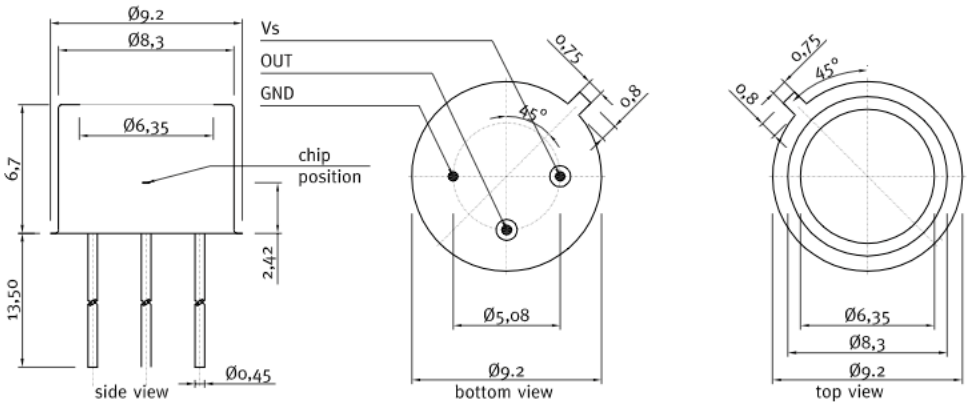
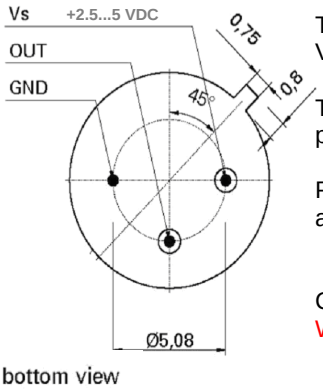
Outline Dimensions

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!