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Rev 11/2020

UV-TIAMO-A8

- SiC UV Photodiode
- Integrated Transimpendance Amplifier
- Sensitivity Range: 309-367 nm
- Max. Irradiance: 180 mW/cm²
- TO-5 Can, with Attenuator

Description

UV-TIAMO devices are 5 Volt powered UV photodetectors with integrated amplifier converting UV radiation into a 0 … 5V voltage output. The Vout pin can be directly connected to a controller, a voltmeter or any other data analyzing device with voltage input.
Highly modern electronic components and a hermetically sealed metal housing with UV glass window eliminates noise caused by parasitic resistance paths inside the package or EMI. UV-TIAMO series is a perfect solution for each industrial UV sensing application starting from flame detection at pW/cm2 level up to UV curing lamp control at W/cm2 level. This thirteen orders of magnitude range is covered by ten different UV-TIAMO devices that differ by their sensitivity.
UV-TIAMO-A8 is specified with irradiance limits of **18 µW/cm² - 180 mW/cm²** and a responsivity range of **309 – 367 nm**
The UV-TIAMO series are produced as UV broadband sensors or with filters for selective measurement.

UV-TIAMO-A Series

Part Number	Responsivity	Irradiance Limits [5V, λ_{peak}]
UV-TIAMO-A1	λ_{max} = 275 nm, $\lambda_{S10\%}$ = 225 – 287 nm	1.8 pW/cm² - 18 nW/cm²
UV-TIAMO-A2		18 pW/cm² - 180 nW/cm²
UV-TIAMO-A3		180 pW/cm² - 1.8 µW/cm²
UV-TIAMO-A4		1.8 nW/cm² - 18 µW/cm²
UV-TIAMO-A5		18 nW/cm² - 180 µW/cm²
UV-TIAMO-A6		180 nW/cm² - 1.8 mW/cm²
UV-TIAMO-A7		1.8 µW/cm² - 18 mW/cm²
UV-TIAMO-A8		18 µW/cm² - 180 mW/cm²
UV-TIAMO-A9		180 µW/cm² - 1.8 W/cm²
UV-TIAMO-A10		1.8 mW/cm² - 18 W/cm²

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Maximum Ratings

Parameter	Symbol	Values Min.	Values Max.	Unit
Operating Temperature	T_{CASE}	- 25	+ 85	°C
Storage Temperature	T_{STG}	- 40	+ 100	°C
Lead Solder Temperature *	T_{SLD}		+ 300	°C

** must be completed within 5 seconds*

General Characteristics (T_{CASE}=25°C, V_{SUPPLY}=+5V)

Parameter	Symbol	Min.	Typ.	Max.	Unit
Supply Voltage	V_{SUPPLY}	2.5		5.0	V
Saturation Voltage	V_{SAT}		V_{SUPPLY} -5%		V
Dark Offset Voltage	V_{OFFSET}		50		µV
Temperature Coefficient	T_C			-0.3	%/K
Current Consumption	I		150		µA
Bandwidth (-3 dB)	Θ		15		Hz
Rise Time (63%)	t_r		69		ms

Spectral Characteristics (T_{CASE}=25°C, V_{SUPPLY}=+5V)

Parameter	Symbol	Min.	Typ.	Max.	Unit
Broadband Sensitivity	S	0.0018		180	mW/cm²
Sensitivity at Peak	S_{max}		28		mV/mW/cm²
Wavelength of max. Spectral Sensitivity	λ_{max}		331		nm
Sensitivity Range (S=0.1*S_{max})		309		367	nm
Visible Blindness ($S_{max}/S_{>405nm}$)	VB	10^{10}			

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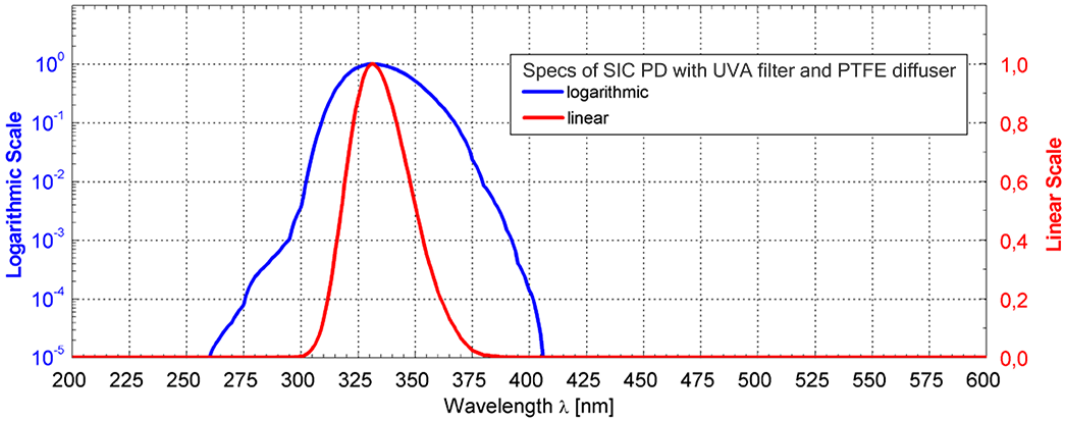
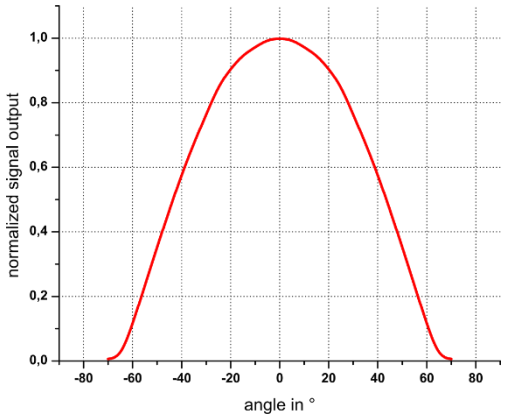
Performance Characteristics

Spectral Response



Field of View



Outline Dimensions

TO-5 with attenuator