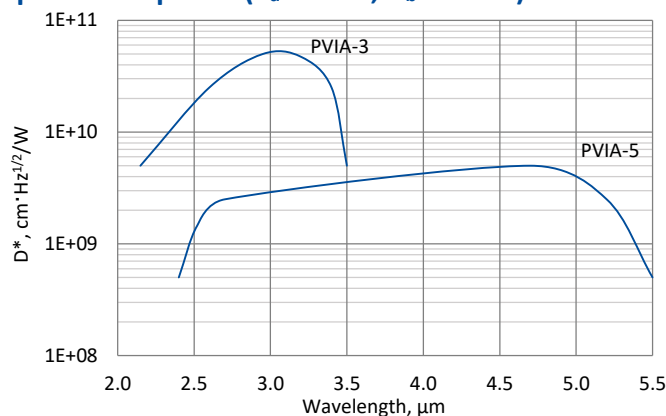


PVIA series

2.0 – 5.5 μm InAs and InAsSb ambient temperature, optically immersed photovoltaic detectors

PVIA series features uncooled IR photovoltaic detectors based on $\text{InAs}_{1-x}\text{Sb}_x$ alloys, optically immersed in order to improve performance of the devices. The detectors are temperature stable up to 300°C and mechanically durable. They do not contain mercury or cadmium and are complying with the RoHS Directive.

Spectral response ($T_a = 20^\circ\text{C}$, $V_b = 0\text{ mV}$)

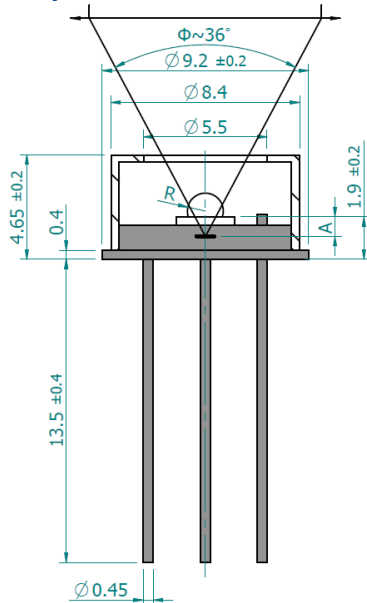


Exemplary spectral detectivity, the spectral response of delivered devices may differ.

Specification ($T_a = 20^\circ\text{C}$, $V_b = 0\text{ mV}$)

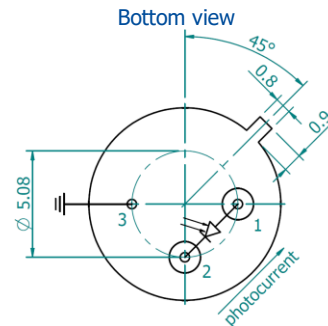
Parameter	Detector type	
	PVIA-3	PVIA-5
Active element material	epitaxial InAs heterostructure	epitaxial InAsSb heterostructure
Cut-on wavelength $\lambda_{\text{cut-on}}$ (10 %), μm	2.15 ± 0.20	2.3 ± 0.2
Peak wavelength λ_{peak} , μm	2.95 ± 0.30	4.7 ± 0.3
Cut-off wavelength $\lambda_{\text{cut-off}}$ (10 %), μm	3.5 ± 0.2	5.5 ± 0.2
Current responsivity $R_i(\lambda_{\text{peak}})$, A/W	≥ 1.3	≥ 1.3
Detectivity $D^*(\lambda_{\text{peak}})$, $\text{cm}\cdot\text{Hz}^{1/2}/\text{W}$	$\geq 5.0 \times 10^{10}$	$\geq 5.0 \times 10^9$
Time constant τ , ns	≤ 20	≤ 15
Resistance R , Ω	$\geq 2\text{k}$	≥ 70
Optical area A_o , $\text{mm} \times \text{mm}$	1×1	
Package	TO39	
Acceptance angle Φ	$\sim 36^\circ$	
Window	none	

Mechanical layout, mm



Parameter	Value
Immersion microlens shape	hyperhemisphere
Optical area A_0 , mm×mm	1×1
R, mm	0.8
A, mm	2.4±0.2

Φ – acceptance angle
R – hyperhemisphere microlens radius
A – distance from the bottom of hyperhemisphere microlens to the focal plane



Function	Pin number
Detector	1, 2
Chassis ground	3

Dedicated preamplifier



small SIP-T039