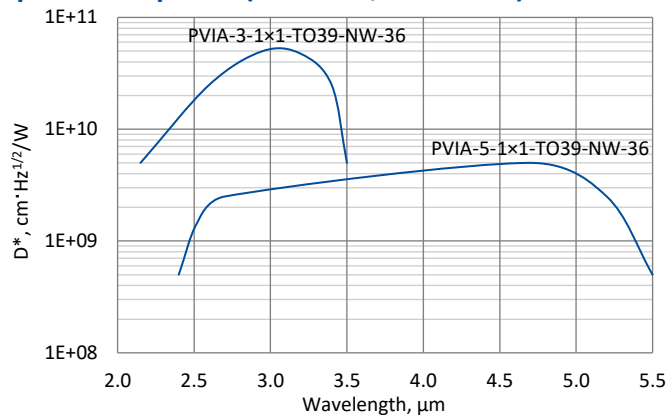


PVIA series

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. They do not contain mercury or cadmium and are complying with the RoHS Directive.

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

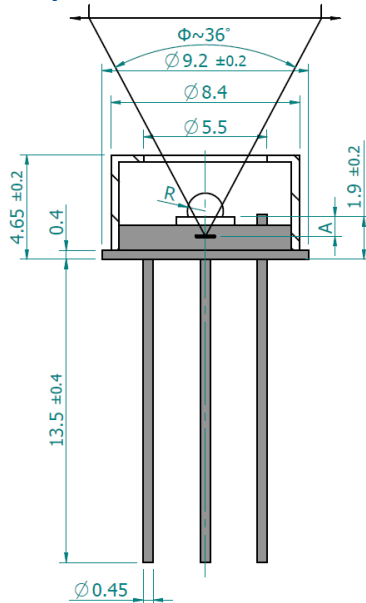


Exemplary spectral detectivity, the spectral response of delivered devices may differ.

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

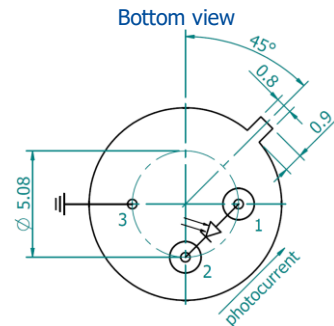
| Parameter | Detector type | |
|---|--------------------------------|----------------------------------|
| | PVIA-3-1x1-TO39-NW-36 | PVIA-5-1x1-TO39-NW-36 |
| Active element material | epitaxial InAs heterostructure | epitaxial InAsSb heterostructure |
| Cut-on wavelength $\lambda_{\text{cut-on}}$ (10 %), 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 |
| Detectivity D^* (λ_{peak}), $\text{cm}\cdot\text{Hz}^{1/2}/\text{W}$ | $\geq 5.0 \times 10^{10}$ | $\geq 5.0 \times 10^9$ |
| Current responsivity R_i (λ_{peak}), A/W | ≥ 1.1 | ≥ 1.2 |
| Time constant τ , ns | ≤ 20 | ≤ 15 |
| Resistance R , Ω | $\geq 2\text{k}$ | ≥ 70 |
| Optical area A_o , $\text{mm}\times\text{mm}$ | | 1x1 |
| 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