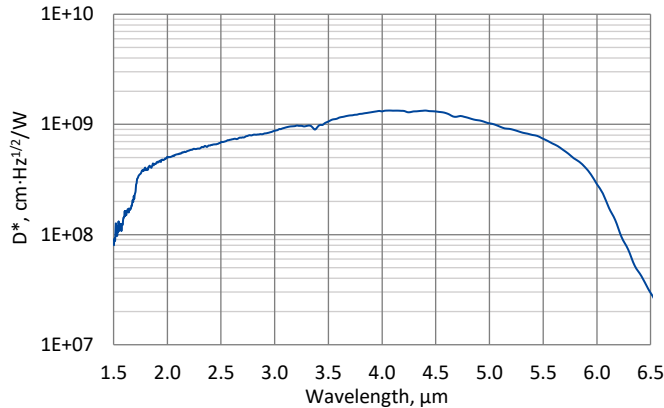


PVAS-5-0.1x0.1-TO39-NW-90 – ENGINEERING SAMPLE

Type II superlattice, ambient temperature, photovoltaic detector

PVAS-5-0.1x0.1-TO39-NW-90 is a Type II superlattice uncooled IR photovoltaic detector, with excellent parameters. This detector does not contain mercury or cadmium and is compliant 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.

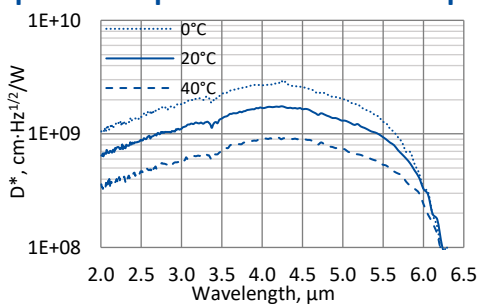
Specification ($T_a = 20^\circ\text{C}$, $V_b = 0\text{ mV}$)

Parameter	Detector type
	PVAS-5-0.1x0.1-TO39-NW-90
Active element material	epitaxial superlattice heterostructure
Cut-on wavelength $\lambda_{\text{cut-on}}$ (10%), μm	1.6 ± 0.2
Peak wavelength λ_{peak} , μm	4.2 ± 0.3
Cut-off wavelength $\lambda_{\text{cut-off}}$ (10%), μm	6.2 ± 0.2
Detectivity $D^*(\lambda_{\text{peak}})$, $\text{cm}\cdot\text{Hz}^{1/2}/\text{W}$	$\sim 1.2 \times 10^9$
Current responsivity $R_i(\lambda_{\text{peak}})$, A/W	~ 1.2
Time constant τ , ns	~ 11
Resistance R , Ω	~ 170
Active area A , $\text{mm}\times\text{mm}$	0.1×0.1
Package	TO39
Acceptance angle Φ	$\sim 90^\circ$
Window	none

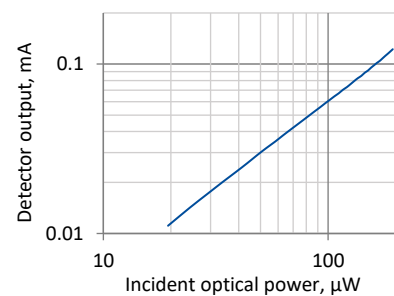
Features

- Spectral range from 1.6 to 6.2 μm
- High responsivity
- Excellent linearity
- No bias required
- No 1/f noise
- Environmentally friendly

Spectral response at ambient temperature change

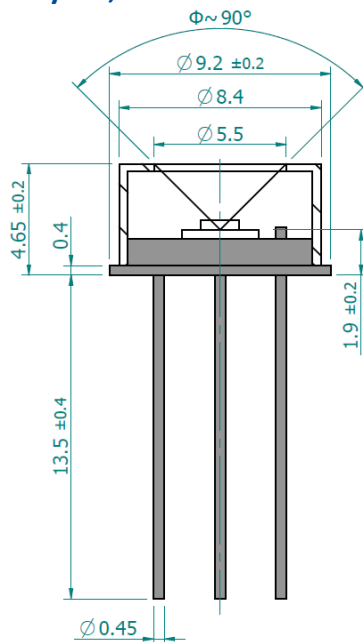


Linearity (typ., $T_{\text{BB}} = 1273\text{ K}$)



T_{BB} – black body temperature

Mechanical layout, mm



Φ – acceptance angle

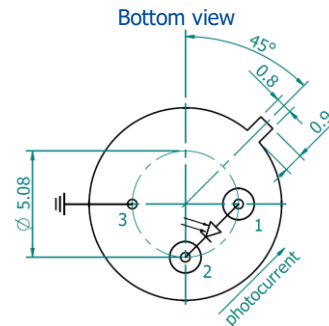
Dedicated preamplifier



small SIP-TO39

Precautions for use and storage

- Operation in 10% to 80% humidity and -20°C to 30°C ambient temperature.
- Beam power limitations:
 - irradiance with CW or single pulse longer than $1 \mu\text{s}$ irradiance on the apparent optical active area must not exceed 100 W/cm^2 ,
 - irradiance of the pulse shorter than $1 \mu\text{s}$ must not exceed 1 MW/cm^2 .
- Storage in dark place with 10% to 90% humidity and -20°C to 50°C ambient temperature.



Function	Pin number
Detector	1, 2
Chassis ground	3