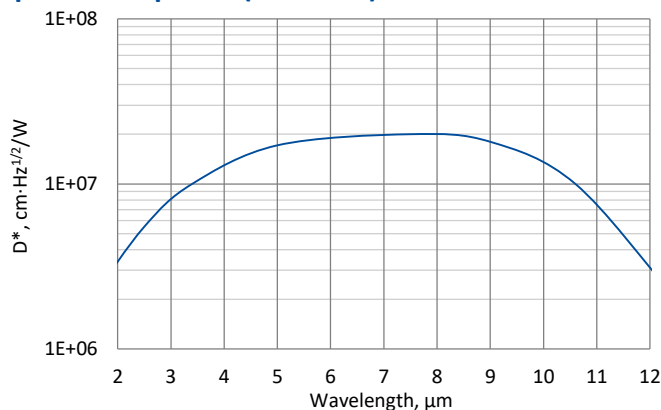


## PVM-10.6-1x1-TO39-NW-90

### 2.0 – 12.0 μm HgCdTe ambient temperature photovoltaic multiple junction detector

**PVM-10.6-1x1-TO39-NW-90** is uncooled IR photovoltaic multiple junction detector based on sophisticated HgCdTe heterostructure for the best performance and stability. The device is designed for the maximum performance at 10.6 μm and especially useful as a large active area detector to detect CW and low frequency modulated radiation.

#### Spectral response ( $T_a = 20^\circ\text{C}$ )



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

#### Specification ( $T_a = 20^\circ\text{C}$ )

Parameter	Detector type
	PVM-10.6-1x1-TO39-NW-90
Active element material	epitaxial HgCdTe heterostructure
Cut-on wavelength $\lambda_{\text{cut-on}}$ (10%), μm	≤2.0
Peak wavelength $\lambda_{\text{peak}}$ , μm	8.5±1.5
Optimum wavelength $\lambda_{\text{opt}}$ , μm	10.6
Cut-off wavelength $\lambda_{\text{cut-off}}$ (10%), μm	≥12.0
Detectivity $D^*(\lambda_{\text{peak}})$ , $\text{cm}\cdot\text{Hz}^{1/2}/\text{W}$	≥2.0×10 <sup>7</sup>
Detectivity $D^*(\lambda_{\text{opt}})$ , $\text{cm}\cdot\text{Hz}^{1/2}/\text{W}$	≥1.0×10 <sup>7</sup>
Current responsivity $R_i(\lambda_{\text{peak}})$ , A/W	≥0.004
Current responsivity $R_i(\lambda_{\text{opt}})$ , A/W	≥0.002
Time constant $\tau$ , ns	≤1.5
Resistance $R$ , Ω	≥30
Active area $A$ , mm×mm	1×1
Package	TO39
Acceptance angle $\Phi$	~90°
Window	none

#### Features

- Wide spectral range from 2.0 to 12.0 μm
- Large active area 1×1 mm<sup>2</sup>
- No bias required
- No flicker noise
- Short time constant ≤ 1.5 ns
- Operation from DC to high frequency
- Sensitive to IR radiation polarisation
- Very small size
- Convenient to use
- Versatility
- Cost-effective solution
- Quantity discounted price
- Fast delivery

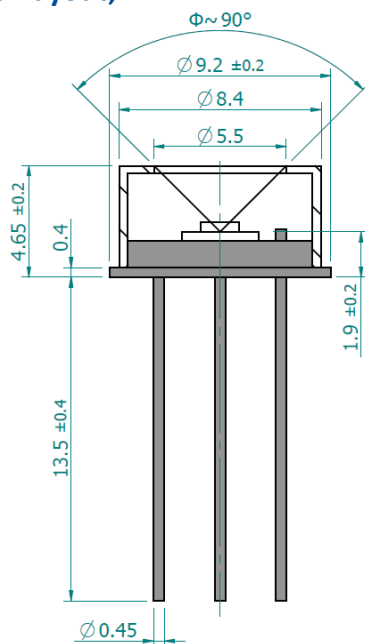
#### Applications

- CO<sub>2</sub> laser (10.6 μm) measurements
- Laser power monitoring and control
- Laser beam profiling and positioning
- Laser calibration
- Dentistry

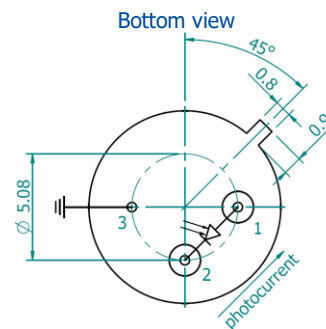
#### Related product

- microM-10.6 detection module

### Mechanical layout, mm



$\Phi$  – acceptance angle



Function	Pin number
Detector	1, 2
Chassis ground	3

### 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  $\mu$ s irradiance on the apparent optical active area must not exceed 100 W/cm<sup>2</sup>,
  - irradiance of the pulse shorter than 1  $\mu$ s must not exceed 1 MW/cm<sup>2</sup>.
- Storage in dark place with 10% to 90% humidity and -20°C to 50°C ambient temperature.

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