VIGO PHOTONICS


# PRODUCTS

# CONTENTS

# Infrared detectors and detection modules

## How to choose an infrared detector?

### SELECTING THE RIGHT INFRARED DETECTOR INVOLVES CONSIDERING THE FOLLOWING FACTORS:

**Wavelength λ (or wavelength range)**

- Determine the specific wavelength or wavelength range of interest for the application.
- Choose the infrared detector with the spectral range closest to your needs.

**Detectivity D* / Responsivity $R_i$**

- Detectivity D* is a figure of merit for infrared detectors that attempts to allow comparison between types.
- Detectivity is defined as: $\mathbf{D^*=(A\cdot\Delta f)^{1/2}/NEP}$
  A – active area ($cm^2$)
  Δf – signal bandwidth (Hz)
  NEP – Noise Equivalent Power, the optical input power to the active element that produces a signal-to-noise ratio of unity (S/N=1).
- Detector cooling reduces noise and increases responsivity.

**Time constant τ**

- Time constant τ is the time it takes for the detector to reach 1/e≈37% of the initial signal value.
- Time constant is related to the 3dB high cut-off frequency $f_{hi}$: $\mathbf{\tau=1/(2\pi\cdot fhi).}$
- The time constant is related to the 10-90% rise time tr: $\mathbf{t_r=2.2\,\tau.}$

**Active area A / Optical area $A_O$**

- Active area A – the physical area of an active element
- Optical area $A_O$ – it is equal to the physical area of the active element unless an optical concentrator (i.e. immersion microlens) is used
- Optical immersion increases the optical area by ~120x and the detectivity D* by ~11x

## How to choose an amplifier?

### SELECTING THE RIGHT AMPLIFIER INVOLVES CONSIDERING THE FOLLOWING FACTORS:

**Infrared detector**

- Choose the right detector for the application. Take into account:
  - Detector type (photoconductive, photovoltaic),
  - Operating temperature,
  - Detector package.

**Operating bandwidth**

- Determine the highest frequency expected to be observed or the system frequency.
- Multiply the highest frequency or chopping frequency by 10 (for clean waveform resolution).
- In general, select a DC-coupled amplifier for photovoltaic detectors and an AC-coupled amplifier for photoconductive and biased photovoltaic detectors.
- The bandwidth of the detection module is not equal to the bandwidth of the amplifier.

**Appropriate amplifier**

- Refer to VIGO's available amplifiers. Take into account:
  - Amplifier package,
  - Configurability.

**Accessories**

- Some detection modules require additional accessories i.e.:
  - TEC controller,
  - Power supply,
  - Heatsink.

# Detector code description

## A detector code combines various information including:

**Detector type and active element material**

- Indication of whether the detector is a photovoltaic (PV), photovoltaic multi-junction (PVM), photoconductive (PC) or photoelectromagnetic (PEM) type.

**Optical immersion**

- Information about whether the detector has optical immersion technology applied.

**Additional information**

- Information about active element material (i.e. III-V) or active elements geometry (i.e. quadrant)

**Number of thermoelectric cooler stages**

- If the detector incorporates a thermoelectric cooler, the number of cooling stages (1TE, 2TE, 3TE, 4TE) may be a part of the code.

**Specific wavelength**

- The wavelength (in µm) for which the detector is optimized.

**Size of the active (or optical) area**

- The dimensions of the detector's active or optical sensing area (in mm×mm)

**Package type**

- The type of package used to encase the detector (i.e. TO39, TO8, TO66, PEM-SMA)

**Window type**

- Information about the window material (Si, $Al_2O_3$, ZnSe), window shape (wedged or planar) and the presence of any anti-reflection coating.

**Acceptance angle**

- The angular range (in deg.) within which the detector can effectively capture incident radiation.

| Detector type | Immersion | Active element material, Active elements geometry | — | Cooling | — | Specific wavelength | — | Actiave (or optical) area | — | Package | — | Window | — | Acceptance angle |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

# Features

| Active element material | Detector type | Product | | Spectral range (µm) | Features |
|---|---|---|---|---|---|
| InGaAs | photovoltaic | PVA-1.7 detector series | SWIR |  | • Spectral range 0.9 to 1.7 µm<br>• Temperature stable up to 300°C<br>• Complying with the RoHS Directive<br>• Large active areas available |
| InAs, InAsSb | photovoltaic | PVA-3 detector<br>PVA-3-SMD detector series<br>PVIA-4 detector<br>PVA-5-SMD detector series<br>PVIA-5 detector | MWIR | | • Broad 2.0 to 13.6µm spectral range<br>• Temperature stable up to 300°C<br>• Mechanically durable<br>• Complying with the RoHS Directive<br>• No bias required<br>• No 1/f noise<br>• Uncooled and TE-cooled<br>• Optical immersion lens technology available |
| | photovoltaic multi-junction | PVMA-5 detector<br>PVMA-6 detector | | | |
| | photovoltaic | PVIA-10 detector series<br>PVIA-13 detector | LWIR | | |
| HgCdTe | photovoltaic | PVI-3 detector series<br>PV-4 detector series<br>PVI-4 detector series<br>PV-5 detector series<br>PVI-5 detector series<br>PV-6 detector series<br>PVI-6 detector series | MWIR | | • Near BLIP detection in 3.0 to 6.0 µm range<br>• No bias required<br>• No 1/f noise<br>• Bandwidth:<br>  ◦ tens of MHz (without reverse bias)<br>  ◦ ≥ 1GHz (with reverse bias)<br>• Uncooled and TE-cooled<br>• Optical immersion lens technology available |
| | | PV-8 detector series<br>PVI-8 detector series<br>PVI-10.6 detector series | LWIR | | |
| | photovoltaic multi-junction | PVM-8 detector series<br>PVMI-8 detector series<br>PVM-10.6 detector series<br>PVMI-10.6 detector series<br>PVMQ-10.6 detector | LWIR | | • Broad 2.0 to 12.0 µm spectral range<br>• Large active areas available<br>• No bias required<br>• No 1/f noise<br>• Short time constant ≤1.5 ns<br>• Operation from DC to high frequency<br>• Uncooled and TE-cooled<br>• Optical immersion lens technology available |
| | photoelectromagnetic | PEM-10.6 detector | LWIR | | • Broad 2.0 to 12.0 µm spectral range<br>• No bias required<br>• No 1/f noise<br>• Short time constant ≤1.2 ns<br>• Operation from DC to high frequency |
| | photoconductive | PC-5 detector series<br>PCI-5 detector series | MWIR | | • Broad 2.0 to 16.0 µm spectral range<br>• High detectivity<br>• Long lifetime and MTBF<br>• Stability and reliability<br>• 1/f noise<br>• Uncooled, TE-cooled or LN2-cooled<br>• Optical immersion lens technology available |
| | | PC-9 detector series<br>PCI-9 detector series<br>PC-10.6 detector series<br>PCI-10.6 detector series<br>PCI-12 detector series<br>PCI-13 detector series<br>PCI-14 detector series<br>PC-LN2 detector series | LWIR | | |

# Applications

| Spectral range | Specific wavelength (µm) | Active element material | Detector type | Product or product series | Applications |
|---|---|---|---|---|---|
| SWIR | 1.7 | InGaAs | photovoltaic | PVA-1.7 detector series | • Gas detection, monitoring and analysis: $CH_4$<br>• Telecommunication<br>• LIDAR<br>• Laser range finder, laser warning system<br>• Lasers and diodes life tests<br>• Food analysis<br>• Pharmaceutical analysis |
| MWIR | 3.0 | InAs | photovoltaic | PVA-3 detector<br>PVA-3-SMD detector series | • Gas detection, monitoring and analysis: $H_2O$, HF, $CH_4$, $C_2H_2$, $C_2H_4$, $C_2H_6$, $NH_3$<br>• Combustion process control<br>• Green energy<br>• Medical laser control |
| | | HgCdTe | photovoltaic | PVI-3 detector series | |
| | 4.0 | InAsSb | photovoltaic | PVIA-4 detector | • Gas detection, monitoring and analysis: $CH_4$, $C_2H_2$, $CH_2O$, HCl, $NH_3$, $SO_2$, $C_2H_6$, $CO_2$<br>• Breath analysis: $C_2H_6$, $CH_2O$, $NH_3$<br>• Explosion prevention<br>• Exhaust gas denitrification<br>• Emission control (exhaust fumes, greenhouse gases)<br>• Contactless temperature measurements (metal industry) |
| | | HgCdTe | photovoltaic | PV-4 detector series<br>PVI-4 detector series<br>LabM-I-4 detection module | |
| | 5.0 | InAsSb | photovoltaic | PVA-5-SMD detector series<br>PVIA-5 detector | • Contactless temperature measurement: railway transport, industrial and laboratory processes monitoring<br>• Flame and explosion detection<br>• Threat warning systems<br>• Heat-seeking, thermal signature detection<br>• Dentistry<br>• Gas detection, monitoring and analysis: $CH_4$, $C_2H_2$, $CH_2O$, HCl, $NH_3$, $SO_2$, $C_2H_6$, CO, $CO_2$, $NO_x$<br>• Breath analysis ($C_2H_6$, $CH_2O$, $NH_3$, NO, OCS)<br>• Gas leak detection<br>• Combustion process control<br>• Non-destructive material testing |
| | | | photovoltaic multi-junction | PVMA-5 detector<br>AM03100-02 detection module<br>AMS3140-01 detection module | |
| | | HgCdTe | photovoltaic | PV-5 detector series<br>PVI-5 detector series<br>LabM-I-5 detection module series | |
| | | | photoconductive | PC-5 detector series<br>PCI-5 detector series | |
| | 6.0 | InAsSb | photovoltaic multi-junction | PVMA-6 detector<br>AMS6140-01 detection module | • Gas detection, monitoring and analysis: $CH_4$, $C_2H_2$, $CH_2O$, HCl, $NH_3$, $SO_2$, $C_2H_6$, CO, $CO_2$, $NO_x$, $SO_x$, $HNO_3$<br>• Exhaust gas denitrification<br>• Combustion process control<br>• Contactless temperature measurement: railway transport, industrial and laboratory processes monitoring<br>• Heat-seeking, thermal signature detection<br>• Non-destructive material testing<br>• Biochemical analysis<br>• Laser calibration |
| | | HgCdTe | photovoltaic | PV-6 detector series<br>PVI-6 detector series<br>LabM-I-6-01 detection module | |

# Applications

| Spectral range | Specific wavelength (µm) | Active element material | Detector type | Product or product series | Applications |
|---|---|---|---|---|---|
| LWIR | 8.0 | HgCdTe | photovoltaic | PV-8 detector series<br>PVI-8 detector series | • Gas detection, monitoring and analysis: $CH_4$, $H_2S$, $NO_2$, $SO_x$<br>• FTIR spectroscopy |
| | | | photovoltaic multi-junction | PVM-8 detector series<br>PVMI-8 detector series | |
| | 9.0 | HgCdTe | photoconductive | PC-9 detector series<br>PCI-9 detector series | • Gas detection, monitoring and analysis: $SO_2$, $NH_3$<br>• FTIR spectroscopy |
| | 10.0 | InAsSb | photovoltaic | PVIA-10 detector series<br>AMIS8140-01 detection module | • Gas detection, monitoring and analysis: $SO_2$, $NH_3$, $SF_6$<br>• CBRN threats detection<br>• $CO_2$ laser measurements (power monitoring and control, beam profiling and positioning, calibration)<br>• Free-space optical communication<br>• FTIR spectroscopy<br>• Medical bacteria identification<br>• Dentistry<br>• Glucose sensing |
| | 10.6 | HgCdTe | photovoltaic | UHSM-10.6 detection module | |
| | | | | PVI-10.6 detector series<br>UHSM-I-10.6 detection module | |
| | | | photovoltaic multi-junction | PVM-10.6 detector series<br>PVMI-10.6 detector series<br>PVMQ-10.6 detector<br>microM-10.6 detection module<br>UM-I-10.6 detection module<br>LabM-I-10.6 detection module | |
| | | | photoelectromagnetic | PEM-10.6 detector | |
| | | | photoconductive | PC-10.6 detector series<br>PCI-10.6 detector series | |
| | 12.0 | HgCdTe | photoconductive | PCI-12 detector series<br>SM-I-12 detection module | • FTIR spectroscopy<br>• Gas detection, monitoring and analysis: $C_2H_6$, $NH_3$<br>• Laser measurements: power monitoring and control, beam profiling and positioning, calibration |
| | 13.0 | InAs/InAsSb | photovoltaic | PVIA-13 detector | • FTIR spectroscopy<br>• Gas detection, monitoring and analysis: $C_2H_6$<br>• Toxic gas detection<br>• Gas leak detection |
| | | HgCdTe | photoconductive | PCI-13 detector series | |
| | 14.0 | HgCdTe | photoconductive | PCI-14 detector series<br>PC-LN2-14 detector | • FTIR spectroscopy<br>• Gas detection, monitoring and analysis: $CH_3Cl$, $C_2H_2$<br>• Toxic gas detection |
| | 16.6 | HgCdTe | photoconductive | PC-LN2-16.6 | • FTIR spectroscopy |
| | 19.0 | HgCdTe | photoconductive | PC-LN2-19 | • FTIR spectroscopy |

# Selected products

**Selected infrared detectors and detection modules are excellent options for a range of purposes, such as laboratory research, prototyping, R&D stage and various MWIR and LWIR industrial applications.**

## INFRARED DETECTORS

### InAs

- PVA-3-1×1-TO39-NW-90
- PVA-3-d1.2-SMD-NW-115
- PVA-3-d1.2-SMD-pAl2O3-115
- PVA-3-d1.2-SMD-BPF2920-B070-115
- PVA-3-d1.2-SMD-BPF3330-B150-115

### InAsSb

- PVIA-4TE-4-1x1-TO8-w$Al_2O_3$-36
- PVA-5-d1-SMD-NW-115
- PVA-5-d1-SMD-p$Al_2O_3$-115
- PVA-5-d1-SMD-BPF3900-B090-115
- PVA-5-d1-SMD-BPF4260-B090-115
- PVIA-5-1×1-TO39-NW-36
- PVMA-1TE-5-1×1-TO39-pSiAR-70
- PVMA-1TE-6-1×1-TO39-pSiAR-70
- PVIA-10-1×1-TO39-NW-36
- PVIA-4TE-10-1×1-TO8-wZnSeAR-36
- PVIA-4TE-13-1×1-TO8-wZnSeAR-36

### HgCdTe

- PVI-4-1×1-TO39-NW-36
- PVI-5-1×1-TO39-NW-36
- PVI-2TE-6-1×1-TO8-wZnSeAR-36
- PVM-10.6-1×1-TO39-NW-90
- PCI-3TE-12-1×1-TO8-wZnSeAR-36

## INFRARED DETECTION MODULES

### InAsSb

- AM03100-02
- AMS3140-01
- AMS6140-01
- AMIS8140-01

### HgCdTe

- LabM-I-4
- LabM-I-5
- LabM-I-6-01
- LabM-I-10.6
- microM-10.6
- UM-I-10.6
- UHSM-10.6
- UHSM-I-10.6
- SM-I-12

## KEY FEATURES

- Detection modules tailored for specific applications
- Exceptional performance and reliability
- Swift delivery with a maximum 2-week lead time
- Low-cost options available even for low-quantity orders (no minimum order quantity)

# Custom engineering

**With over 35 years of experience in infrared technology, we have developed an extensive portfolio of standard products suitable for the majority of applications.**

VIGO products and services are backed by a team of highly skilled and educated engineers proficient in semiconductor materials engineering, optoelectronics, signal processing electronics, and electro-mechanical design. This allows us to offer services in the engineering of custom products complementary to our standard devices. At VIGO Photonics, our mission is to assist industrial manufacturers and scientific teams alike in meeting the most demanding expectations and addressing complex challenges related to infrared radiation and its measurements.

**Our offer includes:**

## SELECTED PRODUCTS

- 20 types of infrared detectors
- 13 types of infrared detection modules

## STANDARD PRODUCTS

- 84 types of infrared detectors
- 6 types of amplifiers and other accessories

## MODIFICATIONS

- Infrared detectors and detection modules featuring diverse active or optical areas and formats, packages, windows (or filters), connectors, electronic circuitry etc.
- Multielement infrared detectors and detection modules (up to 32 elements)
- Multiband infrared detectors and detection modules (equipped with filters)

## CUSTOM DESIGNS

- Epi-wafers re-engineering
- Infrared detector chips
- Photovoltaic infrared detectors engineered to achieve ultra-high-speed response under a reverse bias
- Ultra-high-speed infrared detection modules (exceeding 3 GHz frequency bandwidth)
- Balanced/auto-balanced infrared detection modules
- ASIC-type infrared detection modules

# PVA-1.7 detector series

InGaAs | InAs | InAsSb | HgCdTe

## InGaAs room-temperature photovoltaic infrared detectors

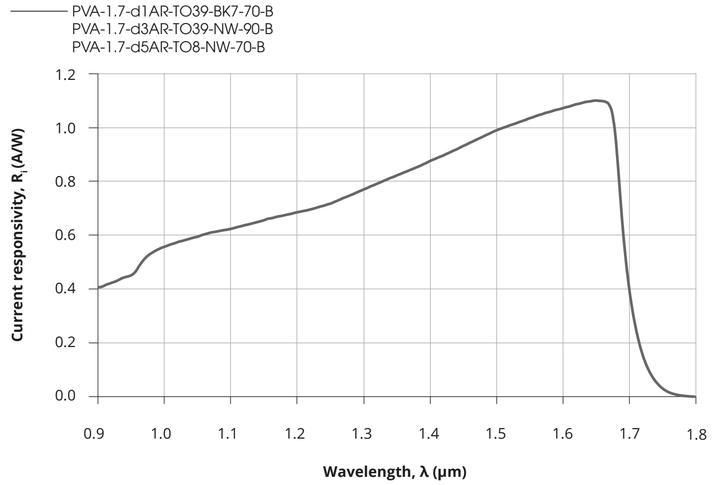
### FEATURES

- Cut-off wavelength: 1.7 µm
- Anti-reflection coating on the active element
- Large active area
- RoHS-compliant III-V material
- High ambient operating and storage temperature
- Long-term stability and reliability
- Front-side illuminated
- No minimum order quantity required

### APPLICATIONS

- Gas detection, monitoring and analysis: $CH_4$
- Telecommunication
- LIDARs
- Laser range finder, laser warning system
- Lasers and diodes life tests
- Food analysis
- Pharmaceutical analysis

### SPECTRAL RESPONSE (Typ., $T_{amb}$ = 293 K)




### PARAMETERS (Typ., $T_{amb}$ = 293 K, $V_b$ = -5 V, unless otherwise noted)

| Image | Detector symbol | Cooling | Active area diameter, $d_A$, mm | Peak wavelength, $\lambda_{peak}$, µm | Cut-off wavelength, $\lambda_{cut\text{-}off}$ (10%), µm | Detectivity, D* (λ=1.55µm, 20 kHz), cm·Hz$^{1/2}$/W | Current responsivity, $R_i$ (λ=1.55µm), A/W | Dark current, $I_{dark}$, nA | 3db bandwidth, MHz | Package | Recommended amplifier |
|---|---|---|---|---|---|---|---|---|---|---|---|
|  | PVA-1.7-d1AR-TO39-BK7-70-B | no $T_{chip} \cong T_{amb}$ | 1 | 1.62±0.03 | 1.71 | $1.0\times10^{12}$ | 1.02 | 25 | 150 | TO39 (3 pin) | SIP-TO39 |
|  | PVA-1.7-d3AR-TO39-NW-90-B | | 3 | | | min. $4.5\times10^{11}$ | | 200 | 25 | TO39 (3 pin) | |
|  | PVA-1.7-d5AR-TO8-NW-70-B | | 5 | | | min. $3.0\times10^{11}$ | | 250 | 3 | TO8 | AIP, PIP, MIP, SIP-TO8 |

# PVA-3-1×1-TO39-NW-90 detector

InGaAs | **InAs** | InAsSb | HgCdTe

## InAs room temperature photovoltaic infrared detector

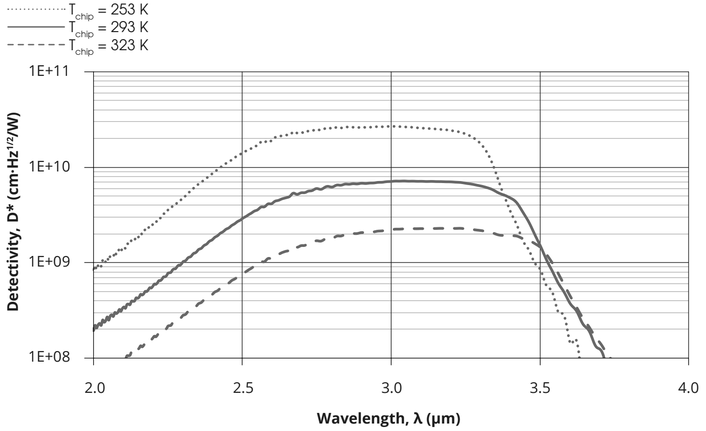
### FEATURES

- Spectral range: 2.3 to 3.5 µm
- RoHS-compliant III-V material
- Large active area
- High ambient operating and storage temperature
- Back-side illuminated
- No minimum order quantity required

### APPLICATIONS

- Gas detection, monitoring and analysis: $H_2O$, HF, $CH_4$, $C_2H_2$, $C_2H_4$, $C_2H_6$, $NH_3$
- Combustion process control
- Green energy
- Medical laser control

### SPECTRAL RESPONSE (Typ.)




### PARAMETERS (Typ., $T_{amb}$ = 293 K, $V_b$ = 0 V)

| Image | Detector symbol | Cooling | Active area, A, mm×mm | Cut-on wavelength, $\lambda_{cut\text{-}off}$ (10%), µm | Peak wavelength, $\lambda_{peak}$, µm | Cut-off wavelength, $\lambda_{cut\text{-}off}$ (10%), µm | Detectivity, D* ($\lambda_{peak}$, 20 kHz), cm·Hz$^{1/2}$/W | Current responsivity, $R_i$ ($\lambda_{peak}$), A/W | Time constant, τ, ns | Package | Recommended amplifier |
|---|---|---|---|---|---|---|---|---|---|---|---|
|  | PVA-3-1×1-TO39-NW-90 | no $T_{chip} \cong T_{amb}$ | 1×1 | 2.3 | 3.1 | 3.5 | $7.0\times10^9$ | 0.9 | 35 | TO39 (3 pin) | SIP-TO39 |

# PVA-3-SMD detector series

InGaAs | InAs | InAsSb | HgCdTe

## InAs room temperature photovoltaic infrared detectors

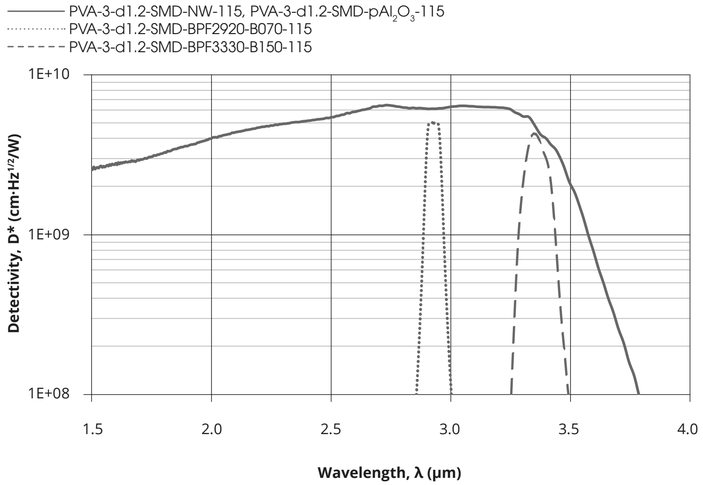
### FEATURES

- Spectral range: 1.3 to 3.6 µm (without filter)
- RoHS-compliant III-V material
- Large active area
- Front-side illuminated
- High ambient operating and storage temperature
- Compact, surface mount type ceramic package (size 4x4 mm$^2$)
- Compatible with lead-free solder reflow
- No minimum order quantity required

### APPLICATIONS

- Gas detection, monitoring and analysis: $H_2O$, HF, $CH_4$, $C_2H_2$, $C_{2H4}$, $C_2H_6$, $NH_3$
- Combustion process control
- Green energy
- Medical laser control

### SPECTRAL RESPONSE (Typ., $T_{amb}$ = 293 K)




### PARAMETERS (Typ., $T_{amb}$ = 293 K, $V_b$ = 0 V)

| Image | Detector symbol | Cooling | Active area diameter, $d_A$, mm | Cut-on wavelength, $\lambda_{cut\text{-}off}$ (10%), µm | Peak wavelength, $\lambda_{peak}$, µm | Cut-off wavelength, $\lambda_{cut\text{-}off}$ (10%), µm | Detectivity, D* ($\lambda_{peak}$, 20 kHz), cm·Hz$^{1/2}$/W | Current responsivity, $R_i$ ($\lambda_{peak}$), A/W | Time constant, τ, ns | Package | Window | Recommended amplifier |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | PVA-3-d1.2-SMD-NW-115 | no $T_{chip} \cong T_{amb}$ | 1.2 | 1.30 | 2.90 | 3.60 | 6.4×10$^9$ | 0.88 | 35 | SMD | no | SMD-3.6k-AMP |
|  | PVA-3-d1.2-SMD-pAl$_2$O$_3$-115 | | | | | | | | | | pAl$_2$O$_3$ (planar sapphire) | |
|  | PVA-3-d1.2-SMD-BPF2920-B070-115 | | | - | 2.92 | - | 5.3×10$^9$ | 0.73 | | | planar with filter ($\lambda_{cwl}$ = 2920 nm, bandwidth = 70 nm) | |
|  | PVA-3-d1.2-SMD-BPF3330-B150-115 | | | - | 3.33 | - | 4.5×10$^9$ | 0.62 | | | planar with filter ($\lambda_{cwl}$ = 3330 nm, bandwidth = 150 nm) | |

# PVIA-4TE-4-1x1-TO8-wAl$_2$O$_3$-36 detector

InGaAs | InAs | **InAsSb** | HgCdTe

## **InAsSb four-stage thermoelectrically-cooled optically immersed photovoltaic infrared detector**

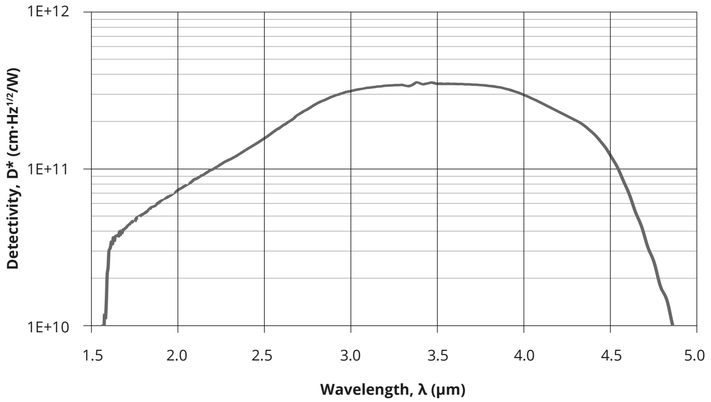
### FEATURES

- Spectral range: 2.0 to 4.7 µm
- RoHS-compliant III-V material
- High ambient operating and storage temperature
- Unique optical immersion technology applied
- Back-side illuminated
- No minimum order quantity required

### APPLICATIONS

- Gas detection, monitoring and analysis: $CH_4$, $C_2H_2$, $CH_2O$, HCl, $NH_3$, $SO_2$, $C_2H_6$, $CO_2$
- Breath analysis: $C_2H_6$, $CH_2O$, $NH_3$
- Explosion prevention
- Exhaust gas denitrification
- Emission control (exhaust fumes, greenhouse gases)
- Contactless temperature measurements (metal industry)

### SPECTRAL RESPONSE (Typ., $T_{amb}$ = 293 K)




### PARAMETERS (Typ., $T_{amb}$ = 293 K, $V_b$ = 0 V)

| Image | Detector symbol | Cooling | Optical area, $A_o$, mm×mm | Cut-on wavelength, $\lambda_{cut\text{-}off}$ (10%), µm | Peak wavelength, $\lambda_{peak}$, µm | Cut-off wavelength, $\lambda_{cut\text{-}off}$ (10%), µm | Detectivity, D* ($\lambda_{peak}$, 20 kHz), cm·Hz$^{1/2}$/W | Current responsivity, $R_i$ ($\lambda_{peak}$), A/W | Time constant, τ, ns | Package | Recommended amplifier |
|---|---|---|---|---|---|---|---|---|---|---|---|
|  | PVIA-4TE-4-1x1-TO8-wAl2O3-36 | 4TE<br>$T_{chip}$ ≅ 200K | 1×1 | ≤2.0 | 3.5 | 4.7 | 3.7×10$^{11}$ | 1.7 | 30 | 4TE-TO8 | AIP, PIP, MIP, SIP-TO8 |

# PVA-5-SMD detector series

InGaAs | InAs | **InAsSb** | HgCdTe

## **InAsSb** room temperature photovoltaic infrared detectors

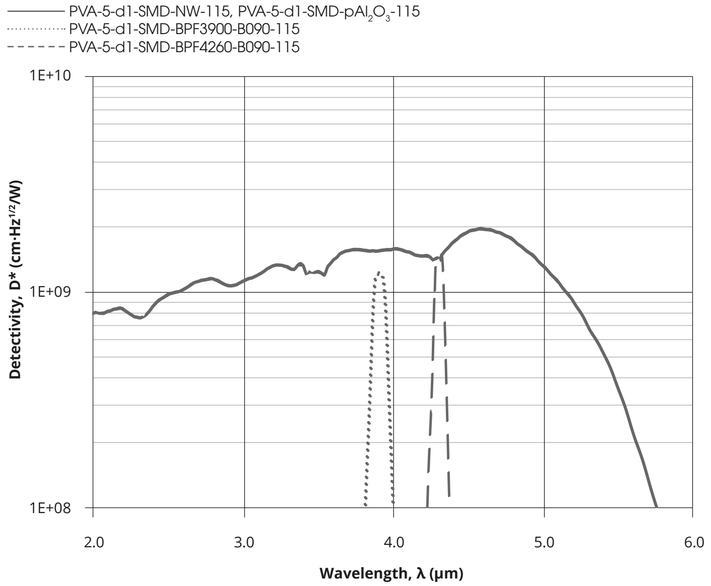
### FEATURES

- Spectral range: 2.0 to 5.6 µm (without filter)
- RoHS-compliant III-V material
- Large active area
- Front-side illuminated
- High ambient operating and storage temperature
- Compact, surface mount type ceramic package (size 4x4 mm$^2$)
- Compatible with lead-free solder reflow
- No minimum order quantity required

### APPLICATIONS

- Contactless temperature measurement: railway transport, industrial and laboratory processes monitoring
- Flame and explosion detection
- Threat warning systems
- Heat-seeking, thermal signature detection
- Dentistry
- Gas detection, monitoring and analysis: $CH_4$, $C_2H_2$, $CH_2O$, HCl, $NH_3$, $SO_2$, $C_2H_6$, CO, $CO_2$, $NO_x$
- Breath analysis: $C_2H_6$, $CH_2O$, $NH_3$, NO, OCS
- Gas leak detection
- Combustion process control
- Non-destructive material testing

### SPECTRAL RESPONSE (Typ., $T_{amb}$ = 293 K)




### PARAMETERS (Typ., $T_{amb}$ = 293 K, $V_b$ = 0 V)

| Image | Detector symbol | Cooling | Active area diameter, $d_A$, mm | Cut-on wavelength, $\lambda_{cut\text{-}off}$ (10%), µm | Peak wavelength, $\lambda_{peak}$, µm | Cut-off wavelength, $\lambda_{cut\text{-}off}$ (10%), µm | Detectivity, D* ($\lambda_{peak}$, 20 kHz), cm·Hz$^{1/2}$/W | Current responsivity, $R_i$ ($\lambda_{peak}$), A/W | Time constant, τ, ns | Package | Window | Recommended amplifier |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | PVA-5-d1-SMD-NW-115 | no $T_{chip} \cong T_{amb}$ | 1 | 2.0 | 4.5 | 5.6 | 2.0×10$^9$ | 0.35 | 35 | SMD | no | SMD-3.6k-AMP |
|  | PVA-5-d1-SMD-pAl$_2$O$_3$-115 | | | | | | | | | | $pAl_2O_3$ (planar sapphire) | |
|  | PVA-5-d1-SMD-BPF3900-B090-115 | | | - | 3.9 | - | 1.2×10$^9$ | 0.22 | | | planar with filter ($\lambda_{cwl}$ = 3900 nm, bandwidth = 90 nm) | |
|  | PVA-5-d1-SMD-BPF4260-B090-115 | | | - | 4.26 | - | 1.3×10$^9$ | 0.24 | | | planar with filter ($\lambda_{cwl}$ = 4260 nm, bandwidth = 90 nm) | |

# PVIA-5-1×1-TO39-NW-36 detector

InGaAs | InAs | **InAsSb** | HgCdTe

## **InAsSb room temperature optically immersed photovoltaic infrared detector**

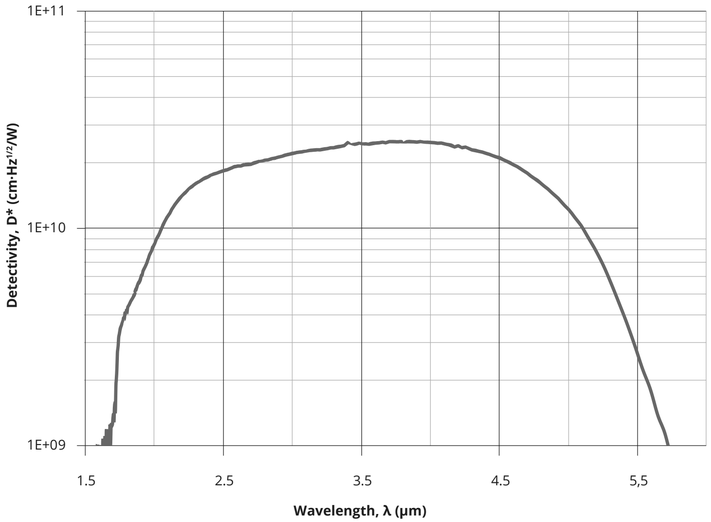
### FEATURES

- Spectral range: 2.0 to 5.6 µm
- RoHS-compliant III-V material
- High ambient operating and storage temperature
- Unique optical immersion technology applied
- Back-side illuminated
- No minimum order quantity required

### APPLICATIONS

- Contactless temperature measurement: railway transport, industrial and laboratory processes monitoring
- Flame and explosion detection
- Threat warning systems
- Heat-seeking, thermal signature detection
- Dentistry
- Gas detection, monitoring and analysis: $CH_4$, $C_2H_2$, $CH_2O$, HCl, $NH_3$, $SO_2$, $C_2H_6$, CO, $CO_2$, $NO_x$
- Breath analysis: $C_2H_6$, $CH_2O$, $NH_3$, NO, OCS
- Gas leak detection
- Combustion process control
- Non-destructive material testing

### SPECTRAL RESPONSE (Typ., $T_{amb}$ = 293 K)




### PARAMETERS (Typ., $T_{amb}$ = 293 K, $V_b$ = 0 V)

| Image | Detector symbol | Cooling | Optical area, $A_o$, mm×mm | Cut-on wavelength, $\lambda_{cut\text{-}off}$ (10%), µm | Peak wavelength, $\lambda_{peak}$, µm | Cut-off wavelength, $\lambda_{cut\text{-}off}$ (10%), µm | Detectivity, D* ($\lambda_{peak}$, 20 kHz), cm·Hz$^{1/2}$/W | Current responsivity, $R_i$ ($\lambda_{peak}$), A/W | Time constant, τ, ns | Package | Recommended amplifier |
|---|---|---|---|---|---|---|---|---|---|---|---|
|  | PVIA-5-1×1-TO39-NW-36 | no $T_{chip} \cong T_{amb}$ | 1×1 | ≤2.0 | 3.9 | 5.6 | $2.8\times10^{10}$ | 1.8 | 30 | TO39 (3 pin) | SIP-TO39 |

# PVMA-1TE-5-1×1-TO39-pSiAR-70 detector

InGaAs | InAs | **InAsSb** | HgCdTe

## InAsSb one-stage thermoelectrically cooled photovoltaic multi-junction infrared detector

### FEATURES

- Spectral range: 2.2 to 5.5 µm
- RoHS-compliant III-V material
- Large active area
- Back-side illuminated
- No minimum order quantity required

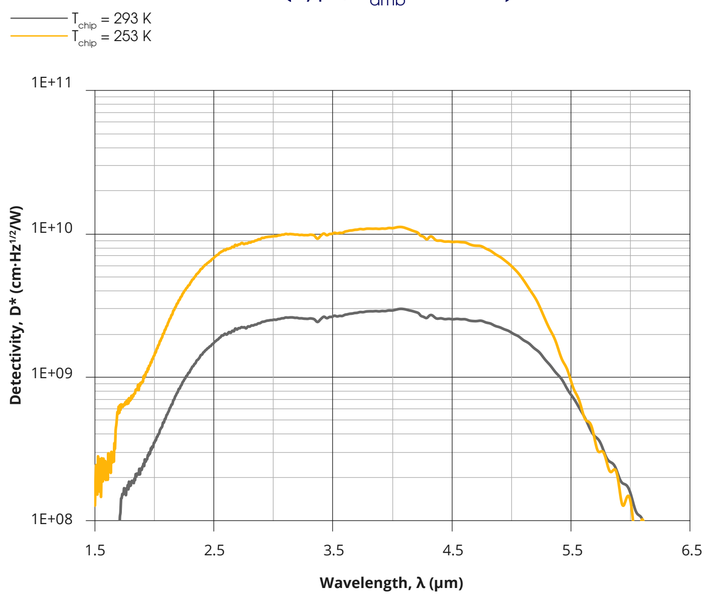
### RELATED PRODUCT

- **AMS3140-01** RoHS-compliant detection module

### APPLICATIONS

- Contactless temperature measurement: railway transport, industrial and laboratory processes monitoring
- Flame and explosion detection
- Threat warning systems
- Heat-seeking, thermal signature detection
- Dentistry
- Gas detection, monitoring and analysis: $CH_4$, $C_2H_2$, $CH_2O$, HCl, $NH_3$, $SO_2$, $C_2H_6$, CO, $CO_2$, $NO_x$
- Breath analysis: $C_2H_6$, $CH_2O$, $NH_3$, NO, OCS
- Gas leak detection
- Combustion process control
- Non-destructive material testing

### SPECTRAL RESPONSE (Typ., $T_{amb}$ = 293 K)




### PARAMETERS (Typ., $T_{amb}$ = 293 K, $V_b$ = 0 V)

| Image | Detector symbol | Cooling | Active area, A, mm×mm | Cut-on wavelength, $\lambda_{cut\text{-}off}$ (10%), µm | Peak wavelength, $\lambda_{peak}$, µm | Cut-off wavelength, $\lambda_{cut\text{-}off}$ (10%), µm | Detectivity, D* ($\lambda_{peak}$, 20 kHz), cm·Hz$^{1/2}$/W | Current responsivity, $R_i$ ($\lambda_{peak}$), A/W | Time constant, τ, ns | Package |
|---|---|---|---|---|---|---|---|---|---|---|
|  | PVMA-1TE-5-1×1-TO39-pSiAR-70 | 1TE $T_{chip} \cong$ 253 K | 1×1 | 2.0 | 4.0 | 5.5 | 1.0×10$^{10}$ | 0.18 | 20 | 1TE-TO39 (8 pin) |

# PVMA-1TE-6-1×1-TO39-pSiAR-70 detector

InGaAs | InAs | **InAsSb** | HgCdTe

## **InAsSb one-stage thermoelectrically cooled photovoltaic multi-junction infrared detector**

### FEATURES

- Spectral range: 2.2 to 6.8 µm
- RoHS-compliant III-V material
- Large active area
- Back-side illuminated
- No minimum order quantity required

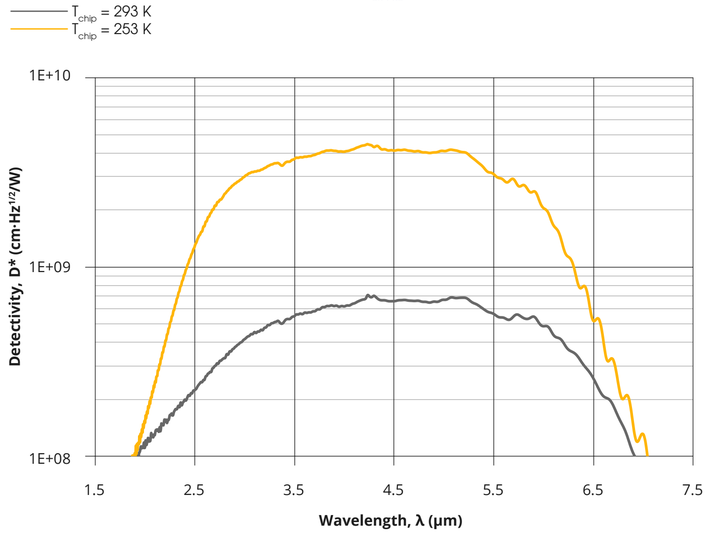
### RELATED PRODUCT

- **AMS6140-01** RoHS-compliant detection module

### APPLICATIONS

- Gas detection, monitoring and analysis: $CH_4$, $C_2H_2$, $CH_2O$, HCl, $NH_3$, $SO_2$, $C_2H_6$, CO, $CO_2$, $NO_x$, $SO_x$, $HNO_3$
- Exhaust gas denitrification
- Combustion process control
- Contactless temperature measurement: railway transport, industrial and laboratory processes monitoring
- Heat-seeking, thermal signature detection
- Non-destructive material testing
- Biochemical analysis
- Laser calibration

### SPECTRAL RESPONSE (Typ., $T_{amb}$ = 293 K)




### PARAMETERS (Typ., $T_{amb}$ = 293 K, $V_b$ = 0 V)

| Image | Detector symbol | Cooling | Active area, A, mm×mm | Cut-on wavelength, $\lambda_{cut\text{-}off}$ (10%), µm | Peak wavelength, $\lambda_{peak}$, µm | Cut-off wavelength, $\lambda_{cut\text{-}off}$ (10%), µm | Detectivity, D* ($\lambda_{peak}$, 20 kHz), cm·Hz$^{1/2}$/W | Current responsivity, $R_i$ ($\lambda_{peak}$), A/W | Time constant, τ, ns | Package |
|---|---|---|---|---|---|---|---|---|---|---|
|  | PVMA-1TE-6-1×1-TO39-pSiAR-70 | 1TE $T_{chip} \cong$ 253 K | 1×1 | 2.2 | 4.2 | 6.8 | 4.3×10$^9$ | 0.18 | 40 | 1TE-TO39 (8 pin) |

# PVIA-10 detector series

InGaAs | InAs | **InAsSb** | HgCdTe

## **InAsSb room temperature and thermoelectrically cooled optically immersed photovoltaic infrared detectors**

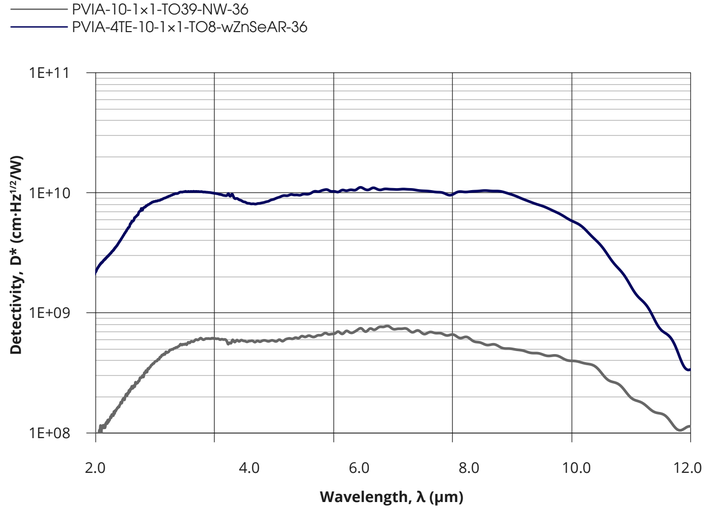
### FEATURES

- Spectral range: 1.8 to 12.0 µm
- RoHS-compliant III-V material
- Unique optical immersion technology applied
- Back-side illuminated
- Long term stability
- Fast response
- No minimum order quantity required

### APPLICATIONS

- Gas detection, monitoring and analysis: $SO_2$, $NH_3$, $SF_6$
- CBRN threats detection
- $CO_2$ laser measurements (power monitoring and control, beam profiling and positioning, calibration)
- Free-space optical communication
- FTIR spectroscopy
- Medical bacteria identification
- Dentistry
- Glucose sensing

### SPECTRAL RESPONSE (Typ., $T_{amb}$ = 293 K)




### PARAMETERS (Typ., $T_{amb}$ = 293 K, $V_b$ = 0 V)

| Image | Detector symbol | Cooling | Optical area, $A_o$, mm×mm | Cut-on wavelength, $\lambda_{cut\text{-}off}$ (10%), µm | Peak wavelength, $\lambda_{peak}$, µm | Cut-off wavelength, $\lambda_{cut\text{-}off}$ (10%), µm | Detectivity, D* ($\lambda_{peak}$, 20 kHz), cm·Hz$^{1/2}$/W | Current responsivity, $R_i$ ($\lambda_{peak}$), A/W | Time constant, τ, ns | Package | Recommended amplifier |
|---|---|---|---|---|---|---|---|---|---|---|---|
|  | PVIA-10-1×1-TO39-NW-36 | no $T_{chip} \cong T_{amb}$ | 1×1 | 1.8 | 7.1 | 12.0 | $7.7\times10^8$ | 0.14 | 1.65 | TO39 (3 pin) | SIP-TO39 |
|  | PVIA-4TE-10-1×1-TO8-wZnSeAR-36 | 4TE $T_{chip} \cong$ 200 K | | | 6.7 | 11.3 | $1.0\times10^{10}$ | 0.55 | 3 | 4TE-TO8 | AIP, PIP, MIP, SIP-TO8 |

# PVIA-4TE-13-1×1-TO8-wZnSeAR-36 detector

InGaAs | InAs | **InAsSb** | HgCdTe

## InAsSb superlattice four-stage thermoelectrically cooled optically immersed photovoltaic infrared detector

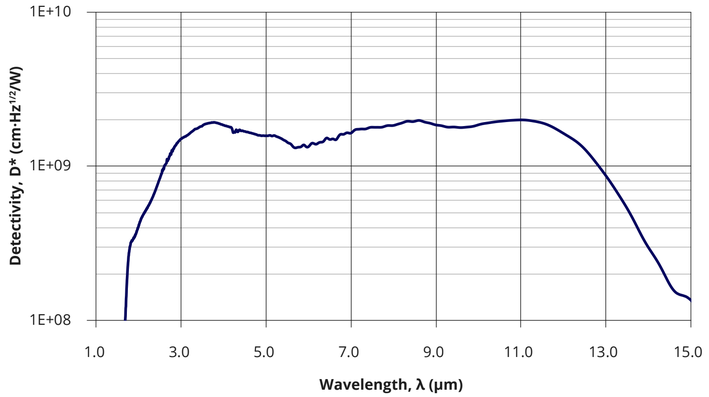
### FEATURES

- Spectral range: 2.0 to 13.6 µm
- RoHS-compliant III-V material
- Unique optical immersion technology applied
- Back-side illuminated
- Long term stability
- Fast response
- No minimum order quantity required

### APPLICATIONS

- FTIR spectroscopy
- Gas detection, monitoring and analysis: $C_2H_6$
- Toxic gas detection
- Gas leak detection

### SPECTRAL RESPONSE (Typ., $T_{amb}$ = 293 K)




### PARAMETERS (Typ., $T_{amb}$ = 293 K, $V_b$ = 0 V)

| Image | Detector symbol | Cooling | Optical area, $A_o$, mm×mm | Cut-on wavelength, $\lambda_{cut\text{-}off}$ (10%), µm | Peak wavelength, $\lambda_{peak}$, µm | Cut-off wavelength, $\lambda_{cut\text{-}off}$ (10%), µm | Detectivity, D* ($\lambda_{peak}$, 20 kHz), cm·Hz$^{1/2}$/W | Current responsivity, $R_I$ ($\lambda_{peak}$), A/W | Time constant, τ, ns | Package | Recommended amplifier |
|---|---|---|---|---|---|---|---|---|---|---|---|
|  | PVIA-4TE-13-1×1-TO8-wZnSeAR-36 | 4TE $T_{chip} \cong 200$ K | 1×1 | 2.0 | 10.5 | 13.6 | $3.0\times10^9$ | 0.38 | 3 | 4TE-TO8 | AIP, PIP, MIP, SIP-TO8 |

# PVI-3 detector series

InGaAs | InAs | InAsSb | **HgCdTe**

## HgCdTe room temperature and thermoelectrically cooled photovoltaic optically immersed infrared detectors

### FEATURES

- Spectral range: 2.2 to 3.35 µm
- Back-side illuminated
- Unique immersion lens technology applied
- No minimum order quantity required

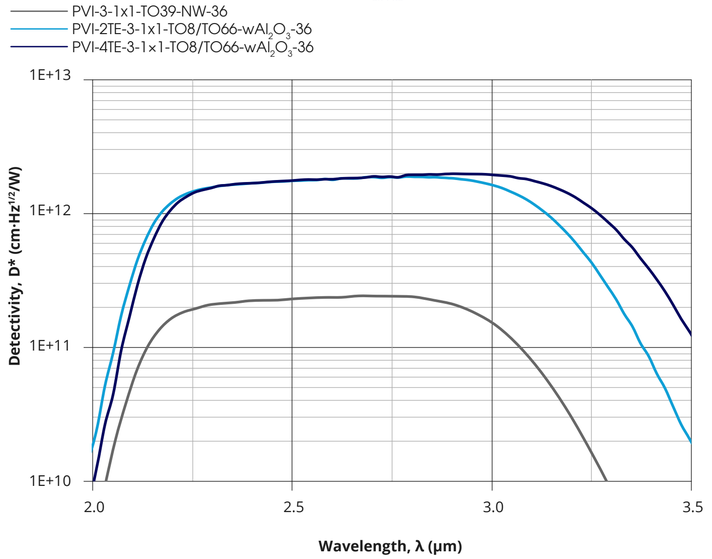
### APPLICATIONS

- Gas detection, monitoring and analysis: $H_2O$, HF, $CH_4$, $C_2H_2$, $C_2H_4$, $C_2H_6$, $NH_3$
- Combustion process control
- Green energy
- Medical laser control

### RELATED PRODUCTS

- **PVA-3-1×1-TO39-NW-90** RoHS-compliant detector
- **PVA-3-SMD** RoHS-compliant detector series

### SPECTRAL RESPONSE (Typ., $T_{amb}$ = 293 K)



# PVI-3 detector series

InGaAs | InAs | InAsSb | **HgCdTe**

## HgCdTe room temperature and thermoelectrically cooled photovoltaic optically immersed infrared detectors

### PARAMETERS (Typ., $T_{amb}$ = 293 K, $V_b$ = 0 V)

| Image | Detector symbol | Cooling | Optical area, $A_o$, mm×mm | Cut-on wavelength, $\lambda_{cut\text{-}on}$ (10%), µm | Peak wavelength, $\lambda_{peak}$, µm | Cut-off wavelength, $\lambda_{cut\text{-}off}$ (10%), µm | Detectivity, D* ($\lambda_{peak}$, 20 kHz), cm·Hz$^{1/2}$/W | Current responsivity, $R_I$ ($\lambda_{peak}$), A/W | Time constant, τ, ns | Package | Recommended amplifier |
|---|---|---|---|---|---|---|---|---|---|---|---|
|  | PVI-3-1×1-TO39-NW-36 | no $T_{chip} \cong T_{amb}$ | 1×1 | 2.2 | 2.7±0.2 | 3.15 | 2.0×10$^{11}$ | 1.4 | 350 | TO39 (3 pin) | SIP-TO39 |
|  | PVI-2TE-3-1×1-TO8-wAl$_2$O$_3$-36 | 2TE $T_{chip} \cong$ 230 K | | | 2.8±0.2 | 3.25 | 1.5×10$^{12}$ | | 280 | 2TE-TO8 | AIP, PIP, MIP, SIP-TO8, FIP*) |
|  | PVI-2TE-3-1×1-TO66-wAl$_2$O$_3$-36 | | | | | | | | | 2TE-TO66 | - |
|  | PVI-4TE-3-1×1-TO8-wAl$_2$O$_3$-36 | 4TE $T_{chip} \cong$ 198 K | | | | 3.35 | 2.0×10$^{12}$ | | | 4TE-TO8 | AIP, PIP, MIP, SIP-TO8, FIP*) |
|  | PVI-4TE-3-1×1-TO66-wAl$_2$O$_3$-36 | | | | | | | | | 4TE-TO66 | - |

*) Only for biased detectors

# PV-4 detector series

InGaAs | InAs | InAsSb | **HgCdTe**

## **HgCdTe** room temperature and thermoelectrically cooled photovoltaic infrared detectors

### FEATURES

- Spectral range: 2.3 to 4.4 µm
- Back-side illuminated
- No minimum order quantity required

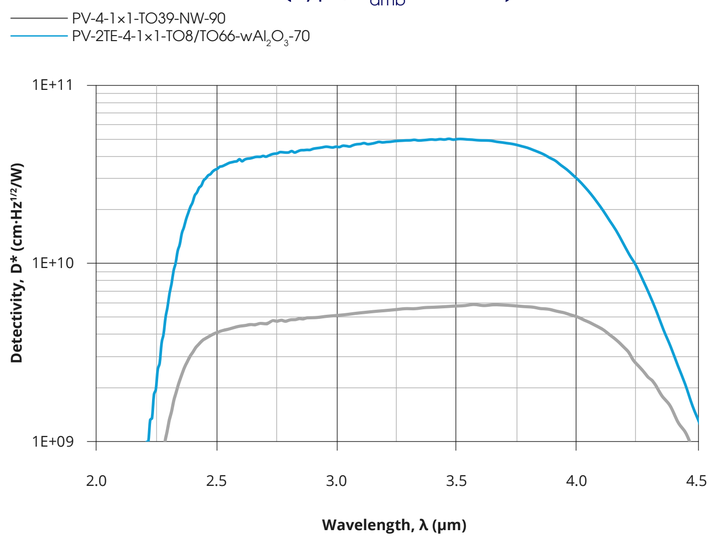
### RELATED PRODUCTS

- **LabM-I-4** detection module
- **PVIA-4TE-4-1x1-TO8-wAl$_2$O$_3$-36** RoHS-compliant detector

### APPLICATIONS

- Gas detection, monitoring and analysis: $CH_4$, $C_2H_2$, $CH_2O$, HCl, $NH_3$, $SO_2$, $C_2H_6$, $CO_2$
- Breath analysis: $C_2H_6$, $CH_2O$, $NH_3$
- Explosion prevention
- Exhaust gas denitrification
- Emission control (exhaust fumes, greenhouse gases)
- Contactless temperature measurements (metal industry)

### SPECTRAL RESPONSE (Typ., $T_{amb}$ = 293 K)




### PARAMETERS (Typ., $T_{amb}$ = 293 K, $V_b$ = 0 V)

| Image | Detector symbol | Cooling | Active area, A, mm×mm | Cut-on wavelength, $\lambda_{cut\text{-}on}$ (10%), µm | Peak wavelength, $\lambda_{peak}$, µm | Cut-off wavelength, $\lambda_{cut\text{-}off}$ (10%), µm | Detectivity, D* ($\lambda_{peak}$, 20 kHz), cm·Hz$^{1/2}$/W | Current responsivity, $R_i$ ($\lambda_{peak}$), A/W | Time constant, τ, ns | Package | Recommended amplifier |
|---|---|---|---|---|---|---|---|---|---|---|---|
|  | PV-4-0.1×0.1-TO39-NW-90 | no $T_{chip} \cong T_{amb}$ | 0.1×0.1 | 2.3 | 3.5±0.1 | 4.3 | 6.0×10$^9$ | 1.8 | 150 | TO39 (3 pin) | SIP-TO39 |
|  | PV-2TE-4-0.1×0.1-TO8-wAl$_2$O$_3$-70 | 2TE $T_{chip} \cong$ 230 K | | | | 4.4 | 5.0×10$^{10}$ | | 100 | 2TE-TO8 | AIP, PIP, MIP, SIP-TO8, FIP*) |
|  | PV-2TE-4-0.1×0.1-TO66-wAl$_2$O$_3$-70 | | | | | | | | | 2TE-TO66 | - |

*) Only for biased detectors

# PVI-4 detector series

InGaAs | InAs | InAsSb | **HgCdTe**

## **HgCdTe room temperature and thermoelectrically cooled photovoltaic optically immersed infrared detectors**

### FEATURES

- Spectral range: 2.3 to 4.4 µm
- Back-side illuminated
- Unique immersion lens technology applied
- No minimum order quantity required
- Detector **PVI-4-1×1-TO39-NW-36** is a **Selected product**

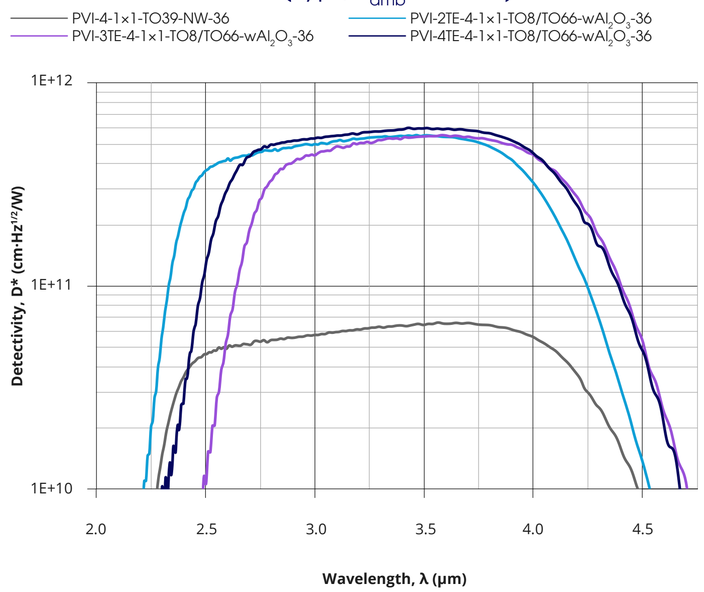
### APPLICATIONS

- Gas detection, monitoring and analysis: $CH_4$, $C_2H_2$, $CH_2O$, HCl, $NH_3$, $SO_2$, $C_2H_6$, $CO_2$
- Breath analysis: $C_2H_6$, $CH_2O$, $NH_3$
- Explosion prevention
- Exhaust gas denitrification
- Emission control (exhaust fumes, greenhouse gases)
- Contactless temperature measurements (metal industry)

### RELATED PRODUCTS

- **LabM-I-4** detection module
- **PVIA-4TE-4-1x1-TO8-wAl$_2$O$_3$-36** RoHS-compliant detector

### SPECTRAL RESPONSE (Typ., $T_{amb}$ = 293 K)



# PVI-4 detector series

InGaAs | InAs | InAsSb | **HgCdTe**

## HgCdTe room temperature and thermoelectrically cooled photovoltaic optically immersed infrared detectors

PARAMETERS (Typ., $T_{amb}$ = 293 K, $V_b$ = 0 V)

| Image | Detector symbol | Cooling | Optical area, $A_o$, mm×mm | Cut-on wavelength, $\lambda_{cut\text{-}on}$ (10%), µm | Peak wavelength, $\lambda_{peak}$, µm | Cut-off wavelength, $\lambda_{cut\text{-}off}$ (10%), µm | Detectivity, D* ($\lambda_{peak}$, 20 kHz), cm·Hz$^{1/2}$/W | Current responsivity, $R_i$ ($\lambda_{peak}$), A/W | Time constant, τ, ns | Package | Recommended amplifier |
|---|---|---|---|---|---|---|---|---|---|---|---|
|  | PVI-4-1×1-TO39-NW-36 | no $T_{chip} \cong T_{amb}$ | 1×1 | 2.3 | 3.5±0.1 | 4.4 | 6.0×10$^{10}$ | 1.8 | 150 | TO39 (3 pin) | SIP-TO39 |
|  | PVI-2TE-4-1×1-TO8-wAl$_2$O$_3$-36 | 2TE $T_{chip} \cong$ 230 K | | | | | 5.0×10$^{11}$ | | 100 | 2TE-TO8 | AIP, PIP, MIP, SIP-TO8, FIP*) |
|  | PVI-2TE-4-1×1-TO66-wAl$_2$O$_3$-36 | | | | | | | | | 2TE-TO66 | - |
|  | PVI-3TE-4-1×1-TO8-wAl$_2$O$_3$-36 | 3TE $T_{chip} \cong$ 210 K | | | 3.6±0.1 | | 5.5×10$^{11}$ | | | 3TE-TO8 | AIP, PIP, MIP, SIP-TO8, FIP*) |
|  | PVI-3TE-4-1×1-TO66- wAl$_2$O$_3$-36 | | | | | | | | | 3TE-TO66 | - |
|  | PVI-4TE-4-1×1-TO8- wAl$_2$O$_3$-36 | 4TE $T_{chip} \cong$ 198 K | | | 3.6±0.15 | | 6.0×10$^{11}$ | | | 4TE-TO8 | AIP, PIP, MIP, SIP-TO8, FIP*) |
|  | PVI-4TE-4-1×1-TO66- wAl$_2$O$_3$-36 | | | | | | | | | 4TE-TO66 | - |

*) Only for biased detectors

# PV-5 detector series

InGaAs | InAs | InAsSb | **HgCdTe**

## **HgCdTe room temperature and thermoelectrically cooled photovoltaic infrared detectors**

### FEATURES

- Spectral range: 2.0 to 5.6 µm
- Back-side illuminated
- No minimum order quantity required

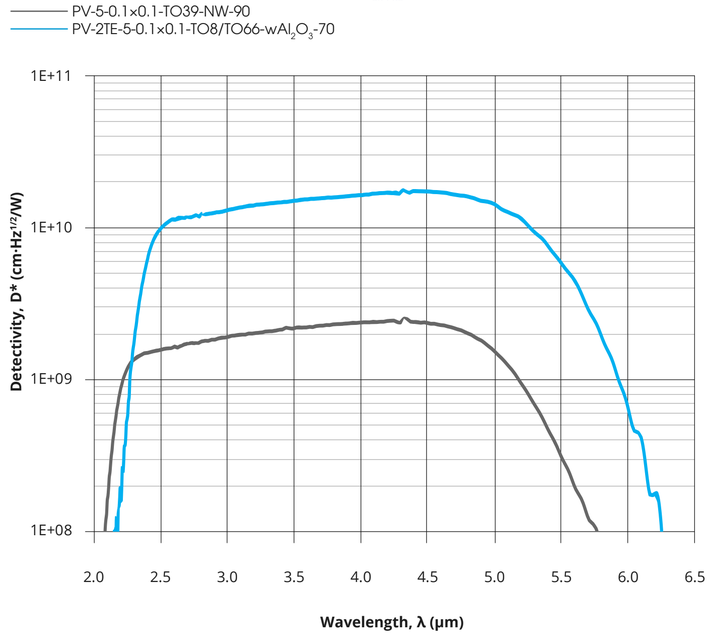
### RELATED PRODUCTS

- **LabM-I-5** detection module
- **PVA-5-SMD** RoHS-compliant detector series
- **PVIA-5-1×1-TO39-NW-36** RoHS-compliant detector
- **PVMA-1TE-5-1×1-TO39-pSiAR-70** RoHS-compliant detector
- **AM03100-02** RoHS-compliant detection module
- **AMS3140-01** RoHS-compliant detection module

### APPLICATIONS

- Contactless temperature measurement: railway transport, industrial and laboratory processes monitoring
- Flame and explosion detection
- Threat warning systems
- Heat-seeking, thermal signature detection
- Dentistry
- Gas detection, monitoring and analysis: $CH_4$, $C_2H_2$, $CH_2O$, HCl, $NH_3$, $SO_2$, $C_2H_6$, CO, $CO_2$, $NO_x$
- Breath analysis: $C_2H_6$, $CH_2O$, $NH_3$, NO, OCS
- Gas leak detection
- Combustion process control
- Non-destructive material testing

### SPECTRAL RESPONSE (Typ., $T_{amb}$ = 293 K)



# PV-5 detector series

InGaAs | InAs | InAsSb | HgCdTe

## HgCdTe room temperature and thermoelectrically cooled photovoltaic infrared detectors

### PARAMETERS (Typ., $T_{amb}$ = 293 K, $V_b$ = 0 V)

| Image | Detector symbol | Cooling | Active area, A, mm×mm | Cut-on wavelength, $\lambda_{cut\text{-}on}$ (10%), µm | Peak wavelength, $\lambda_{peak}$, µm | Cut-off wavelength, $\lambda_{cut\text{-}off}$ (10%), µm | Detectivity, D* ($\lambda_{peak}$, 20 kHz), cm·Hz$^{1/2}$/W | Current responsivity, $R_I(\lambda_{peak})$, A/W | Time constant, τ, ns | Package | Recommended amplifier |
|---|---|---|---|---|---|---|---|---|---|---|---|
|  | PV-5-0.1×0.1-TO39-NW-90 | no $T_{chip} \cong T_{amb}$ | 0.1×0.1 | 2.0 | 4.4±0.2 | 5.4 | 2.5×10$^9$ | 2.0 | 120 | TO39 (3 pin) | SIP-TO39 |
|  | PV-2TE-5-0.1x0.1-TO8-wAl$_2$O$_3$-70 | 2TE $T_{chip} \cong$ 230 K | | 2.3 | | 5.6 | 1.7×10$^{10}$ | 2.1 | 80 | 2TE-TO8 | AIP, PIP, MIP SIP-TO8, FIP*) |
|  | PV-2TE-5-0.1x0.1-TO66-wAl$_2$O$_3$-70 | | | | | | | | | 2TE-TO66 | - |

*) Only for biased detectors

# PVI-5 detector series

InGaAs | InAs | InAsSb | **HgCdTe**

## **HgCdTe room temperature and thermoelectrically cooled photovoltaic optically immersed infrared detectors**

### FEATURES

- Spectral range: 2.7 to 5.6 µm
- Back-side illuminated
- Unique immersion lens technology applied
- No minimum order quantity required
- Detector **PVI-5-1×1-TO39-NW-36** is a **Selected product**

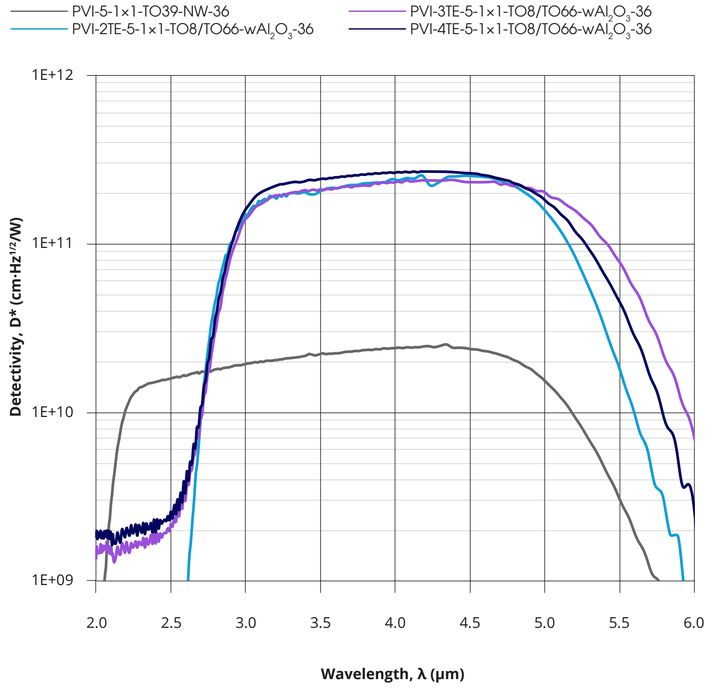
### RELATED PRODUCTS

- **LabM-I-5** detection module
- **PVA-5-SMD** RoHS-compliant detector series
- **PVIA-5-1×1-TO39-NW-36** RoHS-compliant detector
- **PVMA-1TE-5-1×1-TO39-pSiAR-70** RoHS-compliant detector
- **AM03100-02** RoHS-compliant detection module
- **AMS3140-01** RoHS-compliant detection module

### APPLICATIONS

- Contactless temperature measurement: railway transport, industrial and laboratory processes monitoring
- Flame and explosion detection
- Threat warning systems
- Heat-seeking, thermal signature detection
- Dentistry
- Gas detection, monitoring and analysis: $CH_4$, $C_2H_2$, $CH_2O$, HCl, $NH_3$, $SO_2$, $C_2H_6$, CO, $CO_2$, $NO_x$
- Breath analysis: $C_2H_6$, $CH_2O$, $NH_3$, NO, OCS
- Gas leak detection
- Combustion process control
- Non-destructive material testing

### SPECTRAL RESPONSE (Typ., $T_{amb}$ = 293 K)



# PVI-5 detector series

InGaAs | InAs | InAsSb | **HgCdTe**

## HgCdTe room temperature and thermoelectrically cooled photovoltaic optically immersed infrared detectors

### PARAMETERS (Typ., $T_{amb}$ = 293 K, $V_b$ = 0 V)

| Image | Detector symbol | Cooling | Optical area, $A_o$, mm×mm | Cut-on wavelength, $\lambda_{cut\text{-}on}$ (10%), µm | Peak wavelength, $\lambda_{peak}$, µm | Cut-off wavelength, $\lambda_{cut\text{-}off}$ (10%), µm | Detectivity, D* ($\lambda_{peak}$, 20 kHz), cm·Hz$^{1/2}$/W | Current responsivity, $R_I$ ($\lambda_{peak}$), A/W | Time constant, τ, ns | Package | Recommended amplifier |
|---|---|---|---|---|---|---|---|---|---|---|---|
|  | PVI-5-1×1-TO39-NW-36 | no $T_{chip} \cong T_{amb}$ | 1×1 | 2.0 | 4.4±0.2 | 5.4 | 2.5×10$^{10}$ | 2.0 | 120 | TO39 (3 pin) | SIP-TO39 |
|  | PVI-2TE-5-1×1-TO8-wAl$_2$O$_3$-36 | 2TE $T_{chip} \cong$ 230 K | | 2.7 | | 5.6 | 1.8×10$^{11}$ | 2.1 | 80 | 2TE-TO8 | AIP, PIP, MIP, SIP-TO8, FIP*) |
|  | PVI-2TE-5-1×1-TO66-wAl$_2$O$_3$-36 | | | | | | | | | 2TE-TO66 | - |
|  | PVI-3TE-5-1×1-TO8-wAl$_2$O$_3$-36 | 3TE $T_{chip} \cong$ 210 K | | | | 5.5 | 2.3×10$^{11}$ | | | 3TE-TO8 | AIP, PIP, MIP, SIP-TO8, FIP*) |
|  | PVI-3TE-5-1×1-TO66-wAl$_2$O$_3$-36 | | | | | | | | | 3TE-TO66 | - |
|  | PVI-4TE-5-1×1-TO8-wAl$_2$O$_3$-36 | 4TE $T_{chip} \cong$ 198 K | | | | 5.2 | 2.5×10$^{11}$ | | | 4TE-TO8 | AIP, PIP, MIP, SIP-TO8, FIP*) |
|  | PVI-4TE-5-1×1-TO66-wAl$_2$O$_3$-36 | | | | | | | | | 4TE-TO66 | - |

# PC-5 detector series

InGaAs | InAs | InAsSb | **HgCdTe**

## HgCdTe thermoelectrically cooled photoconductive infrared detectors

### FEATURES

- Spectral range: over 5.5 µm
- Large active area
- Front-side illuminated
- No minimum order quantity required

### RELATED PRODUCTS

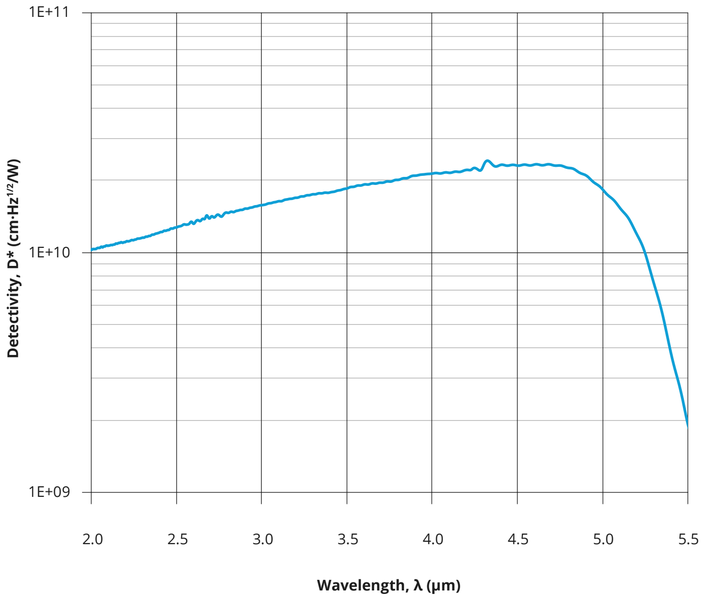
- **LabM-I-5** detection module
- **PVA-5-SMD** RoHS-compliant detector series
- **PVIA-5-1×1-TO39-NW-36** RoHS-compliant detector
- **PVMA-1TE-5-1×1-TO39-pSiAR-70** RoHS-compliant detector
- **AM03100-02** RoHS-compliant detection module
- **AMS3140-01** RoHS-compliant detection module

### APPLICATIONS

- Contactless temperature measurement: railway transport, industrial and laboratory processes monitoring
- Flame and explosion detection
- Threat warning systems
- Heat-seeking, thermal signature detection
- Dentistry
- Gas detection, monitoring and analysis: $CH_4$, $C_2H_2$, $CH_2O$, HCl, $NH_3$, $SO_2$, $C_2H_6$, CO, $CO_2$, $NO_x$
- Breath analysis: $C_2H_6$, $CH_2O$, $NH_3$, NO, OCS
- Gas leak detection
- Combustion process control
- Non-destructive material testing

### SPECTRAL RESPONSE (Typ., $T_{amb}$ = 293 K)

PC-2TE-5-1×1-TO8/T66-w$Al_2O_3$-70




### PARAMETERS (Typ., $T_{amb}$ = 293 K, $V_b$ = 2.0 V)

| Image | Detector symbol | Cooling | Active area, A, mm×mm | Peak wavelength, $\lambda_{peak}$, µm | Cut-off wavelength, $\lambda_{cut\text{-}off}$ (10%), µm | Detectivity, D* ($\lambda_{peak}$, 20 kHz), cm·Hz$^{1/2}$/W | Current responsivity, $R_i$ ($\lambda_{peak}$), A/W | Time constant, τ, ns | Package | Recommended amplifier |
|---|---|---|---|---|---|---|---|---|---|---|
|  | PC-2TE-5-1×1-TO8-w$Al_2O_3$-70 | 2TE $T_{chip} \cong$ 230 K | 1×1 | 4.5±0.3 | 5.5 | 2.0×10$^{10}$ | 4.0 | 20 | 2TE-TO8 | AIP, PIP, MIP SIP-TO8, FIP*) |
|  | PC-2TE-5-1×1-TO66-w$Al_2O_3$-70 | | | | | | | | 2TE-TO66 | - |

*) Only for biased detectors

# PCI-5 detector series

InGaAs | InAs | InAsSb | **HgCdTe**

## HgCdTe thermoelectrically cooled optically immersed photoconductive infrared detectors

### FEATURES

- Spectral range: over 5.5 µm
- Back-side illuminated
- Unique immersion lens technology applied
- No minimum order quantity required

### RELATED PRODUCTS

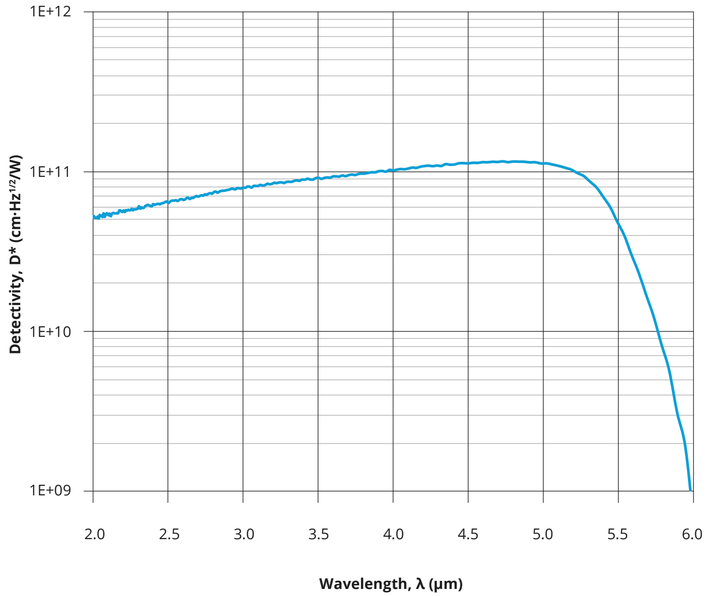
- **LabM-I-5** detection module
- **PVA-5-SMD** RoHS-compliant detector series
- **PVIA-5-1×1-TO39-NW-36** RoHS-compliant detector
- **PVMA-1TE-5-1×1-TO39-pSiAR-70** RoHS-compliant detector
- **AM03100-02** RoHS-compliant detection module
- **AMS3140-01** RoHS-compliant detection module

### APPLICATIONS

- Contactless temperature measurement: railway transport, industrial and laboratory processes monitoring
- Flame and explosion detection
- Threat warning systems
- Heat-seeking, thermal signature detection
- Dentistry
- Gas detection, monitoring and analysis: $CH_4$, $C_2H_2$, $CH_2O$, HCl, $NH_3$, $SO_2$, $C_2H_6$, CO, $CO_2$, $NO_x$
- Breath analysis: $C_2H_6$, $CH_2O$, $NH_3$, NO, OCS
- Gas leak detection
- Combustion process control
- Non-destructive material testing

### SPECTRAL RESPONSE (Typ., $T_{amb}$ = 293 K)

PCI-2TE-5-1×1-TO8/T66-w$Al_2O_3$-36




### PARAMETERS (Typ., $T_{amb}$ = 293 K, $V_b$ = 0.5 V)

| Image | Detector symbol | Cooling | Optical area, $A_o$, mm×mm | Peak wavelength, $\lambda_{peak}$, µm | Cut-off wavelength, $\lambda_{cut\text{-}off}$ (10%), µm | Detectivity, D* ($\lambda_{peak}$, 20 kHz), cm·Hz$^{1/2}$/W | Current responsivity, $R_i$ ($\lambda_{peak}$), A/W | Time constant, τ, ns | Package | Recommended amplifier |
|---|---|---|---|---|---|---|---|---|---|---|
|  | PCI-2TE-5-1×1-TO8-w$Al_2O_3$-36 | 2TE $T_{chip} \cong$ 230 K | 1×1 | 4.6±0.3 | 5.5 | 4.0×10$^{10}$ | 90 | 20 | 2TE-TO8 | AIP, PIP, MIP SIP-TO8, FIP*) |
|  | PCI-2TE-5-1×1-TO66-w$Al_2O_3$-36 | | | | | | | | 2TE-TO66 | - |

*) Only for biased detectors

# PV-6 detector series

InGaAs | InAs | InAsSb | **HgCdTe**

## **HgCdTe room temperature and thermoelectrically cooled photovoltaic infrared detectors**

### FEATURES

- Spectral range: 2.6 to 6.8 µm
- Back-side illuminated
- No minimum order quantity required

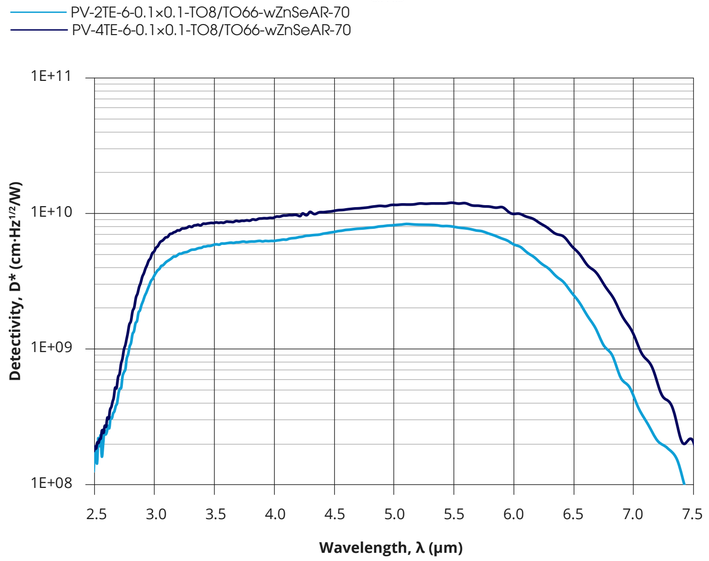
### RELATED PRODUCTS

- **LabM-I-6-01** detection module
- **PVMA-1TE-6-1×1-TO39-pSiAR-70** RoHS-compliant detector
- **AMS6140-01** RoHS-compliant detection module

### APPLICATIONS

- Gas detection, monitoring and analysis: $CH_4$, $C_2H_2$, $CH_2O$, HCl, $NH_3$, $SO_2$, $C_2H_6$, CO, $CO_2$, $NO_x$, $SO_x$, $HNO_3$
- Exhaust gas denitrification
- Combustion process control
- Contactless temperature measurement: railway transport, industrial and laboratory processes monitoring
- Heat-seeking, thermal signature detection
- Non-destructive material testing
- Biochemical analysis
- Laser calibration

### SPECTRAL RESPONSE (Typ., $T_{amb}$ = 293 K)

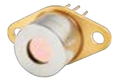


# PV-6 detector series

InGaAs | InAs | InAsSb | **HgCdTe**

## HgCdTe room temperature and thermoelectrically cooled photovoltaic infrared detectors

PARAMETERS (Typ., $T_{amb}$ = 293 K, $V_b$ = 0 V)

| Image | Detector symbol | Cooling | Active area, A, mm×mm | Cut-on wavelength, $\lambda_{cut\text{-}on}$ (10%), µm | Peak wavelength, $\lambda_{peak}$, µm | Cut-off wavelength, $\lambda_{cut\text{-}off}$ (10%), µm | Detectivity, D* ($\lambda_{peak}$, 20 kHz), cm·Hz$^{1/2}$/W | Current responsivity, $R_I$ ($\lambda_{peak}$), A/W | Time constant, τ, ns | Package | Recommended amplifier |
|---|---|---|---|---|---|---|---|---|---|---|---|
|  | PV-2TE-6-0.1×0.1-TO8-wZnSeAR-70 | 2TE $T_{chip}$ ≅ 230 K | 0.1×0.1 | 2.6 | 5.2±0.2 | 6.8 | 8.0×10$^9$ | 2.5 | 50 | 2TE-TO8 | AIP, PIP, MIP, SIP-TO8, FIP*) |
|  | PV-2TE-6-0.1×0.1-TO66-wZnSeAR-70 | | | | | | | | | 2TE-TO66 | - |
|  | PV-4TE-6-0.1×0.1-TO8-wZnSeAR-70 | 4TE $T_{chip}$ ≅ 198 K | | | 5.4±0.2 | | 1.2×10$^{10}$ | | | 4TE-TO8 | AIP, PIP, MIP, SIP-TO8, FIP*) |
|  | PV-4TE-6-0.1×0.1-TO66-wZnSeAR-70 | | | | | | | | | 4TE-TO66 | - |

*) Only for biased detectors

# PVI-6 detector series

InGaAs | InAs | InAsSb | **HgCdTe**

## HgCdTe room temperature and thermoelectrically cooled photovoltaic optically immersed infrared detectors

### FEATURES

- Spectral range: 2.5 to 7.0 µm
- Back-side illuminated
- Unique immersion lens technology applied
- No minimum order quantity required
- Detector **PVI-2TE-6-1×1-TO66-wZnSeAR-36** is a **Selected product**

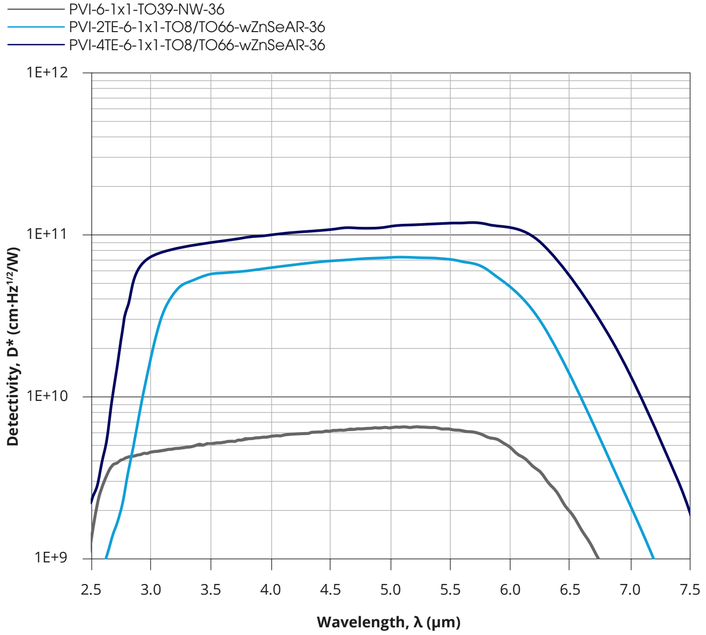
### RELATED PRODUCTS

- **LabM-I-6-01** detection module
- **PVMA-1TE-6-1×1-TO39-pSiAR-70** RoHS-compliant detector
- **AMS6140-01** RoHS-compliant detection module

### APPLICATIONS

- Gas detection, monitoring and analysis: $CH_4$, $C_2H_2$, $CH_2O$, HCl, $NH_3$, $SO_2$, $C_2H_6$, CO, $CO_2$, $NO_x$, $SO_x$, $HNO_3$
- Exhaust gas denitrification
- Combustion process control
- Contactless temperature measurement: railway transport, industrial and laboratory processes monitoring
- Heat-seeking, thermal signature detection
- Non-destructive material testing
- Biochemical analysis
- Laser calibration

### SPECTRAL RESPONSE (Typ., $T_{amb}$ = 293 K)

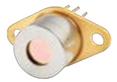


# PVI-6 detector series

InGaAs | InAs | InAsSb | **HgCdTe**

## HgCdTe room temperature and thermoelectrically cooled photovoltaic optically immersed infrared detectors

PARAMETERS (Typ., $T_{amb}$ = 293 K, $V_b$ = 0 V)

| Image | Detector symbol | Cooling | Optical area, $A_o$, mm×mm | Cut-on wavelength, $\lambda_{cut\text{-}on}$ (10%), µm | Peak wavelength, $\lambda_{peak}$, µm | Cut-off wavelength, $\lambda_{cut\text{-}off}$ (10%), µm | Detectivity, D* ($\lambda_{peak}$, 20 kHz), cm·Hz$^{1/2}$/W | Current responsivity, $R_i$ ($\lambda_{peak}$), A/W | Time constant, τ, ns | Package | Recommended amplifier |
|---|---|---|---|---|---|---|---|---|---|---|---|
|  | PVI-6-1×1-TO39-NW-36 | no $T_{chip} \cong T_{amb}$ | 1×1 | 2.5 | 5.1±0.2 | 6.5 | 8.0×10$^9$ | 2.0 | 80 | TO39 (3 pin) | SIP-TO39 |
|  | PVI-2TE-6-1×1-TO8-wZnSeAR-36 | 2TE $T_{chip} \cong$ 230 K | | 2.6 | 5.2±0.2 | 7.0 | 8.0×10$^{10}$ | 2.5 | 50 | 2TE-TO8 | AIP, PIP, MIP, SIP-TO8, FIP*) |
|  | PVI-2TE-6-1×1-TO66-wZnSeAR-36 | | | | | | | | | 2TE-TO66 | - |
|  | PVI-4TE-6-1×1-TO8-wZnSeAR-36 | 4TE $T_{chip} \cong$ 198 K | | | 5.4±0.2 | | 1.2×10$^{11}$ | | | 4TE-TO8 | AIP, PIP, MIP, SIP-TO8, FIP*) |
|  | PVI-4TE-6-1×1-TO66-wZnSeAR-36 | | | | | | | | | 4TE-TO66 | - |

*) Only for biased detectors

# PV-8 detector series

InGaAs | InAs | InAsSb | **HgCdTe**

## HgCdTe thermoelectrically cooled photovoltaic infrared detectors

### FEATURES

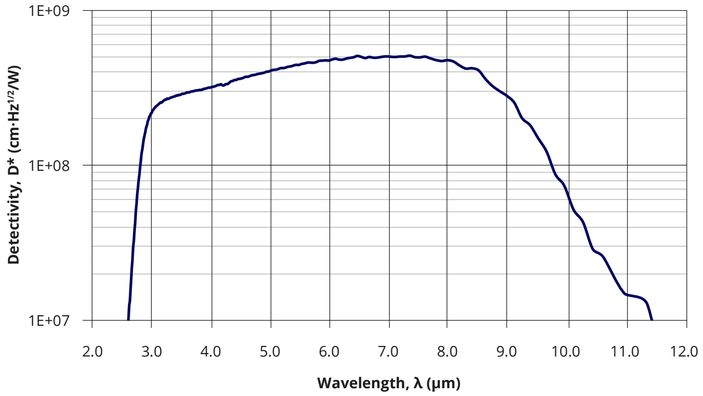
- Spectral range: 3.0 to 10.0 µm
- Back-side illuminated
- No minimum order quantity required

### APPLICATIONS

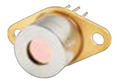
- Gas detection, monitoring and analysis: $CH_4$, $H_2S$, $NO_2$, $SO_x$
- FTIR spectroscopy

### SPECTRAL RESPONSE (Typ., $T_{amb}$ = 293 K)

PV-4TE-8-0.1×0.1-TO8/TO66-wZnSeAR-70




### PARAMETERS (Typ., $T_{amb}$ = 293 K, $V_b$ = 0 V)

| Image | Detector symbol | Cooling | Active area, A, mm×mm | Cut-on wavelength, $\lambda_{cut\text{-}on}$ (10%), µm | Peak wavelength, $\lambda_{peak}$, µm | Cut-off wavelength, $\lambda_{cut\text{-}off}$ (10%), µm | Detectivity, D* ($\lambda_{peak}$, 20 kHz), cm·Hz$^{1/2}$/W | Current responsivity, $R_I$ ($\lambda_{peak}$), A/W | Time constant, τ, ns | Package | Recommended amplifier |
|---|---|---|---|---|---|---|---|---|---|---|---|
|  | PV-4TE-8-0.1×0.1-TO8-wZnSeAR-70 | 4TE $T_{chip} \cong$ 197 K | 0.1×0.1 | 3.0 | 6.5±1.0 | 10.0 | 5.0×10$^8$ | 1.9 | 45 | 4TE-TO8 | AIP, PIP, MIP, SIP-TO8, FIP*) |
|  | PV-4TE-8-0.1×0.1-TO66-wZnSeAR-70 | | | | | | | | | 4TE-TO66 | - |

*) Only for biased detectors

# PVI-8 detector series

InGaAs | InAs | InAsSb | **HgCdTe**

## HgCdTe room temperature and thermoelectrically cooled photovoltaic optically immersed infrared detectors

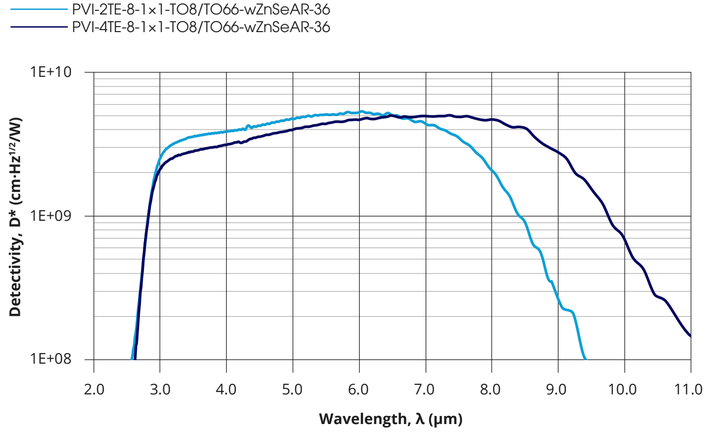
### FEATURES

- Spectral range: 3.0 to 10.0 µm
- Back-side illuminated
- Unique immersion lens technology applied
- No minimum order quantity required

### APPLICATIONS

- Gas detection, monitoring and analysis: $CH_4$, $H_2S$, $NO_2$, $SO_x$
- FTIR spectroscopy

### SPECTRAL RESPONSE (Typ., $T_{amb}$ = 293 K)




### PARAMETERS (Typ., $T_{amb}$ = 293 K, $V_b$ = 0 V)

| Image | Detector symbol | Cooling | Optical area, $A_o$, mm×mm | Cut-on wavelength, $\lambda_{cut\text{-}on}$ (10%), µm | Peak wavelength, $\lambda_{peak}$, µm | Cut-off wavelength, $\lambda_{cut\text{-}off}$ (10%), µm | Detectivity, D* ($\lambda_{peak}$, 20 kHz), cm·Hz$^{1/2}$/W | Current responsivity, $R_i$ ($\lambda_{peak}$), A/W | Time constant, τ, ns | Package | Recommended amplifier |
|---|---|---|---|---|---|---|---|---|---|---|---|
|  | PVI-2TE-8-1×1-TO8-wZnSeAR-36 | 2TE $T_{chip}$ ≅ 230 K | 1×1 | 3.0 | 6.0±1.0 | 8.9 | 4.0×10$^9$ | 1.6 | 45 | 2TE-TO8 | AIP, PIP, MIP, SIP-TO8, FIP*) |
|  | PVI-2TE-8-1×1-TO66-wZnSeAR-36 | | | | | | | | | 2TE-TO66 | - |
|  | PVI-4TE-8-1×1-TO8-wZnSeAR-36 | 4TE $T_{chip}$ ≅ 197 K | | | 6.5±1.0 | 10.0 | 5.0×10$^9$ | 3.0 | | 4TE-TO8 | AIP, PIP, MIP, SIP-TO8, FIP*) |
|  | PVI-4TE-8-1×1-TO66-wZnSeAR-36 | | | | | | | | | 4TE-TO66 | - |

*) Only for biased detectors

# PVM-8 detector series

InGaAs | InAs | InAsSb | **HgCdTe**

## HgCdTe thermoelectrically cooled photovoltaic multi-junction infrared detectors

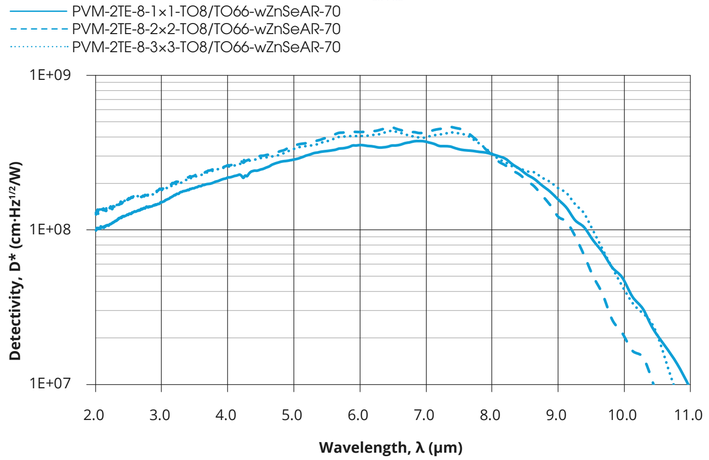
### FEATURES

- Spectral range: 2.0 to 10.0 µm
- Back-side illuminated
- No minimum order quantity required

### APPLICATIONS

- Gas detection, monitoring and analysis: $CH_4$, $H_2S$, $NO_2$, $SO_x$
- FTIR spectroscopy

### SPECTRAL RESPONSE (Typ., $T_{amb}$ = 293 K)



# PVM-8 detector series

InGaAs | InAs | InAsSb | **HgCdTe**

## HgCdTe thermoelectrically cooled photovoltaic multi-junction infrared detectors

PARAMETERS (Typ., $T_{amb}$ = 293 K, $V_b$ = 0 V)

| Image | Detector symbol | Cooling | Active area, A, mm×mm | Cut-on wavelength, $\lambda_{cut\text{-}on}$ (10%), µm | Peak wavelength, $\lambda_{peak}$, µm | Cut-off wavelength, $\lambda_{cut\text{-}off}$ (10%), µm | Detectivity, D* ($\lambda_{peak}$, 20 kHz), cm·Hz$^{1/2}$/W | Current responsivity, $R_I$ ($\lambda_{peak}$), A/W | Time constant, τ, ns | Package | Recommended amplifier |
|---|---|---|---|---|---|---|---|---|---|---|---|
|  | PVM-2TE-8-1×1-TO8-wZnSeAR-70 | 2TE<br>$T_{chip}$ ≅ 230 K | 1×1 | 2.0 | 7.0±1.0 | 10.0 | 4.0×10$^8$ | 0.02 | 4 | 2TE-TO8 | AIP, PIP, MIP, SIP-TO8 |
|  | PVM-2TE-8-1×1-TO66-wZnSeAR-70 | | | | | | | | | 2TE-TO66 | - |
|  | PVM-2TE-8-2×2-TO8-wZnSeAR-70 | | 2×2 | | | | | 0.01 | | 2TE-TO8 | AIP, PIP, MIP, SIP-TO8 |
|  | PVM-2TE-8-2×2-TO66-wZnSeAR-70 | | | | | | | | | 2TE-TO66 | - |
|  | PVM-2TE-8-3×3-TO8-wZnSeAR-70 | | 3×3 | | | | | 0.007 | | 2TE-TO8 | AIP, PIP, MIP, SIP-TO8 |
|  | PVM-2TE-8-3×3-TO66-wZnSeAR-70 | | | | | | | | | 2TE-TO66 | - |

# PVMI-8 detector series

InGaAs | InAs | InAsSb | **HgCdTe**

## HgCdTe thermoelectrically cooled photovoltaic multi-junction optically immersed infrared detectors

### FEATURES

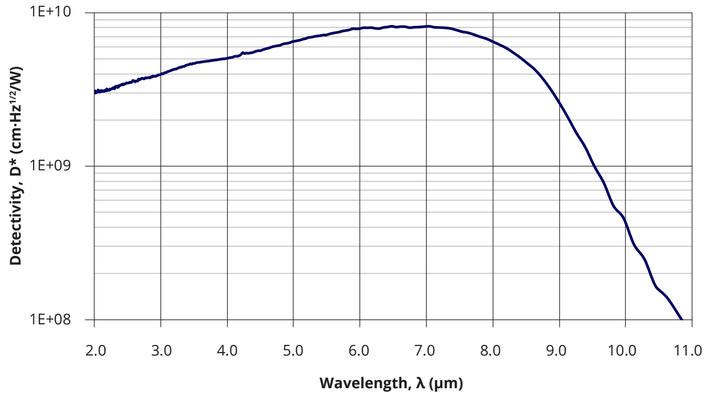
- Spectral range: 2.0 to 9.8 µm
- Back-side illuminated
- Unique immersion lens technology applied
- No minimum order quantity required

### APPLICATIONS

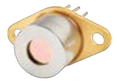
- Gas detection, monitoring and analysis: $CH_4$, $H_2S$, $NO_2$, $SO_x$
- FTIR spectroscopy

### SPECTRAL RESPONSE (Typ., $T_{amb}$ = 293 K)

PVMI-4TE-8-1×1-TO8/TO66-wZnSeAR-36




### PARAMETERS (Typ., $T_{amb}$ = 293 K, $V_b$ = 0 V)

| Image | Detector symbol | Cooling | Optical area, $A_o$, mm×mm | Cut-on wavelength, $\lambda_{cut\text{-}on}$ (10%), µm | Peak wavelength, $\lambda_{peak}$, µm | Cut-off wavelength, $\lambda_{cut\text{-}off}$ (10%), µm | Detectivity, D* ($\lambda_{peak}$, 20 kHz), cm·Hz$^{1/2}$/W | Current responsivity, $R_I$ ($\lambda_{peak}$), A/W | Time constant, τ, ns | Package | Recommended amplifier |
|---|---|---|---|---|---|---|---|---|---|---|---|
|  | PVMI-4TE-8-1×1-TO8-wZnSeAR-36 | 4TE $T_{chip} \cong 197$ K | 1×1 | 2.0 | 7.0±1.0 | 9.8 | 8.0×10$^9$ | 0.4 | 4 | 4TE-TO8 | AIP, PIP, MIP, SIP-TO8 |
|  | PVMI-4TE-8-1×1-TO66-wZnSeAR-36 | | | | | | | | | 4TE-TO66 | - |

# PC-9 detector series

InGaAs | InAs | InAsSb | **HgCdTe**

## HgCdTe thermoelectrically cooled photoconductive infrared detectors

### FEATURES

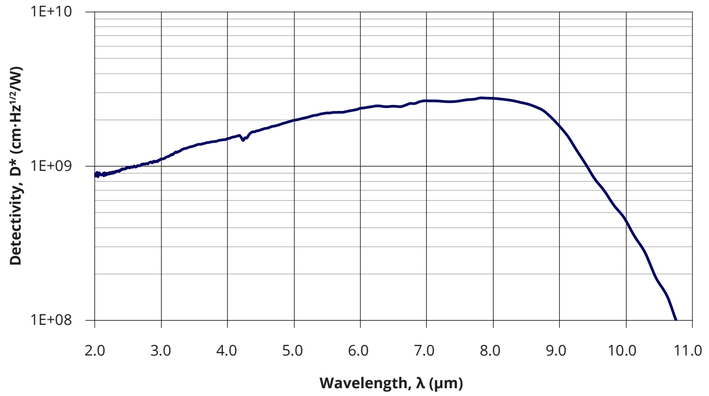
- Spectral range: over 10.3 µm
- Front-side illuminated
- No minimum order quantity required

### APPLICATIONS

- Gas detection, monitoring and analysis: $SO_2$, $NH_3$
- FTIR spectroscopy

### SPECTRAL RESPONSE (Typ., $T_{amb}$ = 293 K)

PC-4TE-9-1×1-TO8/TO66-wZnSeAR-70




### PARAMETERS (Typ., $T_{amb}$ = 293 K, $V_b$ = 0.3 V)

| Image | Detector symbol | Cooling | Active area, A, mm×mm | Peak wavelength, $\lambda_{peak}$, µm | Cut-off wavelength, $\lambda_{cut\text{-}off}$ (10%), µm | Detectivity, D* ($\lambda_{peak}$, 20 kHz), cm·Hz$^{1/2}$/W | Current responsivity, $R_i$ ($\lambda_{peak}$), A/W | Time constant, τ, ns | Package | Recommended amplifier |
|---|---|---|---|---|---|---|---|---|---|---|
|  | PC-4TE-9-1×1-TO8-wZnSeAR-70 | 4TE $T_{chip} \cong$ 200 K | 1×1 | 7.6±0.5 | 10.3 | 1.9×10$^9$ | 0.6 | 80 | 4TE-TO8 | AIP, PIP, MIP SIP-TO8 |
|  | PC-4TE-9-1×1-TO66-wZnSeAR-70 | | | | | | | | 4TE-TO66 | - |

# PCI-9 detector series

InGaAs | InAs | InAsSb | **HgCdTe**

## HgCdTe thermoelectrically cooled optically immersed photoconductive infrared detectors

### FEATURES

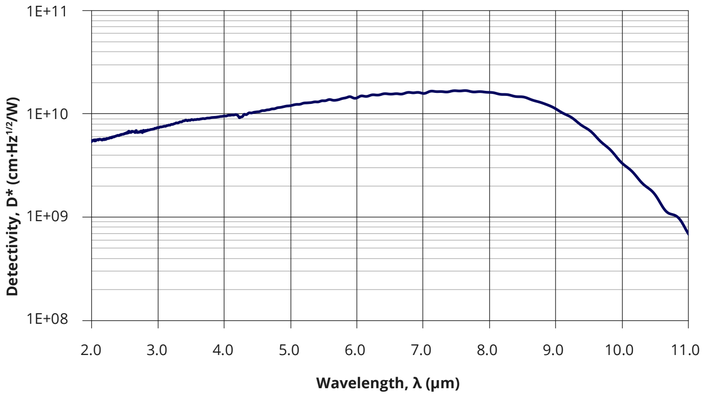
- Spectral range: over 10.4 µm
- Back-side illuminated
- Unique immersion lens technology applied
- No minimum order quantity required

### APPLICATIONS

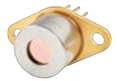
- Gas detection, monitoring and analysis: $SO_2$, $NH_3$
- FTIR spectroscopy

### SPECTRAL RESPONSE (Typ., $T_{amb}$ = 293 K)

PCI-4TE-9-1x1-TO8/TO66-wZnSeAR-36




### PARAMETERS (Typ., $T_{amb}$ = 293 K, $V_b$ = 0.3 V)

| Image | Detector symbol | Cooling | Optical area, $A_o$, mm×mm | Peak wavelength, $\lambda_{peak}$, µm | Cut-off wavelength, $\lambda_{cut\text{-}off}$ (10%), µm | Detectivity, D* ($\lambda_{peak}$, 20 kHz), cm·Hz$^{1/2}$/W | Current responsivity, $R_i$ ($\lambda_{peak}$), A/W | Time constant, τ, ns | Package | Recommended amplifier |
|---|---|---|---|---|---|---|---|---|---|---|
|  | PCI-4TE-9-1×1-TO8-wZnSeAR-36 | 4TE $T_{chip} \cong$ 200 K | 1×1 | 7.6±0.5 | 10.4 | 1.25×10$^{10}$ | 4.0 | 80 | 4TE-TO8 | AIP, PIP, MIP SIP-TO8 |
|  | PCI-4TE-9-1×1-TO66-wZnSeAR-36 | | | | | | | | 4TE-TO66 | - |

# PVI-10.6 detector series

InGaAs | InAs | InAsSb | **HgCdTe**

## HgCdTe thermoelectrically cooled photovoltaic optically immersed infrared detectors

### FEATURES

- Spectral range: 3.0 to 12.0 µm
- Back-side illuminated
- Unique immersion lens technology applied
- No minimum order quantity required

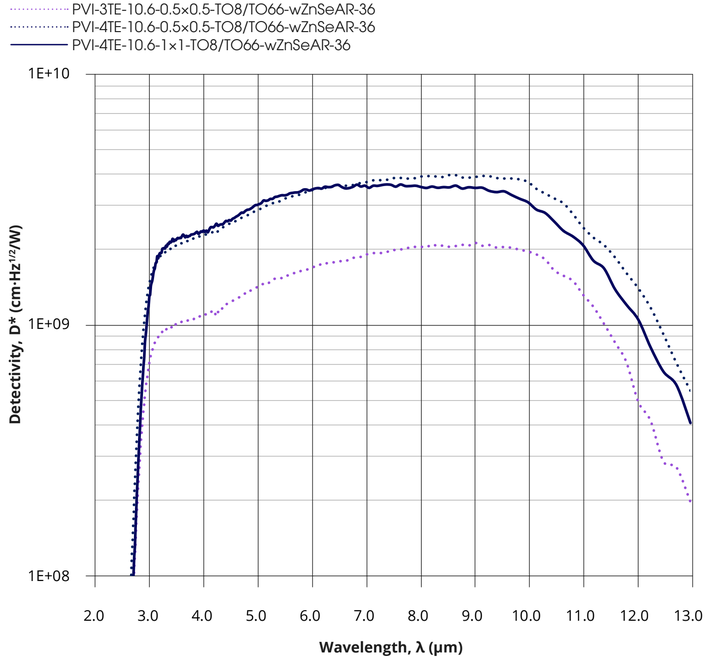
### RELATED PRODUCTS

- **LabM-I-10.6** detection module
- **UM-I-10.6** detection module
- **microM-10.6** detection module
- **PVIA-10-1×1-TO39-NW-36** RoHS-compliant detector
- **AMIS8140-01** RoHS-compliant detection module
- **PVIA-4TE-10-1×1-TO8-wZnSeAR-36** RoHS-compliant detector

### APPLICATIONS

- Gas detection, monitoring and analysis: $SO_2$, $NH_3$, $SF_6$
- CBRN threats detection
- $CO_2$ laser measurements: power monitoring and control, beam profiling and positioning, calibration
- Free-space optical communication
- FTIR spectroscopy
- Medical bacteria identification
- Dentistry
- Glucose sensing

### SPECTRAL RESPONSE (Typ., $T_{amb}$ = 293 K)

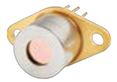
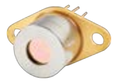
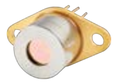


# PVI-10.6 detector series

InGaAs | InAs | InAsSb | **HgCdTe**

## HgCdTe thermoelectrically cooled photovoltaic optically immersed infrared detectors

PARAMETERS (Typ., $T_{amb}$ = 293 K, $V_b$ = 0 V)

| Image | Detector symbol | Cooling | Optical area, $A_o$, mm×mm | Cut-on wavelength, $\lambda_{cut\text{-}on}$ (10%), µm | Peak wavelength, $\lambda_{peak}$, µm | Cut-off wavelength, $\lambda_{cut\text{-}off}$ (10%), µm | Detectivity, D* ($\lambda_{peak}$, 20 kHz), cm·Hz$^{1/2}$/W | Current responsivity, $R_I$ ($\lambda_{peak}$), A/W | Time constant, τ, ns | Package | Recommended amplifier |
|---|---|---|---|---|---|---|---|---|---|---|---|
|  | PVI-3TE-10.6-0.5×0.5-TO8-wZnSeAR-36 | 3TE $T_{chip}$ ≅ 210K | 0.5×0.5 | 3.0 | 8.0±1.0 | 12.0 | 2.0×10$^9$ | 0.9 | 10 | 3TE-TO8 | AIP, PIP, MIP, SIP-TO8, FIP*) |
|  | PVI-3TE-10.6-0.5×0.5-TO66-wZnSeAR-36 | | | | | | | | | 3TE-TO66 | - |
|  | PVI-4TE-10.6-0.5×0.5-TO8-wZnSeAR-36 | 4TE $T_{chip}$ ≅ 198K | | | | | 4.0×10$^9$ | 1.0 | 25 | 4TE-TO8 | AIP, PIP, MIP, SIP-TO8, FIP*) |
|  | PVI-4TE-10.6-0.5×0.5-TO66-wZnSeAR-36 | | | | | | | | | 4TE-TO66 | - |
|  | PVI-4TE-10.6-1×1-TO8-wZnSeAR-36 | | 1×1 | | | | | | | 4TE-TO8 | AIP, PIP, MIP, SIP-TO8, FIP*) |
|  | PVI-4TE-10.6-1×1-TO66-wZnSeAR-36 | | | | | | | | | 4TE-TO66 | - |

*) Only for biased detectors

# PVM-10.6 detector series

InGaAs | InAs | InAsSb | **HgCdTe**

## HgCdTe room temperature and thermoelectrically cooled photovoltaic multi-junction infrared detectors

### FEATURES

- Spectral range: 2.0 to 13.0 µm
- Back-side illuminated
- No minimum order quantity required
- Detector **PVM-10.6-1×1-TO39-NW-90** is a **Selected product**

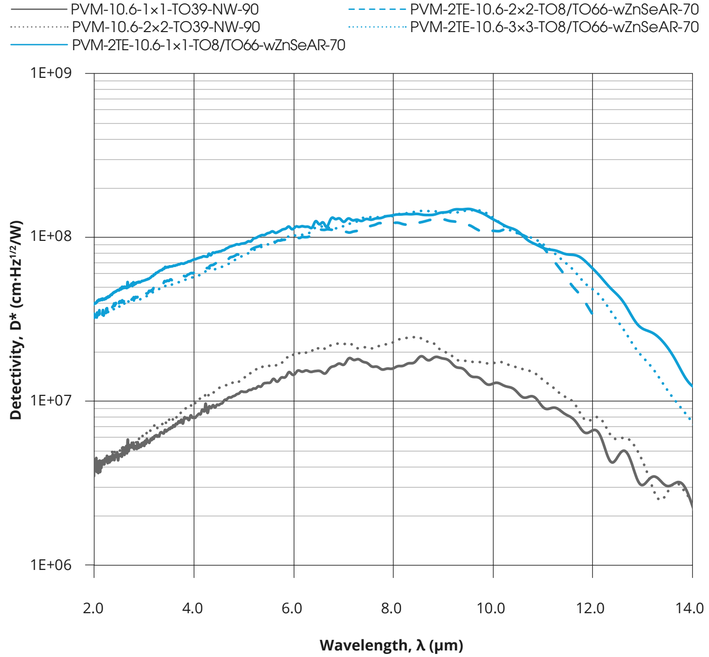
### RELATED PRODUCTS

- **LabM-I-10.6** detection module
- **UM-I-10.6** detection module
- **microM-10.6** detection module
- **PVIA-10-1×1-TO39-NW-36** RoHS-compliant detector
- **AMIS8140-01** RoHS-compliant detection module
- **PVIA-4TE-10-1×1-TO8-wZnSeAR-36** RoHS-compliant detector

### APPLICATIONS

- Gas detection, monitoring and analysis: $SO_2$, $NH_3$, $SF_6$
- CBRN threats detection
- $CO_2$ laser measurements: power monitoring and control, beam profiling and positioning, calibration
- Free-space optical communication
- FTIR spectroscopy
- Medical bacteria identification
- Dentistry
- Glucose sensing

### SPECTRAL RESPONSE (Typ., $T_{amb}$ = 293 K)



# PVM-10.6 detector series

InGaAs | InAs | InAsSb | **HgCdTe**

## HgCdTe room temperature and thermoelectrically cooled photovoltaic multi-junction infrared detectors

PARAMETERS (Typ., $T_{amb}$ = 293 K, $V_b$ = 0 V)

| Image | Detector symbol | Cooling | Active area, A, mm×mm | Cut-on wavelength, $\lambda_{cut\text{-}on}$ (10%), µm | Peak wavelength, $\lambda_{peak}$, µm | Cut-off wavelength, $\lambda_{cut\text{-}off}$ (10%), µm | Detectivity, D* ($\lambda_{peak}$, 20 kHz), cm·Hz$^{1/2}$/W | Current responsivity, $R_I$ ($\lambda_{peak}$), A/W | Time constant, τ, ns | Package | Recommended amplifier |
|---|---|---|---|---|---|---|---|---|---|---|---|
|  | PVM-10.6-1×1-TO39-NW-90 | no $T_{chip} \cong T_{amb}$ | 1×1 | 2.0 | 8.5±1.0 | 12.0 | 2.0×10$^7$ | 0.004 | 1.5 | TO39 (3 pin) | SIP-TO39 |
|  | PVM-10.6-2×2-TO39-NW-90 | | 2×2 | | | | | 0.002 | | | |
|  | PVM-2TE-10.6-1×1-TO8-wZnSeAR-70 | 2TE $T_{chip} \cong$ 230 K | 1×1 | | 9.0±1.0 | 13.0 | 1.5×10$^8$ | 0.015 | 4 | 2TE-TO8 | AIP, PIP, MIP SIP-TO8 |
|  | PVM-2TE-10.6-1×1-TO66-wZnSeAR-70 | | | | | | | | | 2TE-TO66 | - |
|  | PVM-2TE-10.6-2×2-TO8-wZnSeAR-70 | | 2×2 | | | | | 0.007 | | 2TE-TO8 | AIP, PIP, MIP SIP-TO8 |
|  | PVM-2TE-10.6-2×2-TO66-wZnSeAR-70 | | | | | | | | | 2TE-TO66 | - |
|  | PVM-2TE-10.6-3×3-TO8-wZnSeAR-70 | | 3×3 | | | | | 0.0045 | | 2TE-TO8 | AIP, PIP, MIP SIP-TO8 |
|  | PVM-2TE-10.6-3×3-TO66-wZnSeAR-70 | | | | | | | | | 2TE-TO66 | - |

# PVMI-10.6 detector series

InGaAs | InAs | InAsSb | **HgCdTe**

## **HgCdTe room temperature and thermoelectrically cooled photovoltaic multi-junction optically immersed infrared detectors**

### FEATURES

- Spectral range: 2.0 to 13.0 µm
- Back-side illuminated
- Unique immersion lens technology applied
- No minimum order quantity required

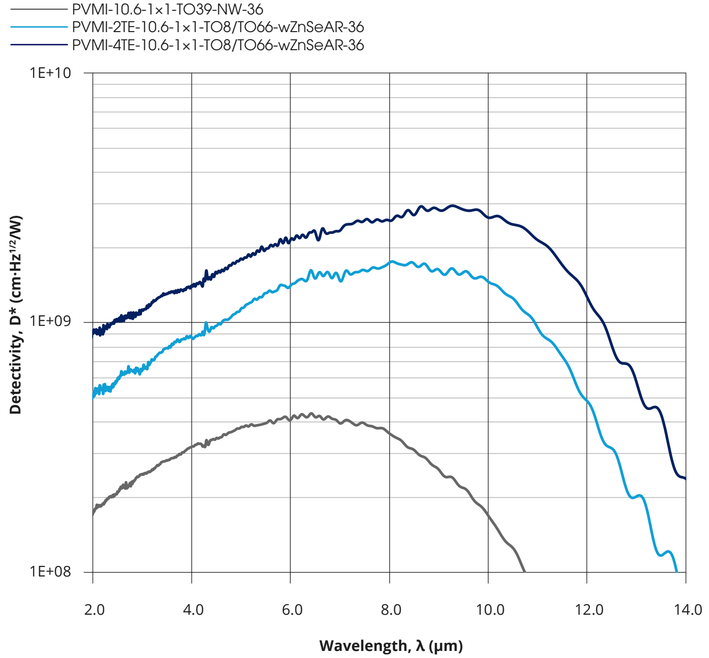
### RELATED PRODUCTS

- **LabM-I-10.6** detection module
- **UM-I-10.6** detection module
- **microM-10.6** detection module
- **PVIA-10-1×1-TO39-NW-36** RoHS-compliant detector
- **AMIS8140-01** RoHS-compliant detection module
- **PVIA-4TE-10-1×1-TO8-wZnSeAR-36** RoHS-compliant detector

### APPLICATIONS

- Gas detection, monitoring and analysis: $SO_2$, $NH_3$, $SF_6$
- CBRN threats detection
- $CO_2$ laser measurements: power monitoring and control, beam profiling and positioning, calibration
- Free-space optical communication
- FTIR spectroscopy
- Medical bacteria identification
- Dentistry
- Glucose sensing

### SPECTRAL RESPONSE (Typ., $T_{amb}$ = 293 K)

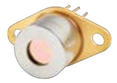


# PVMI-10.6 detector series

InGaAs | InAs | InAsSb | HgCdTe

## HgCdTe room temperature and thermoelectrically cooled photovoltaic multi-junction optically immersed infrared detectors

PARAMETERS (Typ., $T_{amb}$ = 293 K, $V_b$ = 0 V)

| Image | Detector symbol | Cooling | Optical area, $A_o$, mm×mm | Cut-on wavelength, $\lambda_{cut\text{-}on}$ (10%), µm | Peak wavelength, $\lambda_{peak}$, µm | Cut-off wavelength, $\lambda_{cut\text{-}off}$ (10%), µm | Detectivity, D* ($\lambda_{peak}$, 20 kHz), cm·Hz$^{1/2}$/W | Current responsivity, $R_I$ ($\lambda_{peak}$), A/W | Time constant, τ, ns | Package | Recommended amplifier |
|---|---|---|---|---|---|---|---|---|---|---|---|
|  | PVMI-10.6-1×1-TO39-NW-36 | no $T_{chip} \cong T_{amb}$ | 1×1 | 2.0 | 8.5±1.0 | 12.0 | 2.0×10$^8$ | 0.02 | 1.5 | TO39 (3 pin) | SIP-TO39 |
|  | PVMI-2TE-10.6-1×1-TO8-wZnSeAR-36 | 2TE $T_{chip} \cong$ 230K | | | 8.0±1.0 | 13.0 | 2.0×10$^9$ | 0.2 | 3 | 2TE-TO8 | AIP, PIP, MIP, SIP-TO8, FIP*) |
|  | PVMI-2TE-10.6-1×1-TO66-wZnSeAR-36 | | | | | | | | | 2TE-TO66 | - |
|  | PVMI-4TE-10.6-1×1-TO8-wZnSeAR-36 | 4TE $T_{chip} \cong$ 197K | | | 9.0±1.0 | 12.0 | 3.0×10$^9$ | 0.36 | | 4TE-TO8 | AIP, PIP, MIP, SIP-TO8, FIP*) |
|  | PVMI-4TE-10.6-1x1-TO66-wZnSeAR-36 | | | | | | | | | 2TE-TO66 | - |

*) Only for biased detectors

# PEM-10.6-1×1-PEM-SMA-wZnSeAR-48 detector

InGaAs | InAs | InAsSb | **HgCdTe**

## **HgCdTe** room temperature photoelectromagnetic infrared detector

### FEATURES

- Spectral range: 2.0 to 12.0 µm
- Back-side illuminated
- No minimum order quantity required

### RELATED PRODUCTS

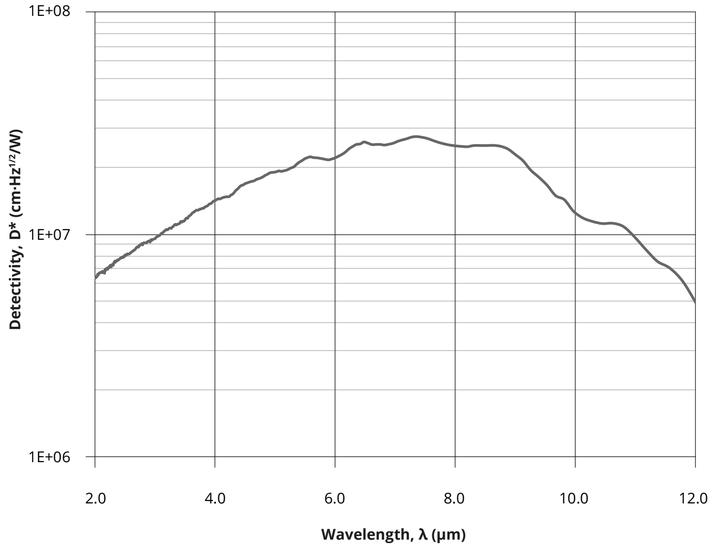
- **LabM-I-10.6** detection module
- **UM-I-10.6** detection module
- **microM-10.6** detection module
- **PVIA-10-1×1-TO39-NW-36** RoHS-compliant detector
- **AMIS8140-01** RoHS-compliant detection module
- **PVIA-4TE-10-1×1-TO8-wZnSeAR-36** RoHS-compliant detector

### APPLICATIONS

- Gas detection, monitoring and analysis: $SO_2$, $NH_3$, $SF_6$
- CBRN threats detection
- $CO_2$ laser measurements: power monitoring and control, beam profiling and positioning, calibration
- Free-space optical communication
- FTIR spectroscopy
- Medical bacteria identification
- Dentistry
- Glucose sensing

### SPECTRAL RESPONSE (Typ., $T_{amb}$ = 293 K)

——— PEM-10.6-1×1-PEM-SMA-wZnSeAR-48




### PARAMETERS (Typ., $T_{amb}$ = 293 K, $V_b$ = 0 V)

| Image | Detector symbol | Cooling | Active area, A, mm×mm | Cut-on wavelength, $\lambda_{cut\text{-}on}$ (10%), µm | Peak wavelength, $\lambda_{peak}$, µm | Cut-off wavelength, $\lambda_{cut\text{-}off}$ (10%), µm | Detectivity, D* ($\lambda_{peak}$, 20 kHz), cm·Hz$^{1/2}$/W | Current responsivity, $R_i$ ($\lambda_{peak}$), A/W | Time constant, τ, ns | Package | Recommended amplifier |
|---|---|---|---|---|---|---|---|---|---|---|---|
|  | PEM-10.6-1×1-PEM-SMA-wZnSeAR-48 | no $T_{chip} \cong T_{amb}$ | 1×1 | 2.0 | 8.5±1.0 | 12.0 | $2.0\times10^7$ | 0.004 | 1.2 | PEM-SMA | - |

# PVMQ-10.6-1×1-TO8-NW-70 detector

InGaAs | InAs | InAsSb | **HgCdTe**

## **HgCdTe room temperature photovoltaic multi-junction quadrant infrared detector**

### FEATURES

- Spectral range: 2.0 to 12.0 µm
- 4 elements (2 rows, 2 columns)
- Back-side illuminated
- No minimum order quantity required

### APPLICATIONS

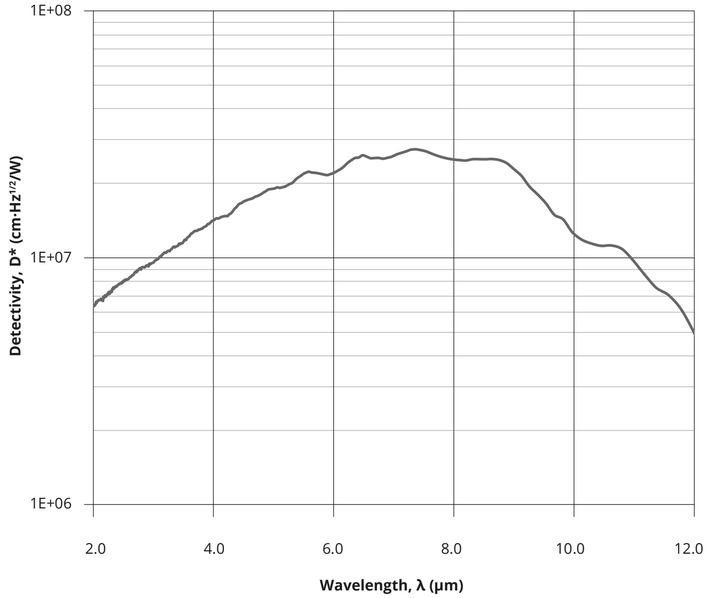
- Gas detection, monitoring and analysis: $SO_2$, $NH_3$, $SF_6$
- CBRN threats detection
- $CO_2$ laser measurements: power monitoring and control, beam profiling and positioning, calibration
- Free-space optical communication
- FTIR spectroscopy
- Medical bacteria identification
- Dentistry
- Glucose sensing

### RELATED PRODUCTS

- **LabM-I-10.6** detection module
- **UM-I-10.6** detection module
- **microM-10.6** detection module
- **PVIA-10-1×1-TO39-NW-36** RoHS-compliant detector
- **AMIS8140-01** RoHS-compliant detection module
- **PVIA-4TE-10-1×1-TO8-wZnSeAR-36** RoHS-compliant detector

### SPECTRAL RESPONSE (Typ., $T_{amb}$ = 293 K)

PVMQ-10.6-1×1-TO8-NW-70




### PARAMETERS (Typ., $T_{amb}$ = 293 K, $V_b$ = 0 V)

| Image | Detector symbol | Cooling | Active area of single element, A, mm×mm | Active area pitch, mm | Cut-on wavelength, $\lambda_{cut\text{-}on}$ (10%), µm | Peak wavelength, $\lambda_{peak}$, µm | Cut-off wavelength, $\lambda_{cut\text{-}off}$ (10%), µm | Detectivity, D* ($\lambda_{peak}$, 20 kHz), cm·Hz$^{1/2}$/W | Current responsivity, $R_i$ ($\lambda_{peak}$), A/W | Time constant, τ, ns | Package |
|---|---|---|---|---|---|---|---|---|---|---|---|
|  | PVMQ-10.6-1×1-TO8-NW-70 | no $T_{chip} \cong T_{amb}$ | 1×1 | 1.15 (horizontally)<br>1.20 (vertically) | 2.0 | 8.5±1.0 | 12.0 | $2.0\times10^7$ | 0.004 | 1.5 | TO8 |

# PC-10.6 detector series

InGaAs | InAs | InAsSb | **HgCdTe**

## HgCdTe thermoelectrically cooled photoconductive infrared detectors

### FEATURES

- Spectral range: over 10.3 µm
- Front-side illuminated
- No minimum order quantity required

### RELATED PRODUCTS

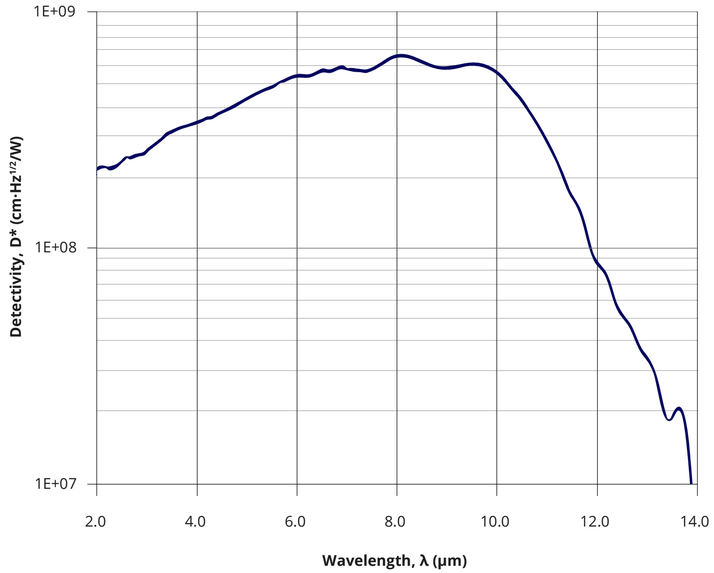
- **LabM-I-10.6** detection module
- **UM-I-10.6** detection module
- **microM-10.6** detection module
- **PVIA-10-1×1-TO39-NW-36** RoHS-compliant detector
- **AMIS8140-01** RoHS-compliant detection module
- **PVIA-4TE-10-1×1-TO8-wZnSeAR-36** RoHS-compliant detector

### APPLICATIONS

- Gas detection, monitoring and analysis: $SO_2$, $NH_3$, $SF_6$
- CBRN threats detection
- $CO_2$ laser measurements: power monitoring and control, beam profiling and positioning, calibration
- Free-space optical communication
- FTIR spectroscopy
- Medical bacteria identification
- Dentistry
- Glucose sensing

### SPECTRAL RESPONSE (Typ., $T_{amb}$ = 293 K)

PC-4TE-10.6-1×1-TO8/T66-wZnSeAR-70




### PARAMETERS (Typ., $T_{amb}$ = 293 K, $V_b$ = 0.4 V)

| Image | Detector symbol | Cooling | Active area, A, mm×mm | Peak wavelength, $\lambda_{peak}$, µm | Cut-off wavelength, $\lambda_{cut\text{-}off}$ (10%), µm | Detectivity, D* ($\lambda_{peak}$, 20 kHz), cm·Hz$^{1/2}$/W | Current responsivity, $R_i$ ($\lambda_{peak}$), A/W | Time constant, τ, ns | Package | Recommended amplifier |
|---|---|---|---|---|---|---|---|---|---|---|
|  | PC-4TE-10.6-1×1-TO8-wZnSeAR-70 | 4TE $T_{chip} \cong$ 200 K | 1×1 | 8.5±0.6 | 13.0 | 6.5×10$^8$ | 0.06 | 30 | 4TE-TO8 | AIP, PIP, MIP SIP-TO8 |
|  | PC-4TE-10.6-1×1-TO66-wZnSeAR-70 | | | | | | | | 4TE-TO66 | - |

# PCI-10.6 detector series

InGaAs | InAs | InAsSb | **HgCdTe**

## HgCdTe thermoelectrically cooled optically immersed photoconductive infrared detectors

### FEATURES

- Spectral range: over 12.8 µm
- Back-side illuminated
- Unique immersion lens technology applied
- No minimum order quantity required

### RELATED PRODUCTS

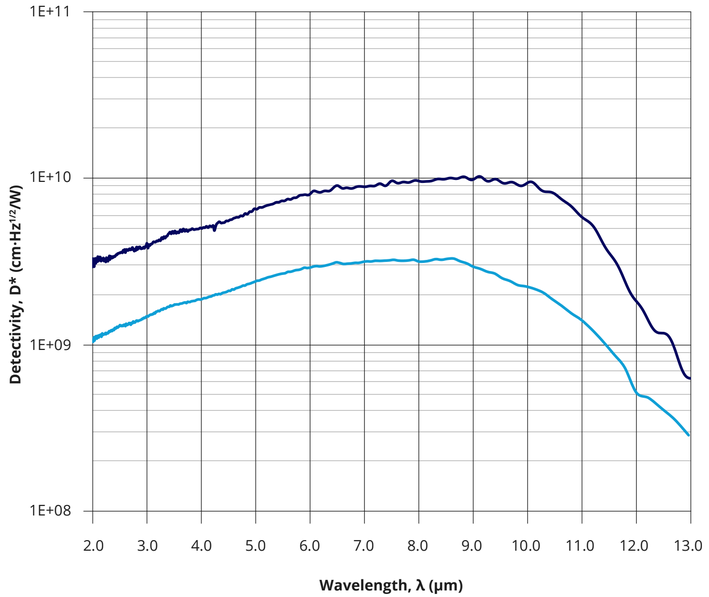
- **LabM-I-10.6** detection module
- **UM-I-10.6** detection module
- **microM-10.6** detection module
- **PVIA-10-1×1-TO39-NW-36** RoHS-compliant detector
- **AMIS8140-01** RoHS-compliant detection module
- **PVIA-4TE-10-1×1-TO8-wZnSeAR-36** RoHS-compliant detector

### APPLICATIONS

- Gas detection, monitoring and analysis: $SO_2$, $NH_3$, $SF_6$
- CBRN threats detection
- $CO_2$ laser measurements: power monitoring and control, beam profiling and positioning, calibration
- Free-space optical communication
- FTIR spectroscopy
- Medical bacteria identification
- Dentistry
- Glucose sensing

### SPECTRAL RESPONSE (Typ., $T_{amb}$ = 293 K)

PCI-2TE-10.6-1×1-TO8/TO66-wZnSeAR-36
PCI-4TE-10.6-1×1-TO8/TO66-wZnSeAR-36

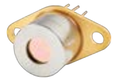


# PCI-10.6 detector series

InGaAs | InAs | InAsSb | **HgCdTe**

## HgCdTe thermoelectrically cooled optically immersed photoconductive infrared detectors

PARAMETERS (Typ., $T_{amb}$ = 293 K)

| Image | Detector symbol | Cooling | Optical area, $A_O$, mm×mm | Peak wavelength, $\lambda_{peak}$, µm | Cut-off wavelength, $\lambda_{cut\text{-}off}$ (10%), µm | Detectivity, D* ($\lambda_{peak}$, 20 kHz), cm·Hz$^{1/2}$/W | Current responsivity, $R_i$ ($\lambda_{peak}$), A/W | Time constant, τ, ns | Package | Recommended amplifier |
|---|---|---|---|---|---|---|---|---|---|---|
|  | PCI-2TE-10.6-1×1-TO8-wZnSeAR-36 | 2TE $T_{chip} \cong$ 230K | 1×1 | 8.2±0.8 | 12.8 | 1.0×10$^9$ | 0.6 | 10 | 2TE-TO8 | AIP, PIP, MIP SIP-TO8 |
|  | PCI-2TE-10.6-1×1-TO66-wZnSeAR-36 | | | | | | | | 2TE-TO66 | - |
|  | PCI-4TE-10.6-1×1-TO8-wZnSeAR-36 | 4TE $T_{chip} \cong$ 200K | | 9.5±0.6 | 12.5 | 3.0×10$^9$ | 0.7 | 30 | 4TE-TO8 | AIP, PIP, MIP SIP-TO8 |
|  | PCI-4TE-10.6-1×1-TO66-wZnSeAR-36 | | | | | | | | 4TE-TO66 | - |

# PCI-12 detector series

InGaAs | InAs | InAsSb | **HgCdTe**

## HgCdTe thermoelectrically cooled optically immersed photoconductive infrared detectors

### FEATURES

- Spectral range: over 14.0 µm
- Back-side illuminated
- Unique immersion lens technology applied
- No minimum order quantity required
- Detector **PCI-3TE-12-1×1-TO8-wZnSeAR-36** is a **Selected product**

### APPLICATIONS

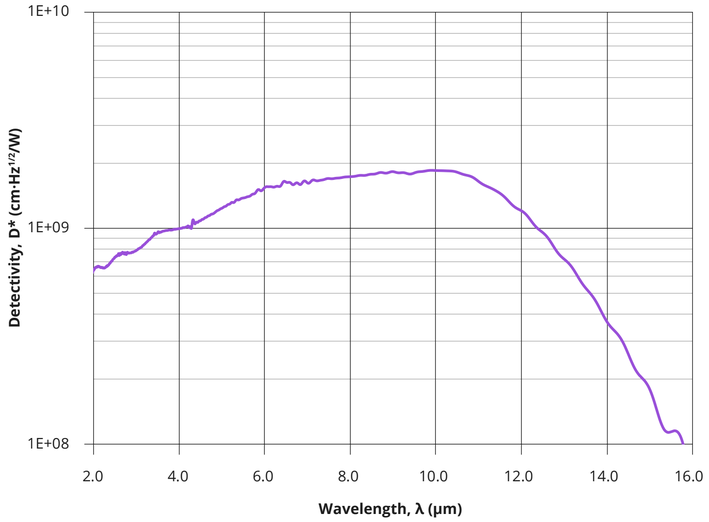
- FTIR spectroscopy
- Gas detection, monitoring and analysis: $C_2H_6$, $NH_3$
- Laser measurements: power monitoring and control, beam profiling and positioning, calibration

### RELATED PRODUCT

- **SM-I-12** detection module

### SPECTRAL RESPONSE (Typ., $T_{amb}$ = 293 K)

PCI-3TE-12-1×1-TO8/T66-wZnSeAR-36




### PARAMETERS (Typ., $T_{amb}$ = 293 K, $V_b$ = 0.9 V)

| Image | Detector symbol | Cooling | Optical area, $A_O$, mm×mm | Peak wavelength, $\lambda_{peak}$, µm | Cut-off wavelength, $\lambda_{cut\text{-}off}$ (10%), µm | Detectivity, D* ($\lambda_{peak}$, 20 kHz), cm·Hz$^{1/2}$/W | Current responsivity, $R_i$ ($\lambda_{peak}$), A/W | Time constant, τ, ns | Package | Recommended amplifier |
|---|---|---|---|---|---|---|---|---|---|---|
|  | PCI-3TE-12-1×1-TO8-wZnSeAR-36 | 3TE $T_{chip} \cong$ 210K | 1×1 | 10.0±0.5 | 14.0 | 1.6×10$^9$ | 1.0 | 5 | 3TE-TO8 | AIP, PIP, MIP SIP-TO8 |
|  | PCI-3TE-12-1×1-TO66-wZnSeAR-36 | | | | | | | | 3TE-TO66 | - |

# PCI-13 detector series

InGaAs | InAs | InAsSb | **HgCdTe**

## HgCdTe thermoelectrically cooled optically immersed photoconductive infrared detectors

### FEATURES

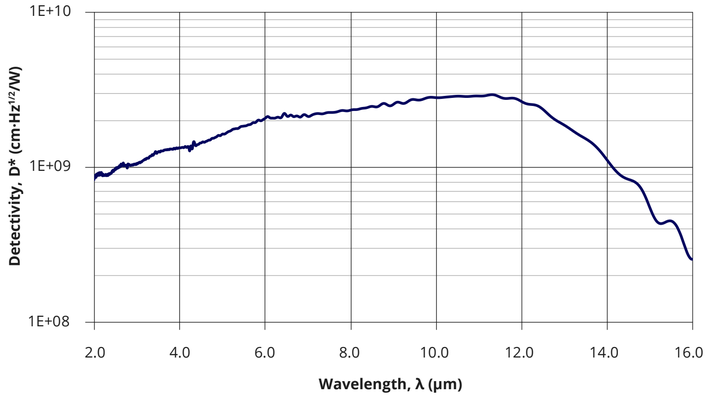
- Spectral range: over 14.0 µm
- Back-side illuminated
- Unique immersion lens technology applied
- No minimum order quantity required

### APPLICATIONS

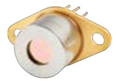
- FTIR spectroscopy
- Gas detection, monitoring and analysis: $C_2H_6$
- Toxic gas detection
- Gas leak detection

### SPECTRAL RESPONSE (Typ., $T_{amb}$ = 293 K)

PCI-4TE-13-1×1-TO8/TO66-wZnSeAR-36




### PARAMETERS (Typ., $T_{amb}$ = 293 K, $V_b$ = 0.8 V)

| Image | Detector symbol | Cooling | Optical area, $A_o$, mm×mm | Peak wavelength, $\lambda_{peak}$, µm | Cut-off wavelength, $\lambda_{cut\text{-}off}$ (10%), µm | Detectivity, D* ($\lambda_{peak}$, 20 kHz), cm·Hz$^{1/2}$/W | Current responsivity, $R_i$ ($\lambda_{peak}$), A/W | Time constant, τ, ns | Package | Recommended amplifier |
|---|---|---|---|---|---|---|---|---|---|---|
|  | PCI-4TE-13-1×1-TO8-wZnSeAR-36 | 4TE $T_{chip} \cong$ 200K | 1×1 | 10.4±0.6 | 14.0 | 2.4×10$^9$ | 0.5 | 6 | 4TE-TO8 | AIP, PIP, MIP SIP-TO8 |
|  | PCI-4TE-13-1×1-TO66-wZnSeAR-36 | | | | | | | | 4TE-TO66 | - |

# PCI-14 detector series

InGaAs | InAs | InAsSb | **HgCdTe**

## HgCdTe thermoelectrically cooled optically immersed photoconductive infrared detectors

### FEATURES

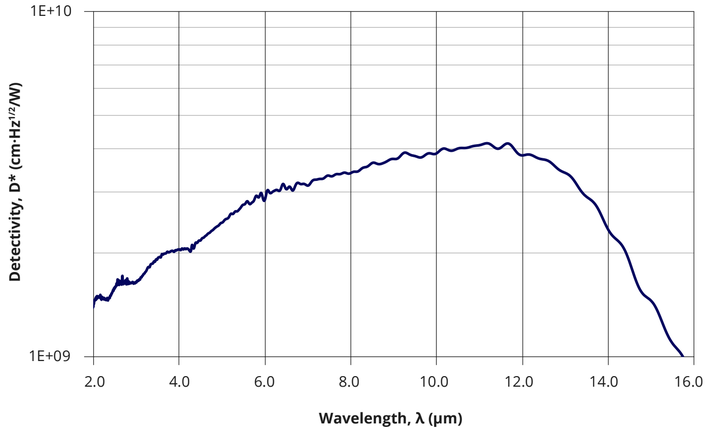
- Spectral range: over 15.0 µm
- Back-side illuminated
- Unique immersion lens technology applied
- No minimum order quantity required

### APPLICATIONS

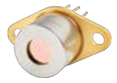
- FTIR spectroscopy
- Gas detection, monitoring and analysis: $CH_3Cl$, $C_2H_2$
- Toxic gas detection

### SPECTRAL RESPONSE (Typ., $T_{amb}$ = 293 K)

PCI-4TE-14-1×1-TO8/TO66-wZnSeAR-36




### PARAMETERS (Typ., $T_{amb}$ = 293 K, $V_b$ = 0.5 V)

| Image | Detector symbol | Cooling | Optical area, $A_o$, mm×mm | Peak wavelength, $\lambda_{peak}$, µm | Cut-off wavelength, $\lambda_{cut\text{-}off}$ (10%), µm | Detectivity, D* ($\lambda_{peak}$, 20 kHz), cm·Hz$^{1/2}$/W | Current responsivity, $R_i$ ($\lambda_{peak}$), A/W | Time constant, τ, ns | Package | Recommended amplifier |
|---|---|---|---|---|---|---|---|---|---|---|
|  | PCI-4TE-14-1×1-TO8-wZnSeAR-36 | 4TE $T_{chip} \cong$ 200K | 1×1 | 11.2±0.6 | 15.0 | 1.7×10$^9$ | 0.8 | 5 | 4TE-TO8 | AIP, PIP, MIP SIP-TO8 |
|  | PCI-4TE-14-1×1-TO66-wZnSeAR-36 | | | | | | | | 4TE-TO66 | - |

# PC-LN2 detector series

InGaAs | InAs | InAsSb | **HgCdTe**

## HgCdTe photoconductive infrared detectors optimized for operation at 77 K

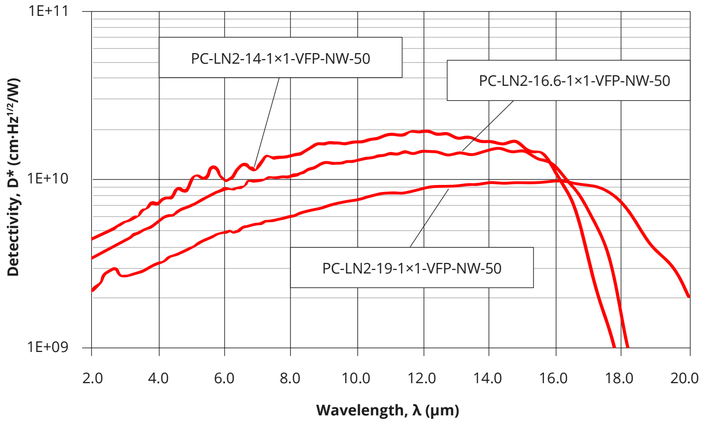
### FEATURES

- Active element material optimized for operation at 77 K
- Especially designed flatpack package (without window) for easy self-assembly in LN2 metal dewars
- Possible assembly in LN2 metal dewars (Kadel KR163-FSMA2, Kadel KR-323) by VIGO Photonics (on request)
- Possible assembly of temperature sensor (on request)
- Active area dimension 0.25 mm × 0.25 mm available
- Other acceptance angle values available

### APPLICATIONS

- FTIR spectroscopy

### SPECTRAL RESPONSE (Typ., $T_{amb}$ = 293 K)




### PARAMETERS ($T_{amb}$ = 293 K, $T_{chip}$ = 77 K, $I_b$ = 15 mA)

| Image | Detector symbol | Cooling | Active area, A, mm×mm | Peak wavelength, $\lambda_{peak}$, µm | Cut-off wavelength, $\lambda_{cut\text{-}off}$ (10%), µm | Detectivity, D* ($\lambda_{peak}$, 20 kHz), cm·Hz$^{1/2}$/W | Volatge responsivity, Rv ($\lambda_{peak}$), V/W | Package |
|---|---|---|---|---|---|---|---|---|
|  | PC-LN2-14-1×1-VFP-NW-50 | LN2 (for operation in 77 K) | 1×1 | 12.1 | 17.4 | 1.9×10$^{10}$ | 500 | VFP (flatpack) |
|  | PC-LN2-16.6-1×1-VFP-NW-50 | | | 14.3 | 18.1 | 1.5×10$^{10}$ | | |
|  | PC-LN2-19-1×1-VFP-NW-50 | | | 16.0 | ≥20 | 1.0×10$^{10}$ | 170 | |

# AM0 detection module

**IInAsSb room temperature infrared detection module with an integrated differential amplifier**

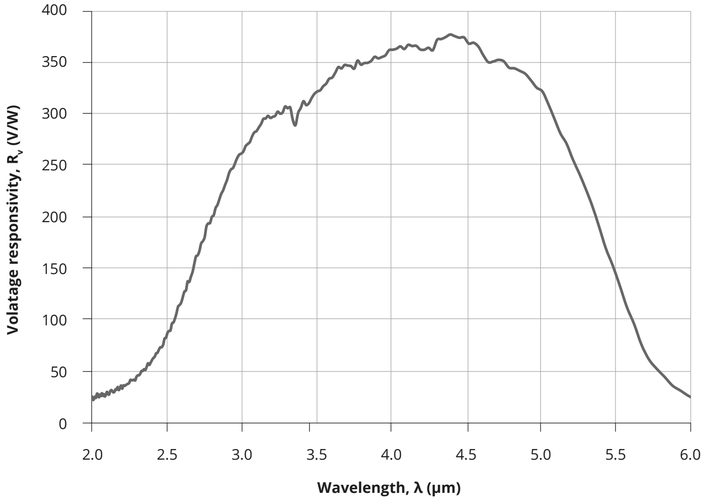
## FEATURES

- RoHS-compliant III-V material
- Spectral range: 1.7 to 5.9 µm
- Active area: 1 mm × 1 mm
- Bandwidth: DC up to 3.0 MHz
- Single, low-voltage power supply: 3.0 V
- Differential output
- Small dimensions: 10 mm × 10 mm
- Low weight: 0.3 g

## APPLICATIONS

- Gas detectors with MEMS, LED, or laser sources
- Temperature sensors
- Embedded systems
- Portable devices

## SPECTRAL RESPONSE (Typ., $T_{amb}$ = 20°C)




## PARAMETERS (Typ., $T_{amb}$ = 20°C, $R_{load}$ = 1 MΩ)

| Image | Detection module symbol | Cooling | Active area, A, mm×mm | Spectral range, µm | Peak wavelength, $\lambda_{peak}$, µm | Detectivity, D* ($\lambda_{peak}$, 20kHz), cm·Hz$^{1/2}$/W | Voltage responsivity, $R_v$ ($\lambda_{peak}$) V/W | -3dB bandwidth, MHz |
|---|---|---|---|---|---|---|---|---|
|  | AM03100-02 | no $T_{chip} \cong T_{amb}$ | 1×1 | 1.7-5.9 | 4.0 | $5.0\times10^8$ | 260 | DC-3.0 |

# AMS detection module series

**InAsSb temperature-stabilized infrared detection module with an integrated amplifier and temperature controller**

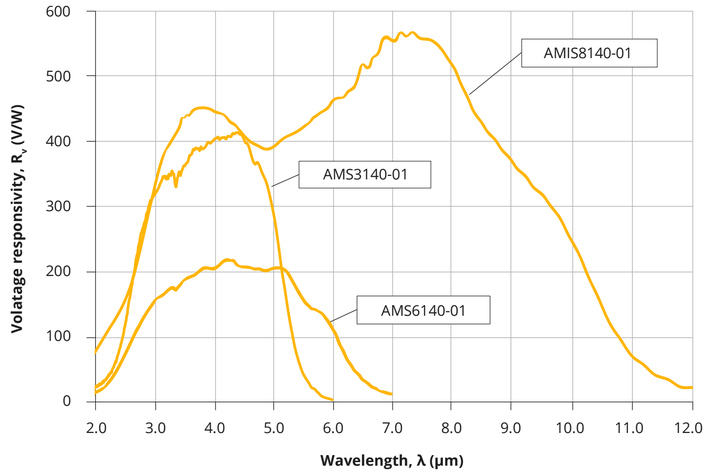
## FEATURES

- RoHS-compliant III-V material
- Built-in temperature controller
- Pin configurable chip temperature
- Low 1/f noise corner
- Single, low-voltage power supply: 3.3 V
- Differential output
- Small dimensions: 30 mm × 19 mm × 10 mm
- Evaluation kit and additional accessories available
- Low power consumption
- Unique immersion lens technology applied (AMIS8140-01)

## APPLICATIONS

- Gas detectors with MEMS, LED, or laser sources
- Temperature sensors
- Embedded systems
- Portable devices

## SPECTRAL RESPONSE (Typ., $T_{amb}$ = 20°C, $T_{chip}$ = -20°C)




## PARAMETERS (Typ., $T_{amb}$ = 20°C, $R_{load}$ = 1 MΩ)

| Image | Detection module symbol | Cooling | Active area, A, mm×mm | Spectral range, µm | Peak wavelength, $\lambda_{peak}$, µm | Detectivity, D* ($\lambda_{peak}$, 20 kHz), cm·Hz$^{1/2}$/W | Voltage responsivity, $R_v$ ($\lambda_{peak}$) V/W | -3dB bandwidth, MHz |
|---|---|---|---|---|---|---|---|---|
|  | AMS3140-01 | 1TE $T_{chip} \cong 253$ K | 1×1 | 2.0-5.5 | 4.0 | $2.0\times10^9$ | 400 | DC – 4.0 |
|  | AMS6140-01 | 1TE $T_{chip} \cong 253$ K | | 2.2-6.8 | 4.2 | $1.0\times10^9$ | 220 | DC – 2.6 |
| **Image** | **Detection module symbol** | **Cooling** | **Optical area, $A_o$, mm×mm** | **Spectral range, µm** | **Peak wavelength, $\lambda_{peak}$, µm** | **Detectivity, D* ($\lambda_{peak}$, 20 kHz), cm·Hz$^{1/2}$/W** | **Voltage responsivity, $R_v$ ($\lambda_{peak}$) V/W** | **-3dB bandwidth, MHz** |
|  | AMIS8140-01 | 1TE $T_{chip} \cong 253$ K | 1×1 | 1.9-11.0 | 7.4 | $2.4\times10^9$ | 550 | DC-3.0 |

# LabM detection module series

**Programmable infrared detection modules based on HgCdTe thermoelectrically cooled optically immersed photovoltaic detectors**

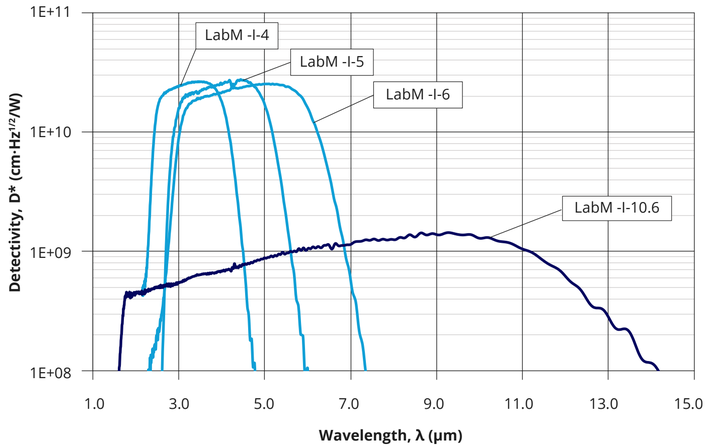
## FEATURES

- High performance and reliability
- DC offset compensation
- Built-in fan
- M4 mounting hole
- Compatible with optical accessories
- Versatile and flexible
- Quantity discounted price
- Fast delivery
- No minimum order quantity required

## PROGRAMMABLE PARAMETERS

- Gain: in the 40 dB range
- Bandwidth
- Coupling: AC/DC
- Detector temperature
- Output voltage offset

## SPECTRAL RESPONSE (Typ., $T_{amb}$ = 293 K)




## PARAMETERS (Typ., $T_{amb}$ = 293 K, $R_{load}$ = 50 Ω)

| Image | Detection module symbol | Detector symbol | Optical area, $A_o$, mm×mm | Spectral range, μm | Peak wavelength, $\lambda_{peak}$, μm | Detectivity, D* ($\lambda_{peak}$, 20 kHz), cm·Hz$^{1/2}$/W | Voltage responsivity, $R_v$ ($\lambda_{peak}$) V/W | -3dB bandwidth, MHz |
|---|---|---|---|---|---|---|---|---|
|  | LabM-I-4 | PVI-2TE-4-1×1-TO8-w$Al_2O_3$-36 | 1×1 | 2.3 – 4.4 | 3.5 | $2.7\times10^{10}$ | $5.0\times10^{4}$ | DC – 7.5 |
|  | LabM-I-5 | PVI-2TE-5-1×1-TO8-w$Al_2O_3$--36 | | 2.7 – 5.6 | 4.4 | $2.8\times10^{10}$ | $7.9\times10^{4}$ | DC – 18 |
|  | LabM-I-6-01 | PVI-2TE-6-1×1-TO8-wZnSeAR-36 | | 2.6 – 7.0 | 5.2 | $2.5\times10^{10}$ | $8.2\times10^{4}$ | DC-4.0 |
|  | LabM-I-10.6 | PVMI-4TE-10.6-1×1-TO8-wZnSeAR-36 | | 2.0 – 12.0 | 9.0 | $1.4\times10^{9}$ | $3.2\times10^{3}$ | DC - 120 |

# LabM detection module series

**Programmable infrared detection modules based on HgCdTe thermoelectrically cooled optically immersed photovoltaic detectors**

## APPLICATIONS

**LabM-I-4**

- Gas detection, monitoring and analysis: $CH_4$, $C_2H_2$, $CH_2O$, HCl, $NH_3$, $SO_2$, $C_2H_6$, $CO_2$
- Breath analysis: $C_2H_6$, $CH_2O$, $NH_3$
- Explosion prevention
- Exhaust gas denitrification
- Emission control (exhaust fumes, greenhouse gases)
- Contactless temperature measurements (metal industry)
- Research and prototyping

## APPLICATIONS

**LabM-I-5**

- Contactless temperature measurement: railway transport, industrial and laboratory processes monitoring
- Flame and explosion detection
- Threat warning systems
- Heat-seeking, thermal signature detection
- Dentistry
- Gas detection, monitoring and analysis: $CH_4$, $C_2H_2$, $CH_2O$, HCl, $NH_3$, $SO_2$, $C_2H_6$, CO, $CO_2$, $NO_x$
- Breath analysis: $C_2H_6$, $CH_2O$, $NH_3$, NO, OCS
- Gas leak detection
- Combustion process control
- Non-destructive material testing
- Research and prototyping

## APPLICATIONS

**LabM-I-6-01**

- Gas detection, monitoring and analysis: $CH_4$, $C_2H_2$, $CH_2O$, HCl, $NH_3$, $SO_2$, $C_2H_6$, CO, $CO_2$, $NO_x$, $SO_x$, $HNO_3$
- Exhaust gas denitrification
- Combustion process control
- Contactless temperature measurement: railway transport, industrial and laboratory processes monitoring
- Heat-seeking, thermal signature detection
- Non-destructive material testing
- Biochemical analysis
- Laser calibration
- Research and prototyping

## APPLICATIONS

**LabM-I-10.6**

- Gas detection, monitoring and analysis: $SO_2$, $NH_3$, $SF_6$
- CBRN threats detection
- $CO_2$ laser measurements: power monitoring and control, beam profiling and positioning, calibration
- Free-space optical communication
- FTIR spectroscopy
- Medical bacteria identification
- Dentistry
- Glucose sensing
- Research and prototyping

# microM-10.6 detection module

**Micro-size infrared detection module based on HgCdTe room temperature photovoltaic multi-junction detector**

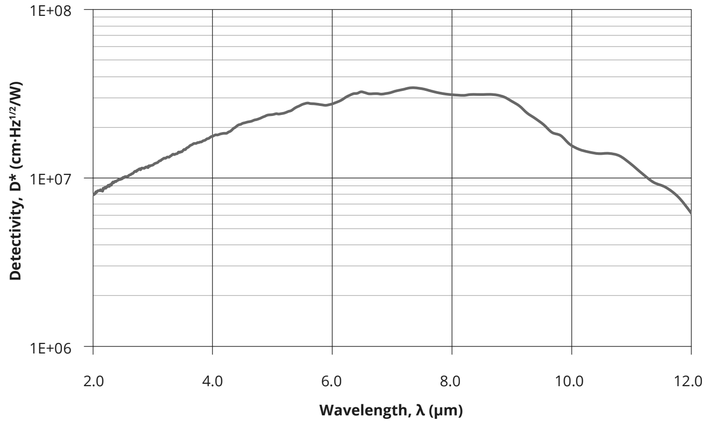
## FEATURES

- Very small size
- Convenient to use
- Versatile
- Cost-effective OEM version available
- Quantity discounted price
- Fast delivery

## APPLICATIONS

- Gas detection, monitoring and analysis: $SO_2$, $NH_3$, $SF_6$
- CBRN threats detection
- $CO_2$ laser measurements: power monitoring and control, beam profiling and positioning, calibration
- Free-space optical communication
- FTIR spectroscopy
- Medical bacteria identification
- Dentistry

## SPECTRAL RESPONSE (Typ., $T_{amb} = T_{chip} = 293K$)




## PARAMETERS (Typ., $T_{amb} = T_{chip} = 293$ K, $R_{load} = 50\ \Omega$)

| Image | Detection module symbol | Detector symbol | Active area, A, mm×mm | Spectral range, μm | Peak wavelength, $\lambda_{peak}$, μm | Detectivity, D* ($\lambda_{peak}$, 20 kHz), cm·Hz$^{1/2}$/W | Voltage responsivity, $R_v$ ($\lambda_{peak}$) V/W | -3dB bandwidth, MHz |
|---|---|---|---|---|---|---|---|---|
|  | microM-10.6 | PVM-10.6-1×1-TO39-NW-90 | 1×1 | 2.0 – 12.0 | 8.5 | $3.4\times10^7$ | $2.1\times10^2$ | DC – 10 |

# UM-I-10.6 detection module

**“All-in-one” infrared detection module based on HgCdTe thermoelectrically cooled photovoltaic multi-junction optically immersed detector**

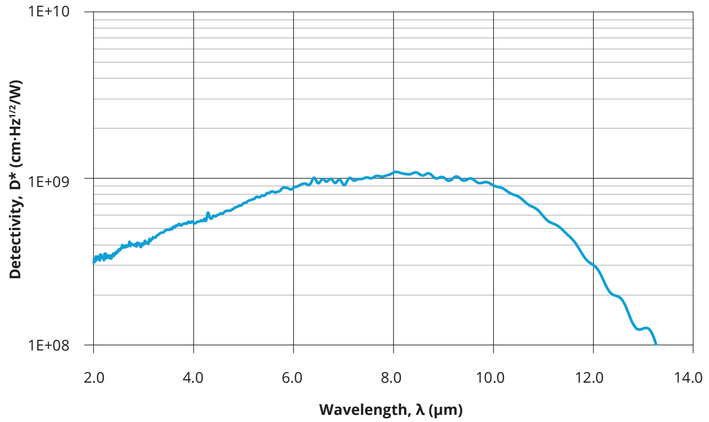
## FEATURES

- Integrated TEC controller and fan
- M4 mounting hole
- DC monitor
- Optimized for effective heat dissipation
- Compatible with optical accessories
- Quantity discounted price
- Fast delivery
- No minimum order quantity required

## APPLICATIONS

- Gas detection, monitoring and analysis: $SO_2$, $NH_3$, $SF_6$
- CBRN threats detection
- $CO_2$ laser measurements: power monitoring and control, beam profiling and positioning, calibration
- Free-space optical communication
- FTIR spectroscopy
- Medical bacteria identification
- Dentistry

## SPECTRAL RESPONSE (Typ., $T_{amb}$ = 293 K, $T_{chip}$ = 230 K)




## PARAMETERS (Typ., $T_{amb}$ = 293 K, $T_{chip}$ = 230 K, $R_{load}$ = 50 Ω)

| Image | Detection module symbol | Detector symbol | Optical area, $A_o$, mm×mm | Spectral range, μm | Peak wavelength, $\lambda_{peak}$, μm | Detectivity, D* ($\lambda_{peak}$, 20 kHz), cm·Hz$^{1/2}$/W | Voltage responsivity, $R_v$ ($\lambda_{peak}$) V/W | -3dB bandwidth, MHz |
|---|---|---|---|---|---|---|---|---|
|  | UM-I-10.6 | PVMI-2TE-10.6-1×1-TO8-wZnSeAR-36 | 1×1 | 2.0 – 13.0 | 8.0 | 1.1×10$^9$ | 2.5×10$^3$ | DC – 100 |

# UHSM detection module series

**Ultra-high-speed infrared detection modules based on HgCdTe thermoelectrically cooled photovoltaic optically immersed either non-optically immersed detectors**

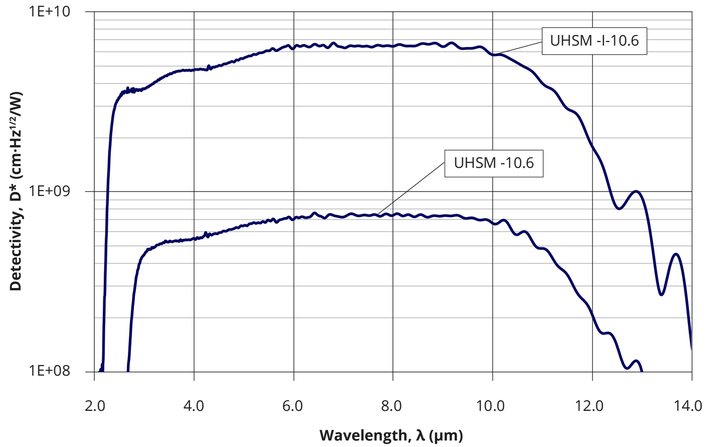
## FEATURES

- High performance and reliability
- DC monitor
- Single power supply
- Integrated TEC controller and fan
- M4 mounting hole
- Compatible with optical accessories
- Quantity discounted price
- Fast delivery
- No minimum order quantity required

## APPLICATIONS

- Dual-comb spectroscopy
- Heterodyne detection
- Characterization of pulsed laser sources
- LIDARs
- Object scanners
- Time-resolved fluorescence spectroscopy systems
- Free-space optical communication
- Telemetry

## SPECTRAL RESPONSE (Typ., $T_{amb}$ = 293 K, $T_{chip}$ = 215 K)




## PARAMETERS (Typ., $T_{amb}$ = 293 K, $T_{chip}$ = 215 K, $R_{load}$ = 50 Ω)

| Image | Detection module symbol | Optical immersion | Active area, A, mm×mm | Spectral range, µm | Peak wavelength, $\lambda_{peak}$, µm | Detectivity, D* ($\lambda_{peak}$, 20 kHz), cm·Hz$^{1/2}$/W | Voltage responsivity, $R_v$ ($\lambda_{peak}$) V/W | -3dB bandwidth |
|---|---|---|---|---|---|---|---|---|
|  | UHSM-10.6 | no | 0.05×0.05 | 2.0 – 13.0 | 8.0 | $7.6\times10^{8}$ | $6.4\times10^{3}$ | 300 Hz– 1.25 GHz |
| **Image** | **Detection module symbol** | **Optical immersion** | **Optical area, $A_o$, mm×mm** | **Spectral range, µm** | **Peak wavelength, $\lambda_{peak}$, µm** | **Detectivity, D* ($\lambda_{peak}$, 20 kHz), cm·Hz$^{1/2}$/W** | **Voltage responsivity, $R_v$ ($\lambda_{peak}$) V/W** | **-3dB bandwidth** |
|  | UHSM-I-10.6 | hyperhemisphere | 1×1 | 3.0 – 12.0 | 8.0 | $6.7\times10^{9}$ | $2.7\times10^{3}$ | 300 Hz – 0.9 GHz |

# SM-I-12 detection module

**Small-size infrared detection module based on HgCdTe thermoelectrically cooled optically immersed photoconductive detector**

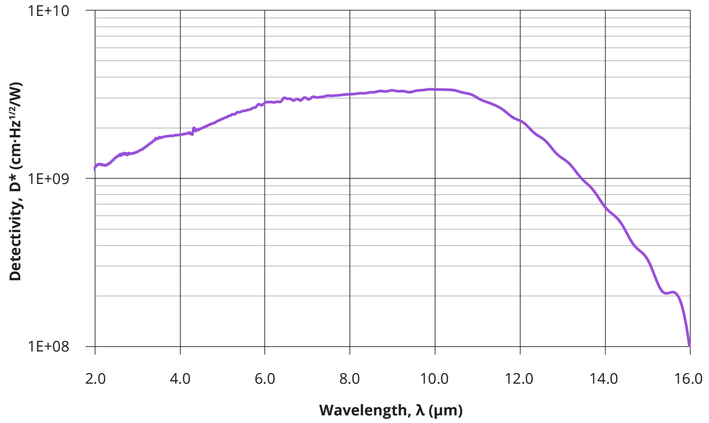
## FEATURES

- Adjustable gain
- Small size
- Compatible with optical accessories
- External heatsink required
- External TEC controller required
- Quantity discounted price
- Fast delivery
- No minimum order quantity required

## APPLICATIONS

- FTIR spectroscopy
- Gas detection, monitoring and analysis: $C_2H_6$, $NH_3$
- Laser measurements: power monitoring and control, beam profiling and positioning, calibration

## SPECTRAL RESPONSE (Typ., $T_{amb}$ = 293 K, $T_{chip}$ = 210 K)




## PARAMETERS (Typ., $T_{amb}$ = 293 K, $T_{chip}$ = 210 K, $R_{load}$ = 1 MΩ)

| Image | Detection module symbol | Detector symbol | Optical area, $A_o$, mm×mm | Spectral range, µm | Peak wavelength, $\lambda_{peak}$, µm | Detectivity, D* ($\lambda_{peak}$, 20 kHz), cm·Hz$^{1/2}$/W | Voltage responsivity, $R_v$ ($\lambda_{peak}$) V/W | -3dB bandwidth, MHz |
|---|---|---|---|---|---|---|---|---|
|  | SM-I-12 | PCI-3TE-12-1×1-TO8-wZnSeAR-36 | 1×1 | over 14.0 | 10.0 | $3.4\times10^9$ | $1.5\times10^5$ | 10 Hz – 1 MHz |

# Accessories for the infrared detectors

## AMPLIFIERS

| Image | Amplifier symbol | Main feature | Low cut-off frequency, $f_{lo}$, Hz | High cut-off frequency, $f_{hi}$, Hz | Transimpedance, $K_I$, V/A | Heatsink, fan | TEC controller | Mounting hole |
|---|---|---|---|---|---|---|---|---|
|  | AIP | "all-in-one" | DC, 10, 100, 1k, 10k | 100k, 1M, 10M, 100M, 250M | up to 200k (fixed) | on board | on board | M4 |
|  | PIP | programmable | DC/10 | 150k/1.5M/20M 1.5M/15M/200M | 2.5k – 150k 0.5k – 30k (digitally adjustable) | on board | PTCC-01 obligatory | M4 |
|  | MIP | medium-size | DC, 10, 100, 1k, 10k | 100k, 1M, 10M, 100M, 250M | up to 200k (fixed) | on board | PTCC-01 needed | M4 |
|  | SIP-TO8 | small-size (for TE-cooled detectors) | DC, 10, 100, 1k, 10k | 100k, 1M, 10M, 100M, 250M | up to 100k (fixed or tunable) | MHS-2 needed | PTCC-01 needed | none |
|  | SIP-TO39 | small-size (for uncooled detectors) | DC, 10, 100, 1k, 10k | 100k, 1M, 10M, 100M, 250M | up to 100k (fixed or tunable) | not needed | not needed | none |
|  | FIP | fast | 1k, 10k | 1G | up to 8.5k (fixed) | on board | PTCC-01 needed | M4 |

## MECHANICAL ACCESSORIES

| Detector holder |
|---|
|  |
| DH-2 |

## AMPLIFIER FOR SMD DETECTORS

| Differential amplifier for the SMD detectors |
|---|
|  |
| SMD-3.6k-AMP |

# Accessories for the infrared detection modules

## TEC CONTROLLERS

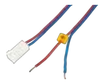
| Image | TEC controller symbol | Description |
|---|---|---|
|  | PTCC-01-OEM (oem) | • TEC controller and power supply without package.<br>• Configurable by PC software available on VIGO website.<br>• Status LED indicator and status/data connector. |
|  | PTCC-01-BAS (basic) | • TEC controller and power supply encapsulated in a small size package.<br>• Configurable by PC software available on VIGO website.<br>• Status LED indicator. |
|  | PTCC-01-ADV (advanced) | • TEC controller and power supply encapsulated in a small size package.<br>• Configurable by built-in function keys or PC software available on VIGO website.<br>• Status LCD indicator. |

## POWER SUPPLIES

| Image | Power supply symbol | Description |
|---|---|---|
|  | PPS-03-09 | • Recommended for IR modules with high cut-off frequency $f_{hi} \leq 1$ MHz.<br>• IR module power supply output voltage: ±9 V.<br>• IR module power supply output current: ±100 mA. |
|  | PPS-03-15 | • Recommended for IR modules with high cut-off frequency $f_{hi} \geq 1$ MHz.<br>• IR module power supply output voltage: ±15 V.<br>• IR module power supply output current: ±100 mA. |

# Accessories for the infrared detection modules

## AC ADAPTOR AND CABLES

| AC adaptor | Cable for PC connection | Power supply cables | |
|---|---|---|---|
|  |  |  |  |
| GEM18I05-P1J/GE24I07-PJ/<br>GE18I09-P1J/SYS1541-2412<br>Set of sockets (EU, UK, US) | USB: TypeA-MicroB<br>(1.8 m) | KK2-POWER<br>(0.5 m) | JWPF-DB9<br>(1.8 m) |

**Power supply, TE cooler, thermistor and fan cables**

| | | | |
|---|---|---|---|
|  |  |  |  |
| LEMO-DB9<br>(1.8 m) | AMP2×4-DB9<br>(1.8 m) | AMP2×4-DUBOX2×5<br>(1.8 m) | LEMO-DUBOX2×5<br>(1.8 m) |

**Signal output cables**

| | | | |
|---|---|---|---|
|  |  |  |  |
| SMA-SMA<br>(1.0 m) | SMA-BNC<br>(1.0 m) | MMCX-SMA<br>(1.0 m) | MMCX-BNC<br>(1.0 m) |

## MECHANICAL ACCESSORIES

| Module holder | Base mounting system | Heatsink | Optical threaded adapter |
|---|---|---|---|
|  |  |  |  |
| MH-1 | DRB-2 | MHS-2 | OTA |

# Accessories for the AM0 and AMS infrared detection module series

## ANALOG ACCESSORIES

| Amplifier x10, DC to 10 MHz | Amplifier x10, 0.1 to 10 MHz | 100 kHz low pass filter | Converter to single-ended SMA output |
|---|---|---|---|
|  |  |  |  |
| AMS-x10-AMP | AMS-x10-ACAMP | AMS-100k-LPF | AMS-x1-SMA |

## ELECTRO-MECHANICAL ACCESSORIES

| Electrical adapter to a 1.27 mm socket | Flexible extender | Heatsink | AM0 adapter for the AMS accessories |
|---|---|---|---|
|  |  |  |  |
| AMS-1.27-EA | AMS-90-FLEX | AMS-HS | AM0-AMS-EA |

## DIGITAL ACCESSORIES

| Digital signal processing with 32bit onboard processing | Communication and power supply over a single microUSB cable |
|---|---|
|  |  |
| AMS-DIG-PROC | AMS-DIG-USB |

## AMPLIFIER FOR SMD DETECTORS

| Differential amplifier for the SMD detectors |
|---|
|  |
| SMD-3.6k-AMP |

# Technical information and technical drawings

## TECHNICAL INFORMATION



## TECHNICAL DRAWINGS

### Detectors



### Accessories for the detectors



### Detection modules



### Accessories for the detection modules



### Accessories for the AM0 and AMS detection module series

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