

Mid Infrared Detector 2 – 5 μm

(Lead Selenide, TEC Cooler, Build-in Chopper)



DATASHEET

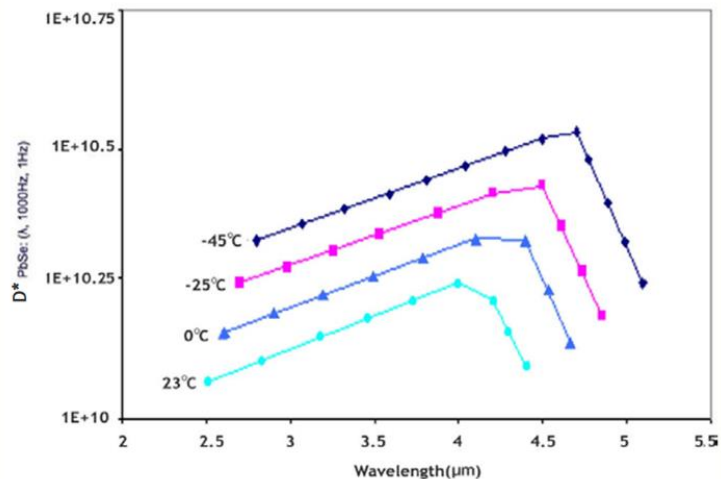
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The CPOD serials lead selenide detectors (PbSs) provide enhanced sensitivity for detecting mid-infrared light in the 2-5 μm range. These detectors are hermetically sealed to ensure low leakage. Within the detector package, a thermoelectric cooler and a MEMS chopper are integrated, significantly reducing background noise while maintaining a compact format. Additionally, a driving PCB with an amplifier is available for convenient use.

All stock detectors undergo a minimum four-week aging period. Experience with detectors manufactured through our proprietary process, which includes the aforementioned aging period, has shown the electrical characteristics to remain stable to within 10% for over a year. The typical response for PbSe detectors operates in the 0.5 to 3 micron spectral region with time constants below 400 μsec . TE-cooled packages are also available with a response in the 2 to 5 micron region, featuring increased D^* .

A typical spectral response of a standard PbSe detector is depicted below.



Features

- 2 - 5 μm
- Low Noise
- Long Life
- Hermetic Sealed Detector
- MEMS Chopper Integration

Applications

- OEM
- Lab user
- Instruments
- Fire Detections

Specifications

| Parameter | Min | Typical | Max | Unit |
|--|-----|---------|-----|---|
| Resistance | 0.5 | | 2.0 | $\text{M}\Omega$ |
| Time Constant | 200 | | 400 | μsec |
| $D^* (\lambda, 200, 1) \times 10^{11}$ | 0.5 | | 0.6 | $\text{cm}\cdot\text{Hz}^{1/2}\cdot\text{W}^{-1}$ |
| Cooling | -40 | | -5 | $^{\circ}\text{C}$ |

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P +1 781-935-1200

E sales@photonwares.com

W www.agiltron.com

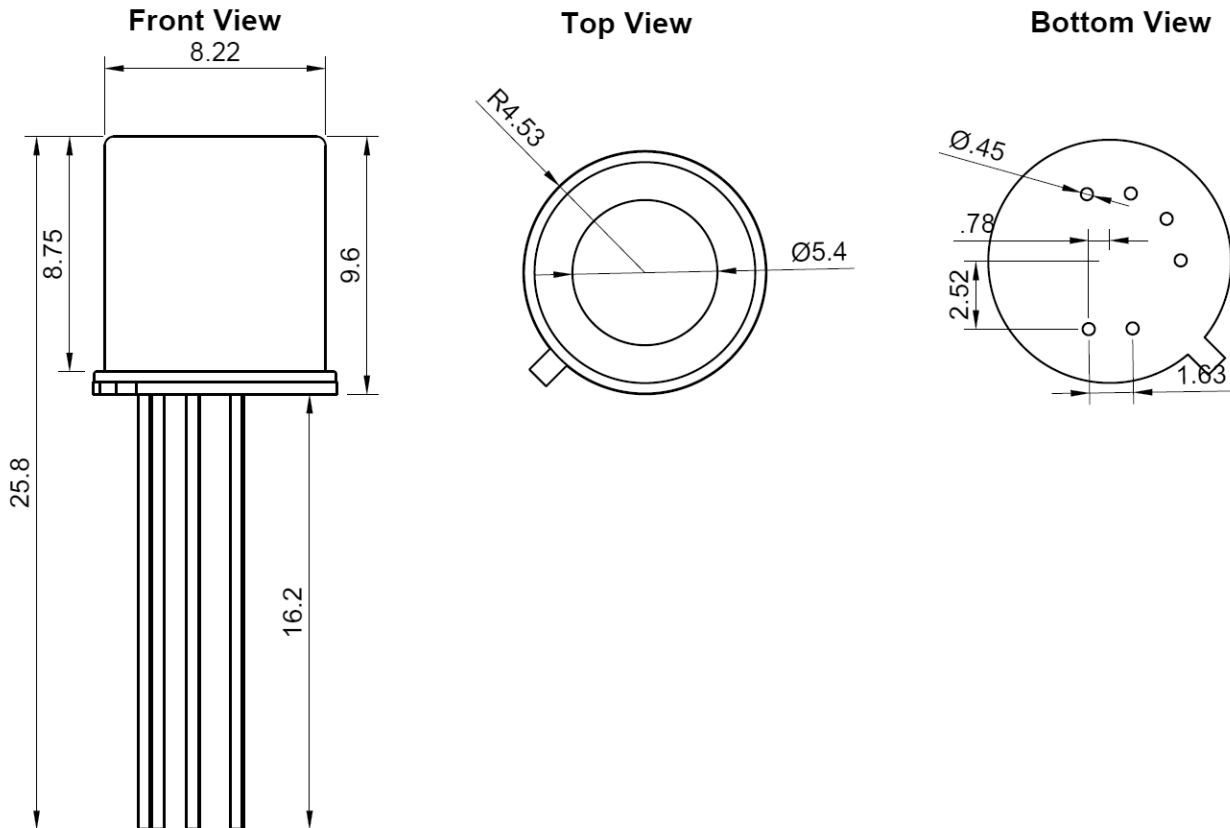
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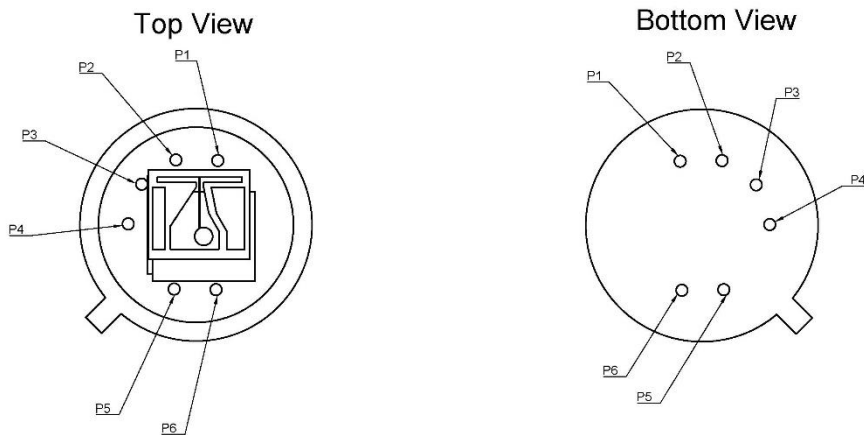
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Mechanical Dimensions (mm)



*Product dimensions may change without notice. This is sometimes required for non-standard specifications.

Contacts Assignment



| PIN NUMBER | ASSIGNMENT |
|------------|------------------|
| P1 | VOA ; Thermistor |
| P2 | VOA ; Thermistor |
| P3 | TEC (-) |
| P4 | TEC (+) |
| P5 | PbS |
| P6 | PbS |

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Ordering Information

| | 5 | <input type="checkbox"/> | <input type="checkbox"/> | 1 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> |
|--------------|---------------|---|--------------------------|--------------|---|--------------------------|---|
| Prefix | Material Type | TEC Type | Integrated Chopper | Element Size | Window | AR Coated | Driver |
| CPOD- | PbSe =5 | 1 stage 0°C = 1 2 stage -20°C = 2 3 stage -40°C = 3 | None =1 Yes =2 | 1x1mm = 1 | Quartz = 1 Spectral Filter = S Sapphire = 2 | No = 0 Yes = 1 | No = 00 Yes = 11 |

Application Notes