

# Mid Infrared Detector 1 – 3 $\mu\text{m}$

(Lead Sulfide, TEC Cooling, Build-in Chopper)



DATASHEET

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## Features

- 1 - 3  $\mu\text{m}$
- Low Noise
- Long Life
- Hermetic Sealed Detector
- MEMS Chopper Integration

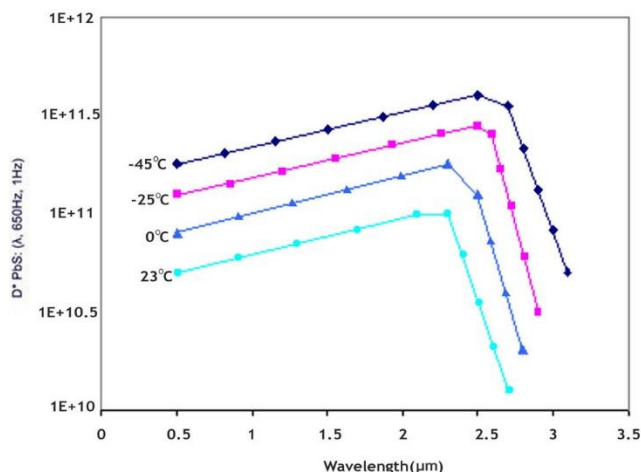
## Applications

- OEM
- Lab user
- Instruments
- Fire Detections

The CPOD serials lead sulfide detectors (PbS) provide enhanced sensitivity for detecting mid-infrared light in the 1-3  $\mu\text{m}$  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 PbS detectors operates in the 0.5 to 3 micron spectral region with time constants below 400  $\mu\text{sec}$ . TE-cooled packages are also available with a response in the 0.5 to 3 micron region, featuring increased  $D^*$ .

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



## Specifications

Parameter	Min	Typical	Max	Unit
Resistance	0.5		2.0	$\text{M}\Omega$
Time Constant	200		400	$\mu\text{sec}$
$D^* (\lambda, 200, 1) \times 10^{11}$	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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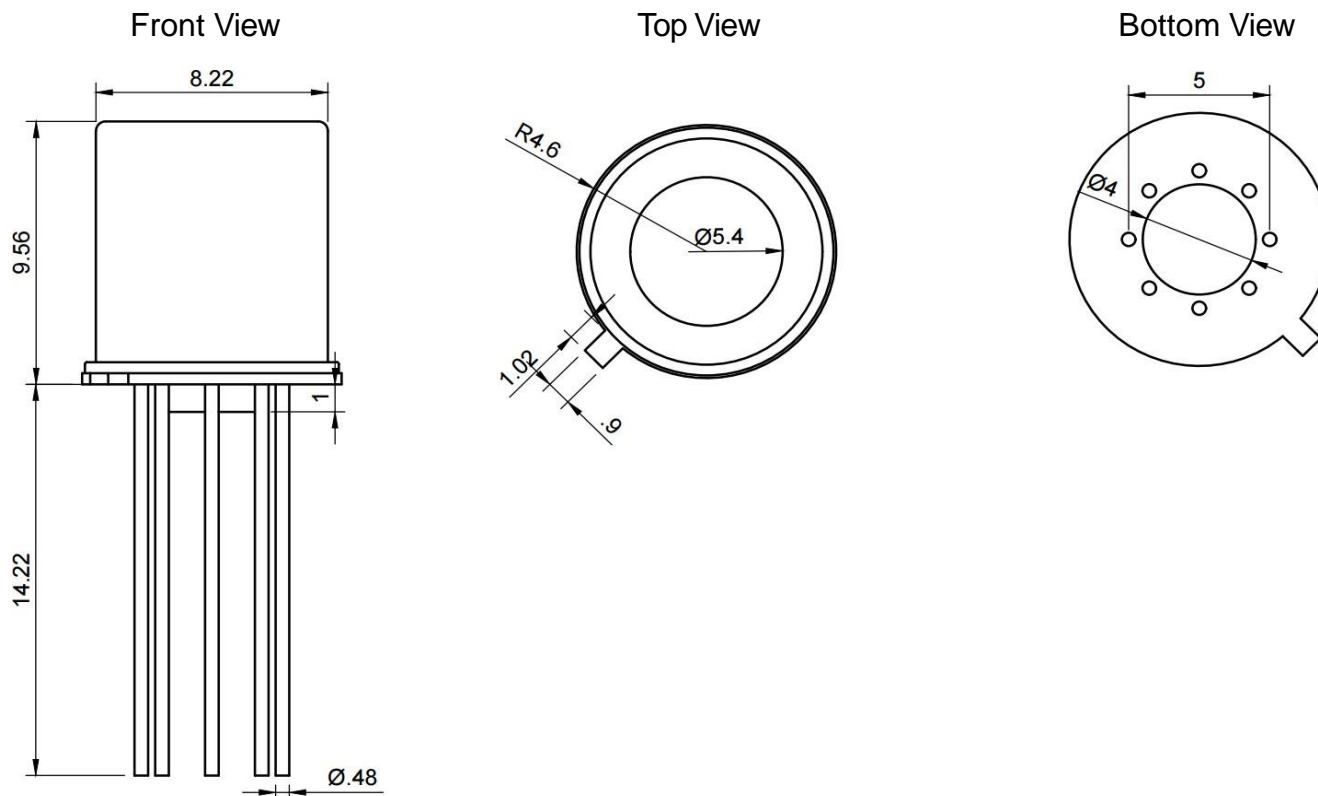
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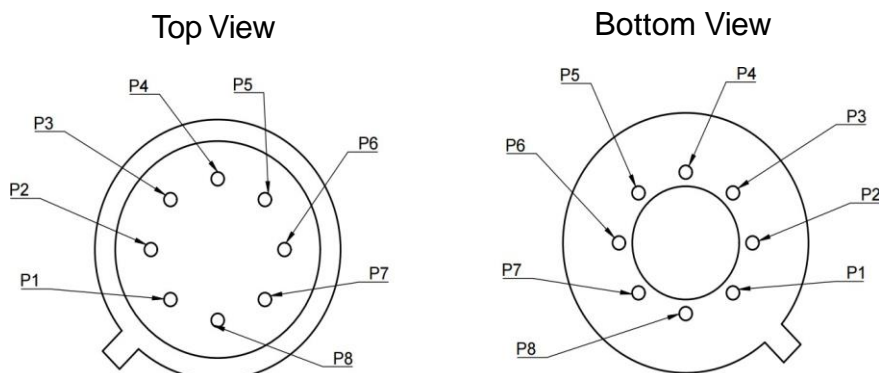
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### Mechanical Dimensions (mm)



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

### Contacts Assignment



PIN NUMBER	ASSIGNMENT
P1	TEC (+)
P2	TEC (-)
P3	Thermistor
P4	Thermistor
P5	MEMS Chopper
P6	MEMS Chopper
P7	PbS
P8	PbS

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## Ordering Information

	3	<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-	PbS =3	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