

Mid Infrared Detector 1 – 3 μm

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



DATASHEET

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Features

- 1 - 3 μm
- Low Noise
- Long Life
- Hermetic Sealed Detector
- MEMS Chopper Integration

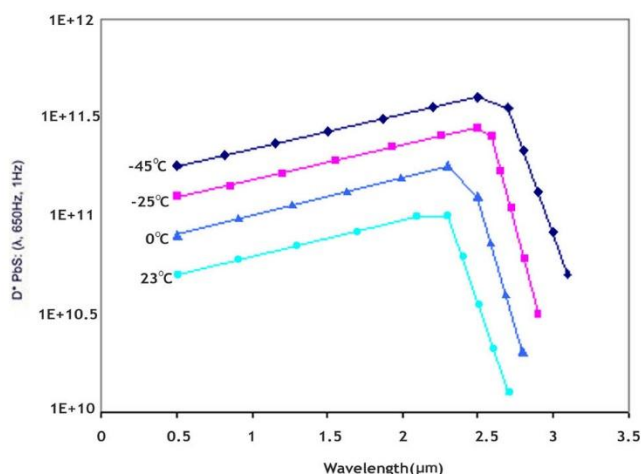
Applications

- 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 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 PbS 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 0.5 to 3 micron region, featuring increased D^* .

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



Due to their high sensitivity to electrostatic discharge, warranty coverage applies only to fully metal covered modules the benchtops, which include proper protection. Other versions of the lasers and photodetectors are not covered by any warranty. Please use them with great caution.

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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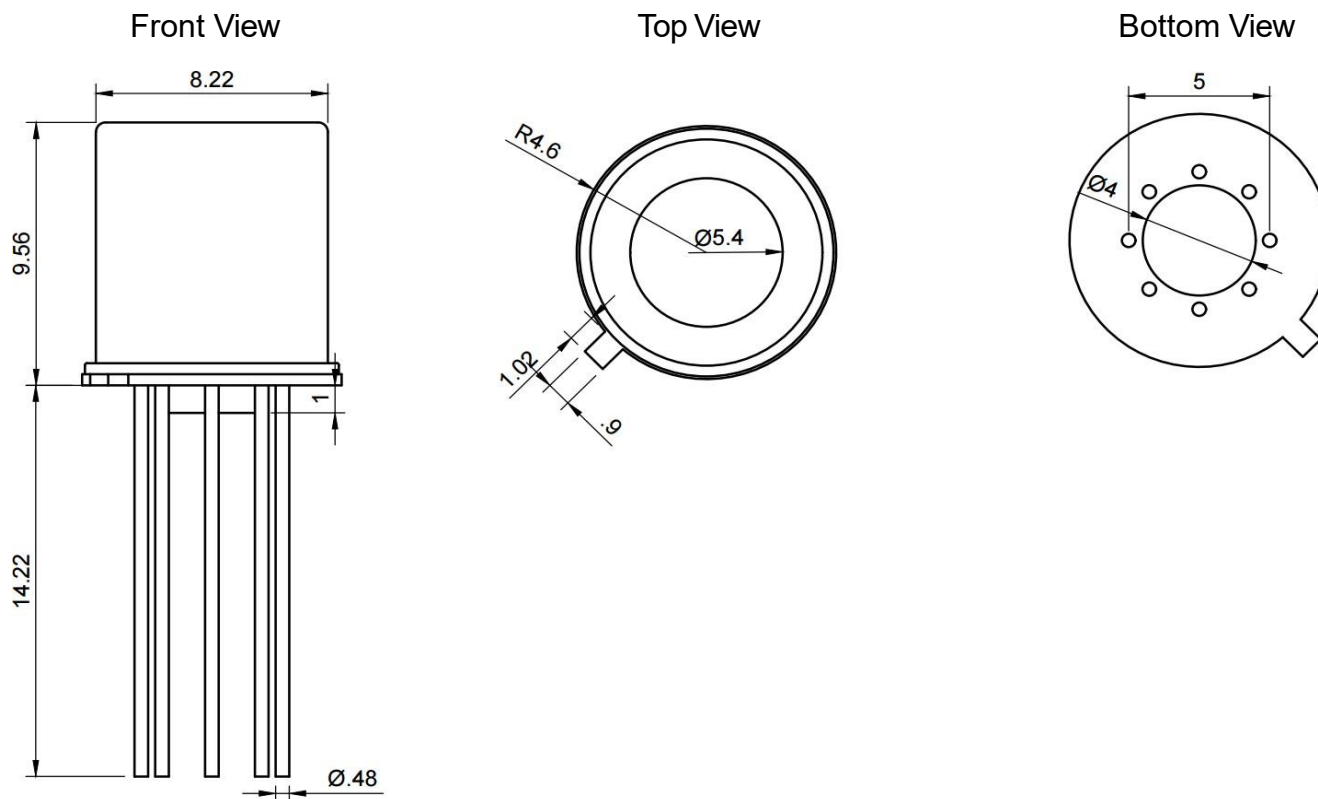
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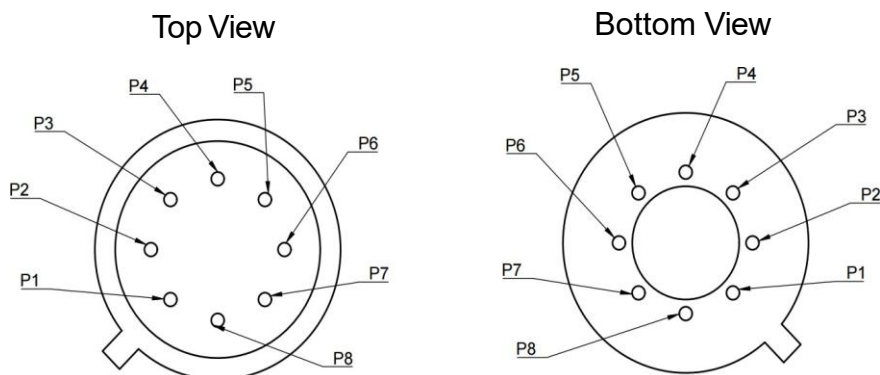
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Mechanical Dimensions (mm) TO-5 Package



*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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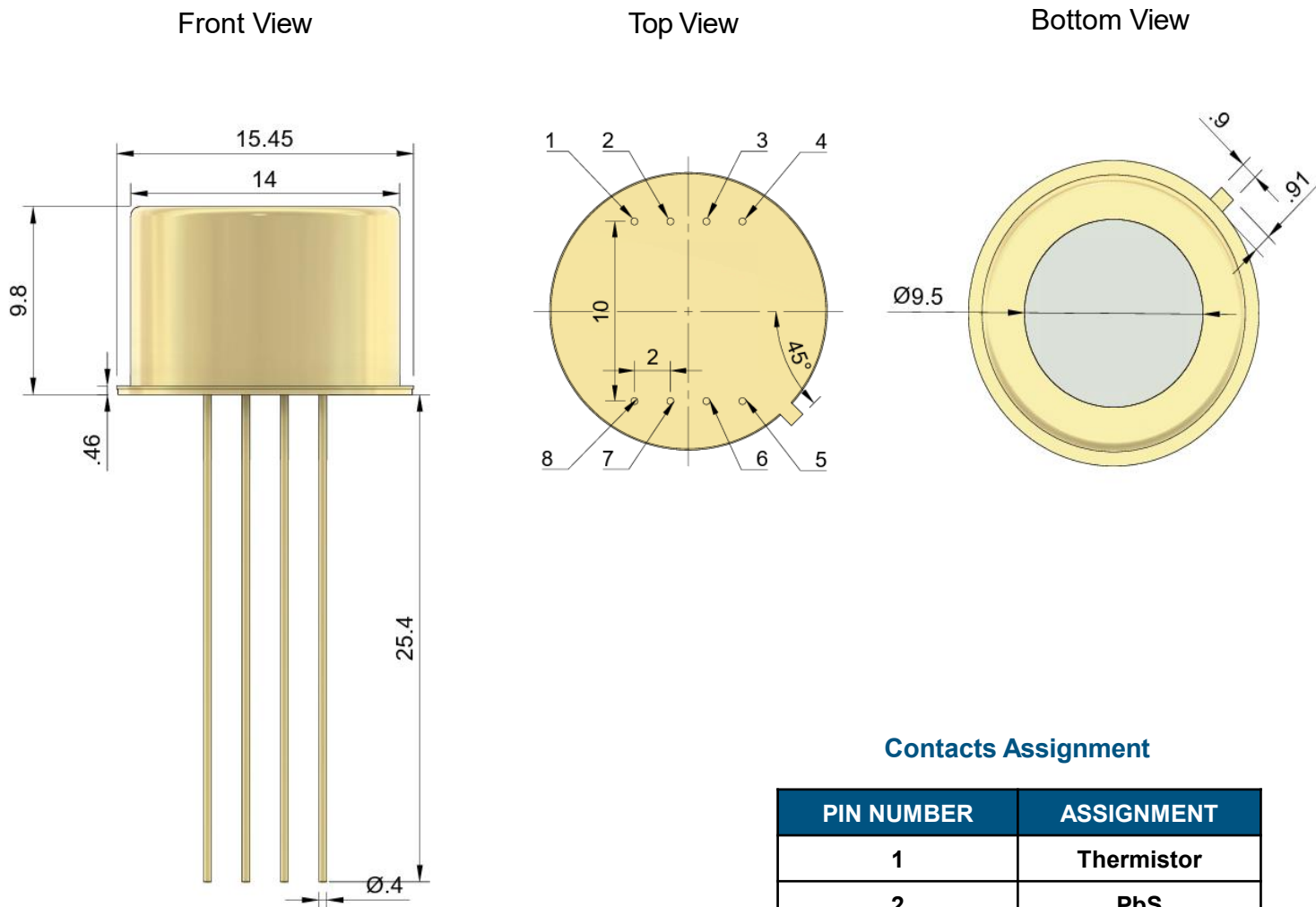
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Mechanical Dimensions (mm) TO-8 Package



Contacts Assignment

PIN NUMBER	ASSIGNMENT
1	Thermistor
2	PbS
3	PbS
4	Thermistor
5	TEC (-)
6	MEMS Shutter
7	MEMS Shutter
8	TEC (+)

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Ordering Information (Part Number)

	3	☐	☐	1	☐	☐	☐
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