

Cooled Photodiode Extended InGaAs

1.2 – 2.6 μm



DATASHEET

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Features

- 1.2 – 2.6 μm
- Low Noise
- High Sensitivity
- Hermetic Sealed Detector
- MEMS Chopper Integration Option

Applications

- OEM
- Lab user
- Instruments

The CPOD series cooled extended InGaAs photodiode provides ultra-low noise for detecting near-infrared light in the 1.2-2.6 μm range. These detectors are hermetically sealed to ensure longevity. Within the detector package, a thermoelectric cooler is integrated with options of 1, 2, and 3 stages, as well as integration with a MEMS chopper, significantly reducing background noise while maintaining a compact format. Additionally, a driving PCB with an amplifier is available for convenient use.

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
Central Wavelength	1200		2550	nm
Sensor Active Diameter	0.3	1	2	mm
Responsivity (@2300nm)	>0.9	>0.9	>0.9	A/W
Dark Current (@0.5V)	-10 °C	<4	<8	nA
	-20 °C	<0.5	<4	
	-40 °C	<0.3	<2	
NEP (@1550nm)	-10 °C	<1	>5	$10^{-12}\text{W}/\text{VHz}$
	-20 °C	<0.4	>1	
	-40 °C	<0.2	>0.5	
Shunt Resistance (@10mV)	-10 °C	>15	>3	K ohms
	-20 °C	>400	>60	
	-40 °C	>7000	>1100	
Cut Off Frequency (@1V)	50	15	5	MHz
Capacitance (@0V)	60	200	800	pF
Reverse Voltage	5	5	5	V
Operating Temperature	-40		75	°C
Storage Temperature	-50		85	°C
TEC Cooler Power	-10 °C	<2.2V@1A	<2.5V@1.1A	W
	-20 °C	<0.8V@1.1A	<0.9V@1.3A	
	-40 °C	<2V@2A	<2.2V@2.3A	

Note: The specifications provided are for general applications with a cost-effective approach. If you need to narrow or expand the tolerance, coverage, limit, or qualifications, please [click this link](#):

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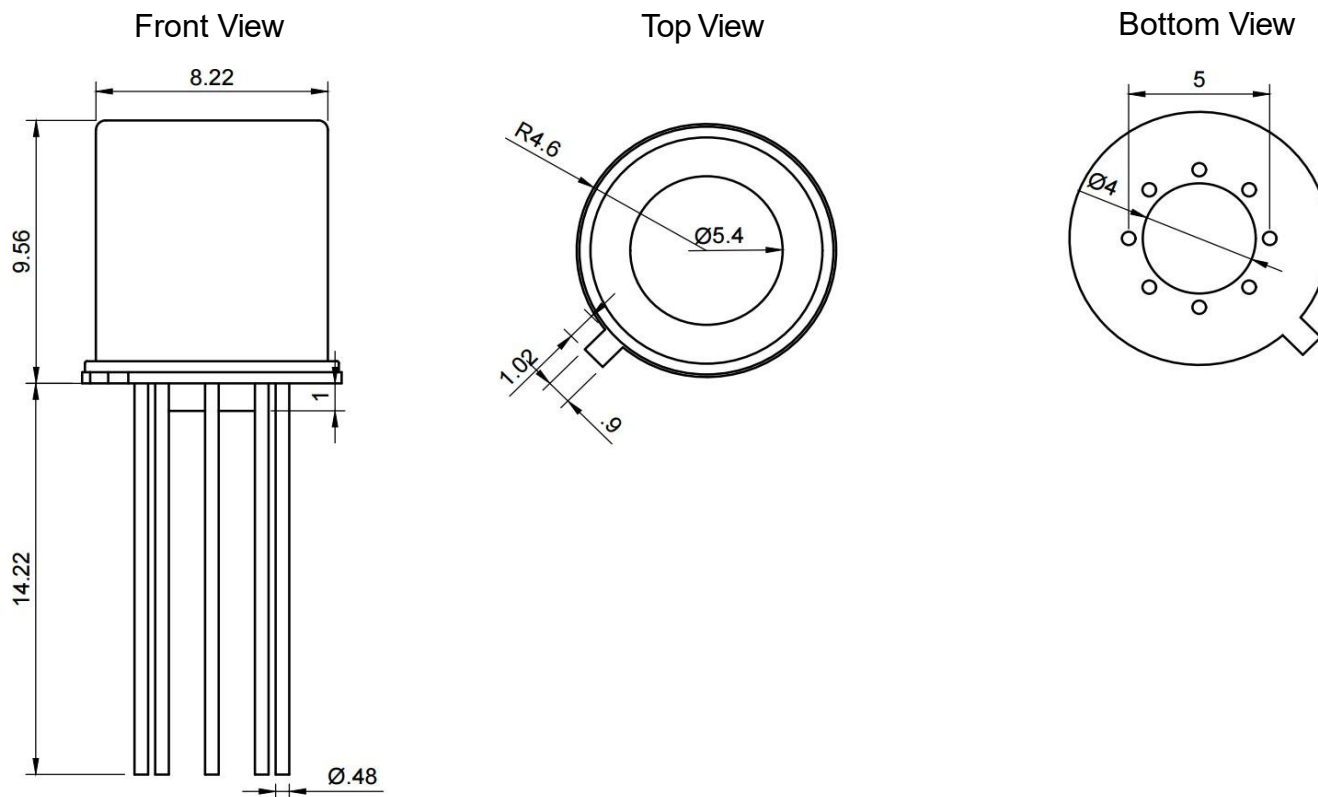
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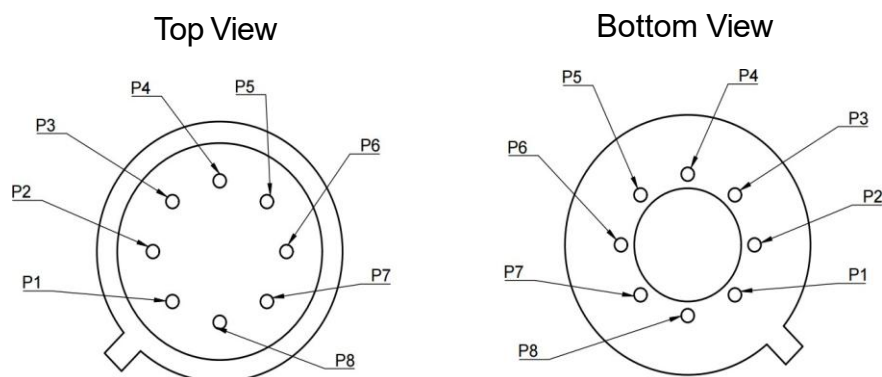
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Mechanical Dimensions For Single and Dual Stage TEC Cooling (mm)



*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	Diode Cathode (-)
P8	Diode Anode (+)

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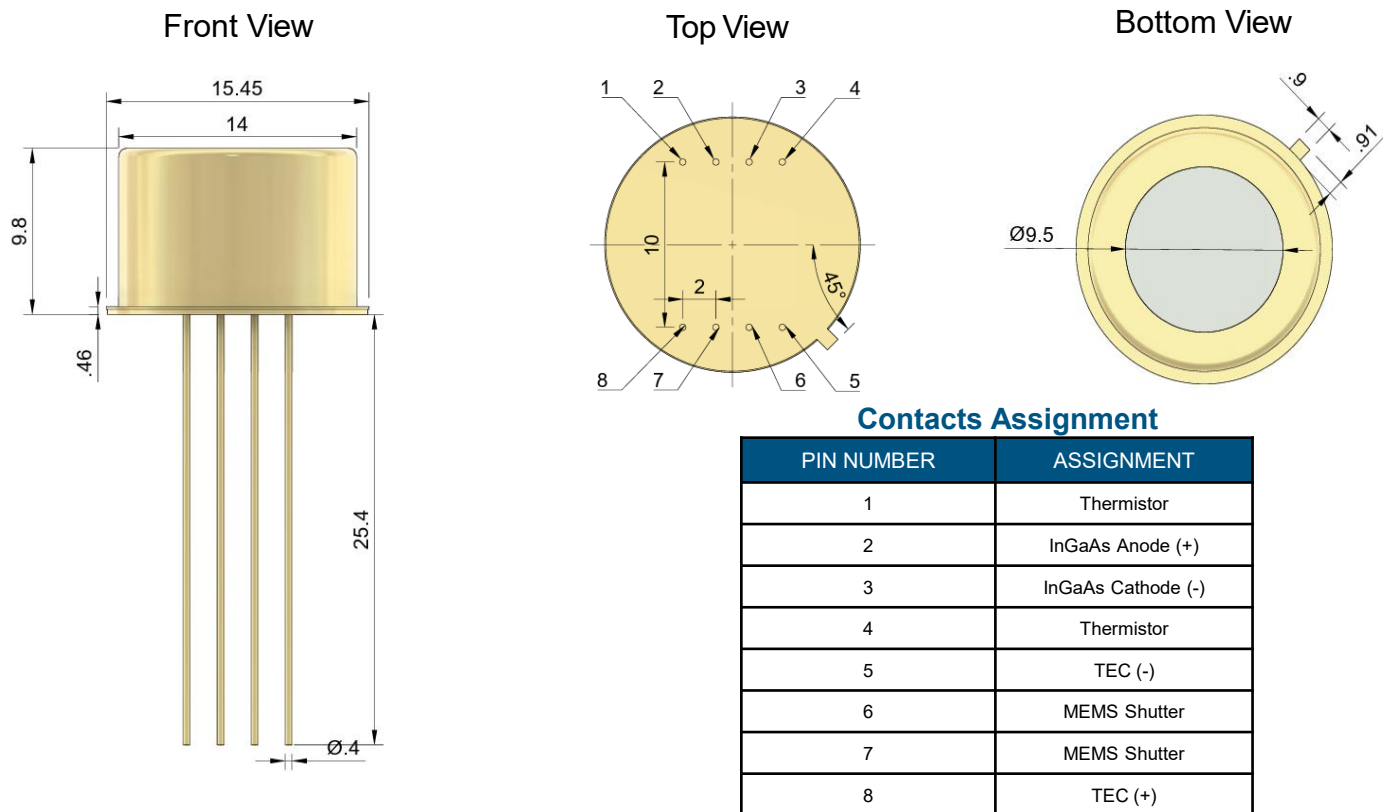
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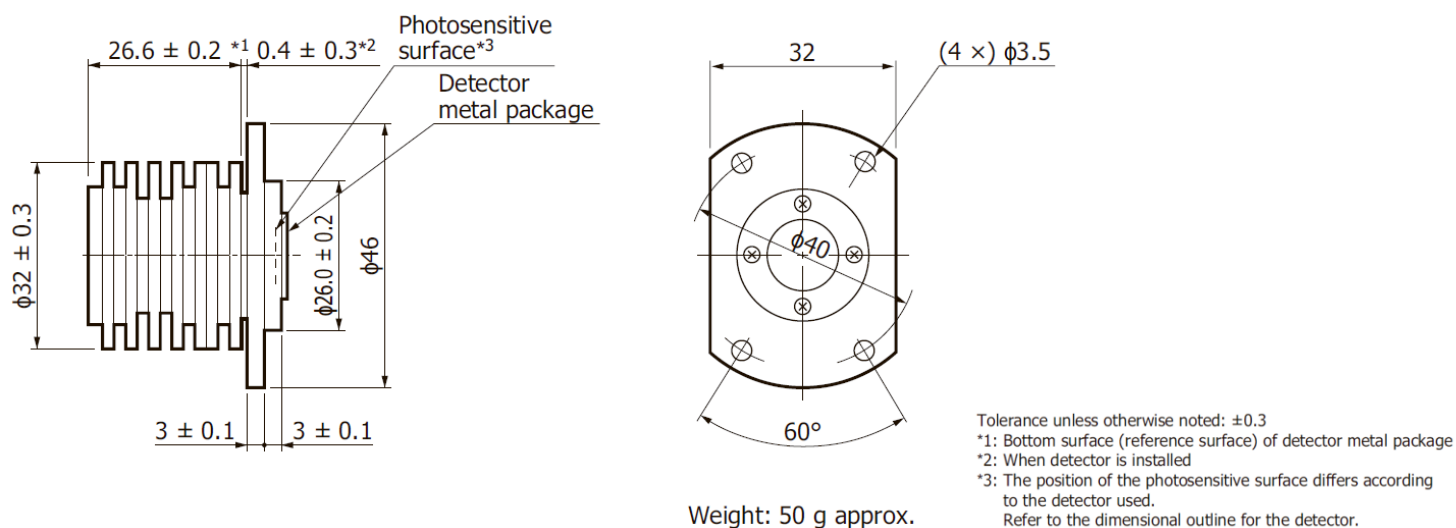


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Mechanical Dimensions For Dual Stage and 3-Stage TEC Cooling (mm)



Heatsink For TEC-Cooled Detector (mm)



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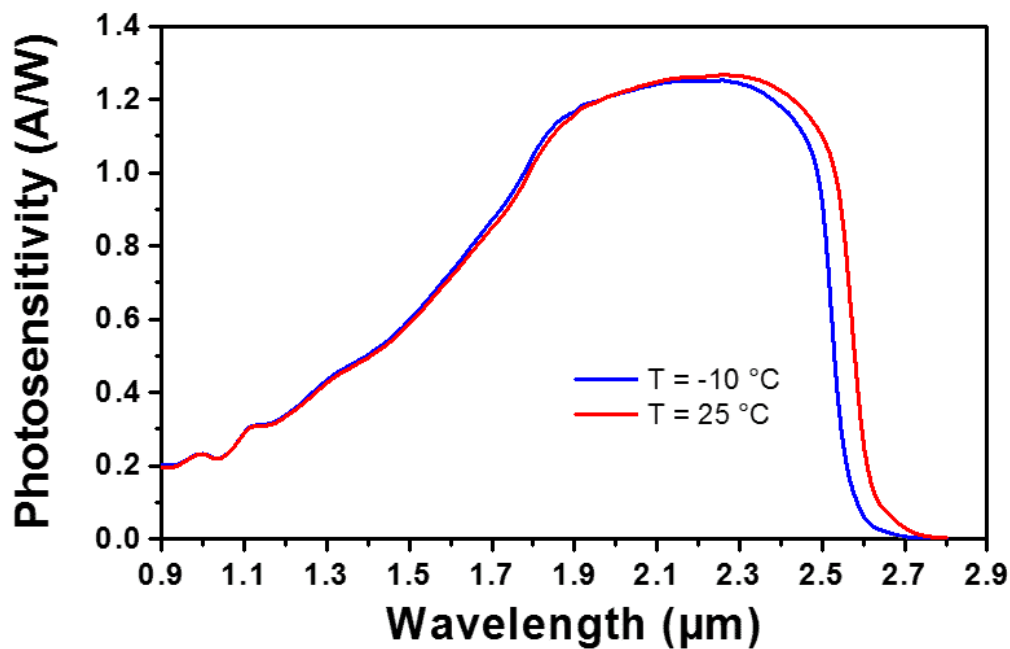
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Wavelength Sensitivity



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Ordering Information (Part Number)

	2	☐	☐	☐	☐	☐	☐
Prefix	Material Type	TEC Type	Integrated Chopper	Detector Size	Window	AR Coated	Driver
CPOD-	Extended InGaAs = 2	1 stage -10°C = 1 2 stage -20°C = 2 3 stage -40°C = 3	Non = 1 Yes = 2	0.3mm = A 1mm = 1 2mm = 2 3mm = 3 5mm = 5	Quartz = 1 Spectral Filter = S Sapphire = 2	No = 0 Yes = 1	No = 00 Yes = 11

Application Notes

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