

Cooled Photodiode InGaAs 0.85 – 1.7 μm

(TEC Cooling, Build-in MEMS Chopper)



DATASHEET

BUY NOW



The CPOD serials cooled InGaAs photodiode provides ultra-low noise for detecting near-infrared light in the 0.85-1.7 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.

Features

- 0.9 – 1.7 μm
- Low Noise
- High Sensitivity
- Hermetic Sealed Detector
- MEMS Chopper Integration Option

Applications

- OEM
- Lab user
- Instruments

Specifications

Parameter	Min	Typical	Max	Unit	
Central Wavelength	900		1600	nm	
Sensor Active Diameter	1	3	5	mm	
Responsivity (@1550nm)	>0.9	>0.9	>0.9	A/W	
Dark Current (@1V)	-10 °C	<0.35	<1.5	<12	nA
	-20 °C	<0.15	<0.7	<6	
	-40 °C	<0.07	<0.32	<2.6	
NEP (@1550nm)	-10 °C	<5	<20	>30	10 ⁻¹⁵ W/√Hz
	-20 °C	<3	<10	>20	
	-40 °C	<1	<5	>10	
Shunt Resistance	-10 °C	>1500	>100	>30	M ohms
	-20 °C	>3000	>200	>60	
	-40 °C	>3500	>350	>110	
Cut Off Frequency (@1V)	18	2	0.6	MHz	
Capacitance (@1V)	150	1000	3500	pF	
Reverse Voltage	5	5	5	V	
Operating Temperature	-40		75	°C	
Storage Temperature	-50		85	°C	
TEC Cooler Power	-10 °C	<1V@2A	<1V@2A	<2V@1.3A	W
	-20 °C	<0.8V@1.3A	<0.8V@1.3A	<0.8V@1.4A	
	-40 °C	<0.8V@2.3A	<0.8V@2.3A	<0.8V@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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Rev 06/18/24

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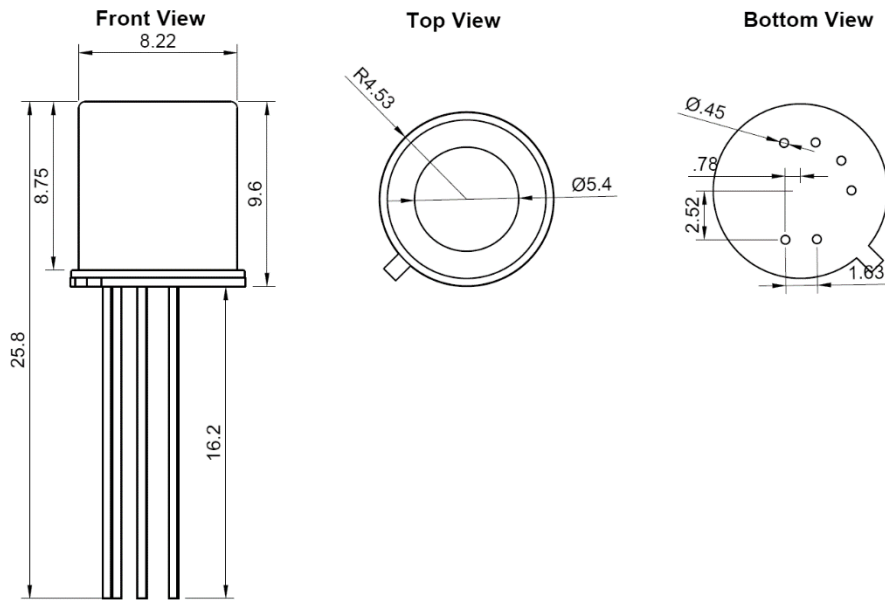
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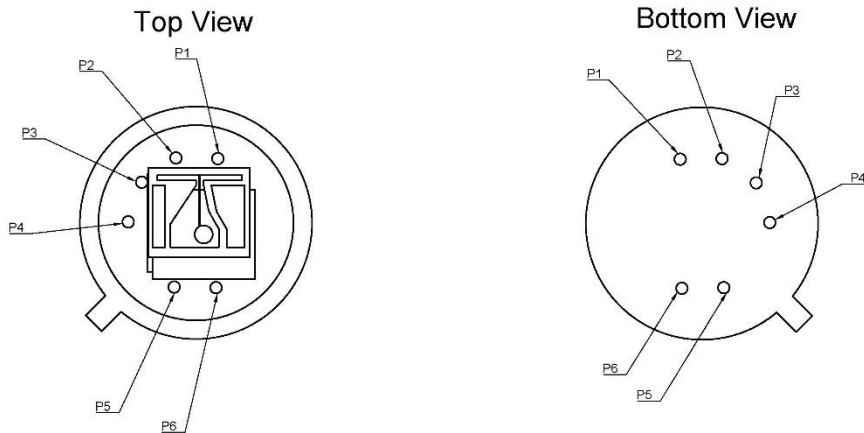
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Mechanical Dimensions For Single and Dual Stage TEC Cooling (mm)



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

Contacts Assignment



PIN NUMBER	ASSIGNMENT
P1	Shutter ; Thermistor
P2	Shutter ; Thermistor
P3	TEC (-)
P4	TEC (+)
P5	Anode
P6	Cathode

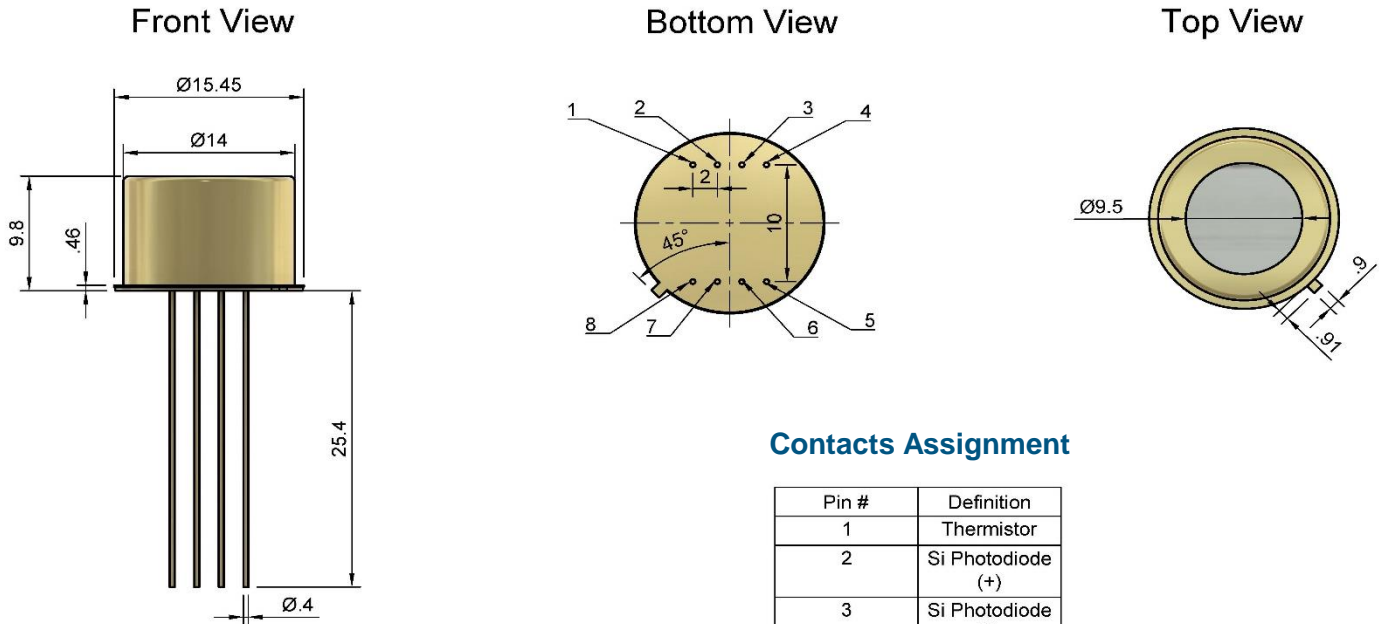
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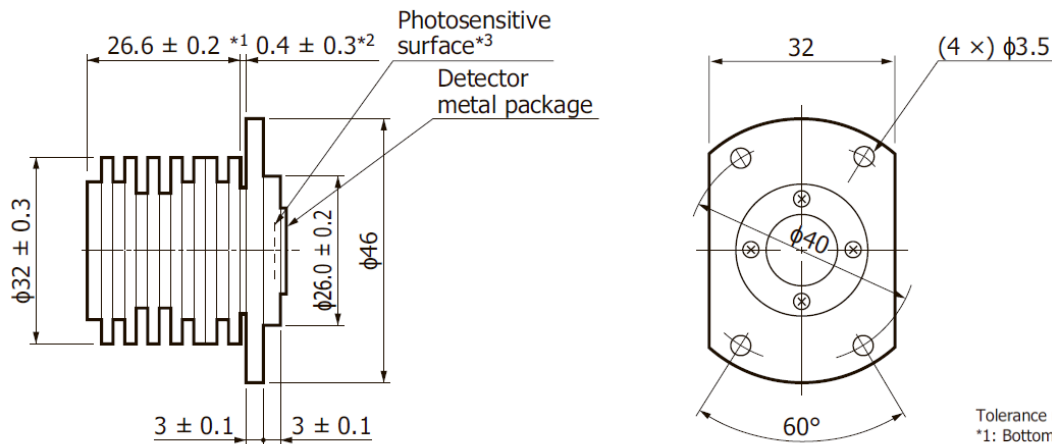
Mechanical Dimensions For Single and Dual Stage TEC Cooling (mm)



Contacts Assignment

Pin #	Definition
1	Thermistor
2	Si Photodiode (+)
3	Si Photodiode (-)
4	Thermistor
5	TEC (-)
6	MEMS Shutter
7	MEMS Shutter
8	TEC (+)

Heatsink For TEC-Cooled Detector (mm)



Weight: 50 g approx.

Tolerance unless otherwise noted: ± 0.3
 *1: Bottom surface (reference surface) of detector metal package
 *2: When detector is installed
 *3: The position of the photosensitive surface differs according to the detector used. Refer to the dimensional outline for the detector.

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Ordering Information

	1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Prefix	Material Type	TEC Type	Integrated Chopper	Detector Size	Window	AR Coated	Driver
CPOD-	InGaAS = 1	1 stage -10°C = 1 2 stage -20°C = 2 3 stage -40°C = 3	Non = 1 Yes = 2	1mm = 1 3mm = 3 5mm = 5	Quartz = 1 Spectral Filter = S Sapphire = 2	No = 0 Yes = 1	No = 00 Yes = 11

Application Notes