Cooled Photodiode Extended InGaAs
1.2 – 2.6 µm

DATASHEET

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The CPOD serials 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.

Features

- 1.2 – 2.6 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		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	<40	nA
	-20 °C	<0.5	<4	<30	
	-40 °C	<0.3	<2	<20	
NEP (@1550nm)	-10 °C	<1	<2	>5	10^{-12}W/√Hz
	-20 °C	<0.4	<0.7	>1	
	-40 °C	<0.2	<0.4	>0.5	
Shunt Resistance (@10mV)	-10 °C	>15	>3	>1	K ohms
	-20 °C	>400	>60	>20	
	-40 °C	>7000	>1100	>350	
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	<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]:

Rev 04/23/25

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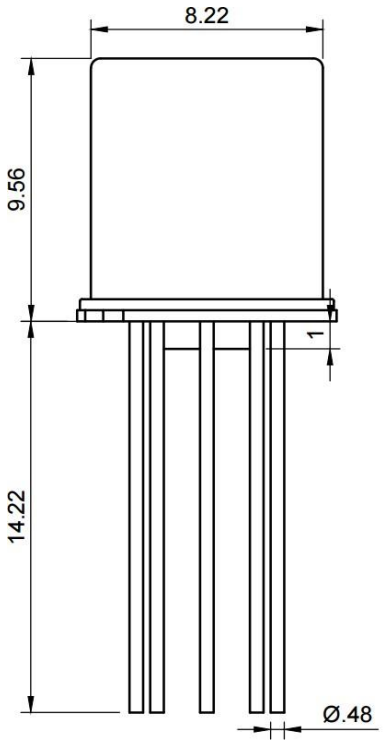
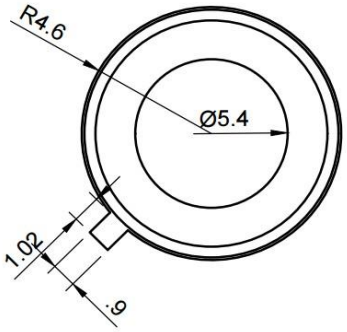
Mechanical Dimensions For Single and Dual Stage TEC Cooling (mm)

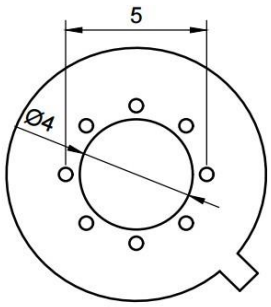
Front View



Top View



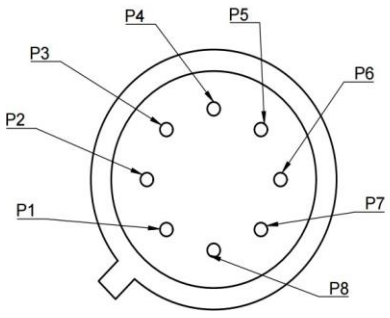
Bottom View



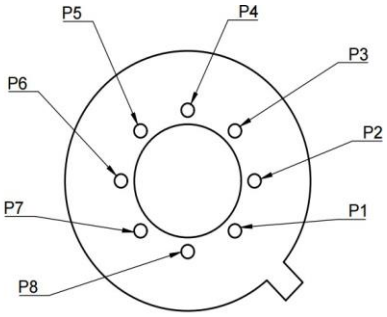
*Product dimensions may change without notice. This is sometimes required for non-standard specifications.

Contacts Assignment

Top View



Bottom View



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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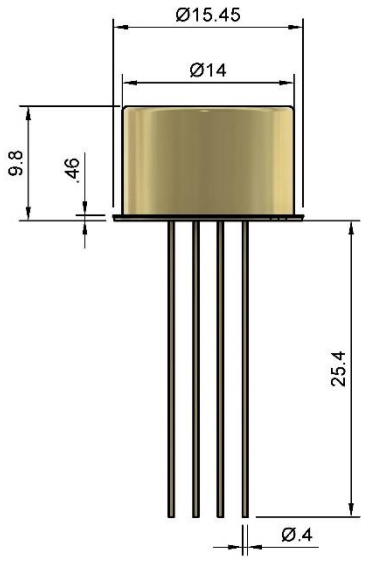
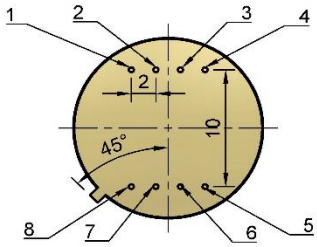
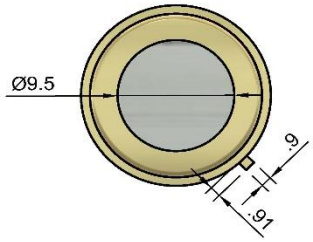
Front View



Bottom View



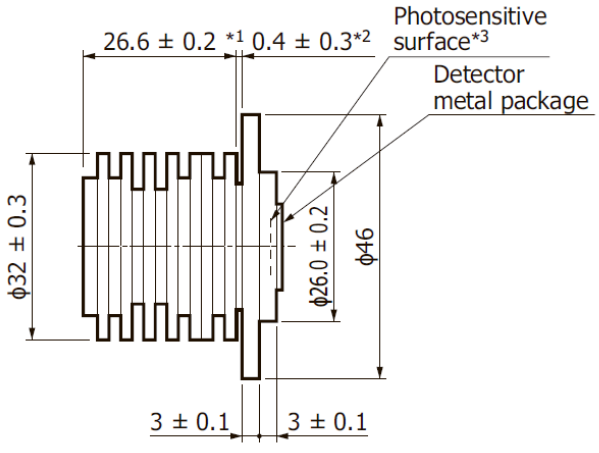
Top View

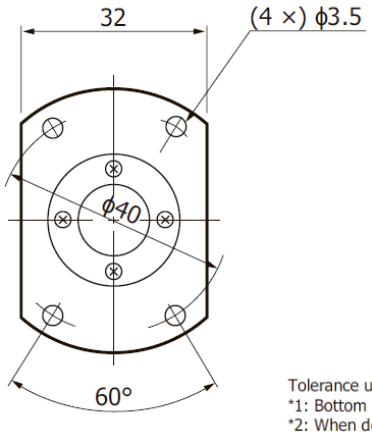


Contacts Assignment

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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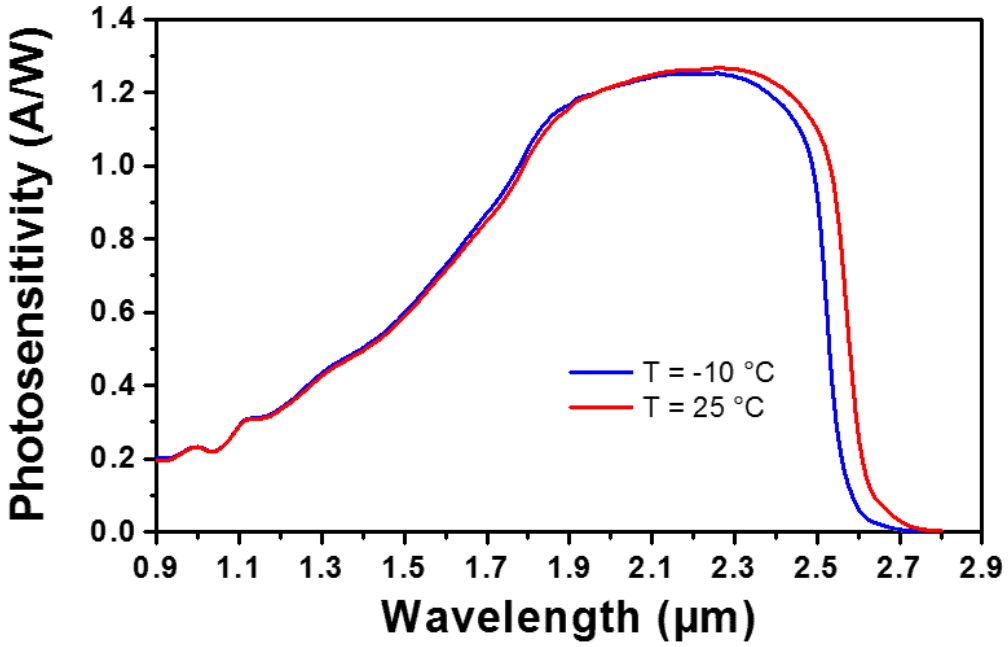
Wavelength Sensitivity



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Ordering Information

	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	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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