Cooled Photodiode Si PIN

0.4 – 1.1 µm

DATASHEET

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The CPOD serials cooled Silicon photodiode provides ultra-low noise for detecting from UV to near-infrared light in the 0.4-1.1 µm range. These detectors are hermetically sealed to ensure longevity. Within the detector package, a thermoelectric cooler is integrated with a 3-stage deep cooling as well as integration with a MEMS chopper, significantly reducing background noise while maintaining a compact format. A thermistor is also included in the package to sense the Si photodiode chip temperature for stable operation. It is designed for low-light-level detection applications. Additionally, we offer driving PCB consists a precision TEC temperature controller, an amplifier, and a detector heat sink 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.

Features

- 0.4 – 1.1 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	300	960	1100	nm
Sensor Active Diameter	1x1	1.7x2.8, 5x5	5x5	mm
Responsivity (@960nm)	0.6	0.65		A/W
Dark Current (@0.1V, -40 °C)	<10		<25	nA
Noise Equivalent Power (@960nm,0V)	<8		<13	10^{-15}W/√Hz
Shunt Resistance (@-10mV)	>5	>5	>10	Mohms
Cut Off Frequency (@1V)	80		20	MHz
Capacitance (@0V)		370 (1.7x2.8)	2100 (5x5)	pF
Reverse Voltage	0	-5		V
Operating Temperature	-40		75	°C
Storage Temperature	-50		85	°C
TEC Cooler Power		<2.1V@2A		W

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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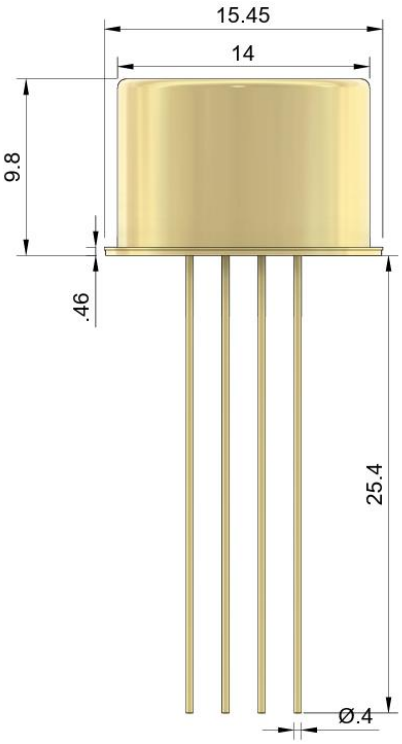
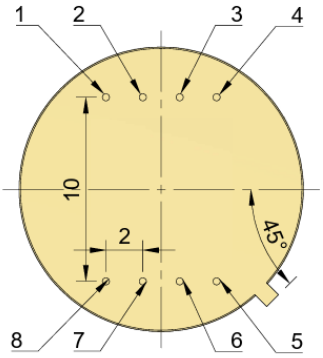
Mechanical Dimensions 3-Stage TEC Cooling (mm)

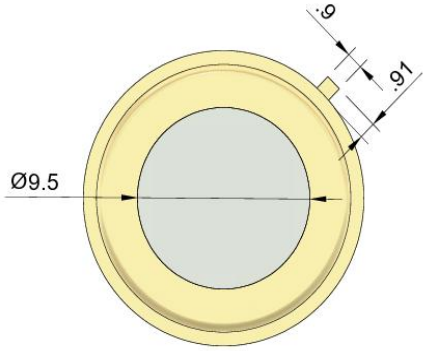
Front View



Bottom View



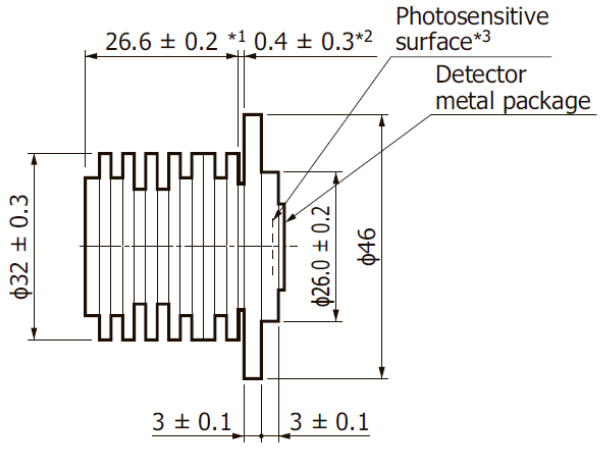
Top View

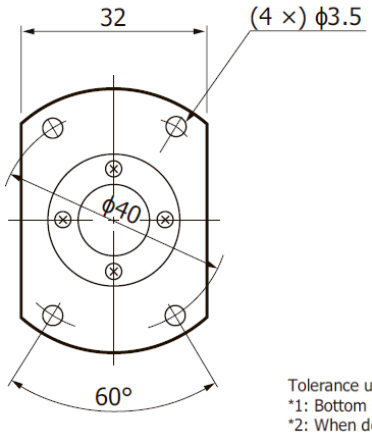


Contacts Assignment

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.

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

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Ordering Information (Part Number)

	7	☐	☐	☐	☐	☐	☐☐
Prefix	**Material Type**	**TEC Type**	**Integrated Chopper**	**Detector Size**	**Window**	**AR Coated**	**Driver**
CPOD-	Silicon PIN = 7	1 stage -10°C = 1 2 stage -20°C = 2 3 stage -40°C = 3	Non = 1 Yes = 2	1mm = 1 1.7mm x 2.8mm = 2 5mm = 5	Sapphire = 2 Spectral Filter = S Quartz = 1	No = 0 Yes = 1	No = 00 Yes = 11

Application Notes

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