

# Cooled Photodiode Si

## 0.4 – 1.1 $\mu\text{m}$



DATASHEET

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### Features

- 0.4 – 1.1  $\mu\text{m}$
- Low Noise
- High Sensitivity
- Hermetic Sealed Detector
- MEMS Chopper Integration Option

### Applications

- OEM
- Lab user
- Instruments

The CPOD series cooled Silicon photodiode provides ultra-low noise for detecting from UV to near-infrared light in the 0.4-1.1  $\mu\text{m}$  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.

### Specifications

Parameter	Min	Typical	Max	Unit
Central Wavelength	300	960	1100	nm
Sensor Active Diameter	2x2		5x5	mm
Responsivity (@960nm)	0.4			A/W
Dark Current (@0.1V, -40 °C)	<10		<25	nA
Noise Equivalent Power (@960nm,0V)	<8		<13	$10^{-15}\text{W}/\text{VHz}$
Shunt Resistance (@10mV)	>1	>3	>0.4	G ohms
Cut Off Frequency (@1V)	80		20	MHz
Capacitance (@0V)	65		380	pF
Reverse Voltage	5		5	V
Operating Temperature	-40		75	°C
Storage Temperature	-50		85	°C
TEC Cooler Power	<0.8V@2.3A	<0.8V@2.3A	<0.8V@2.3A	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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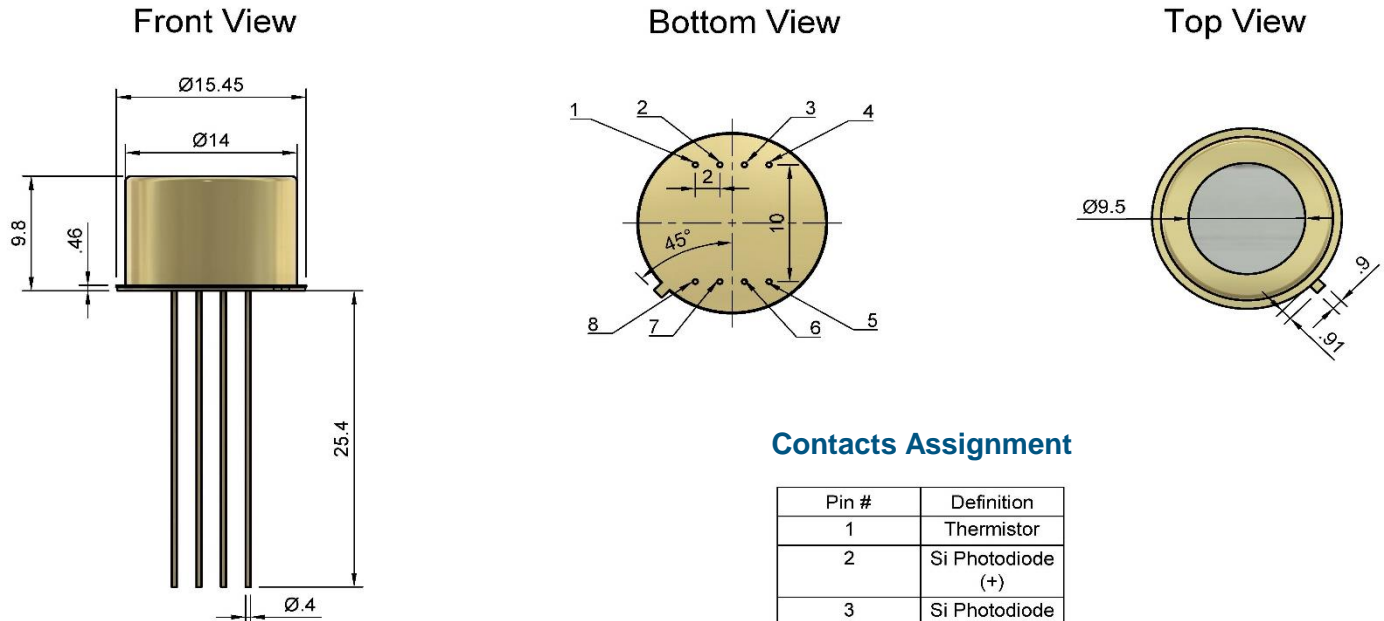
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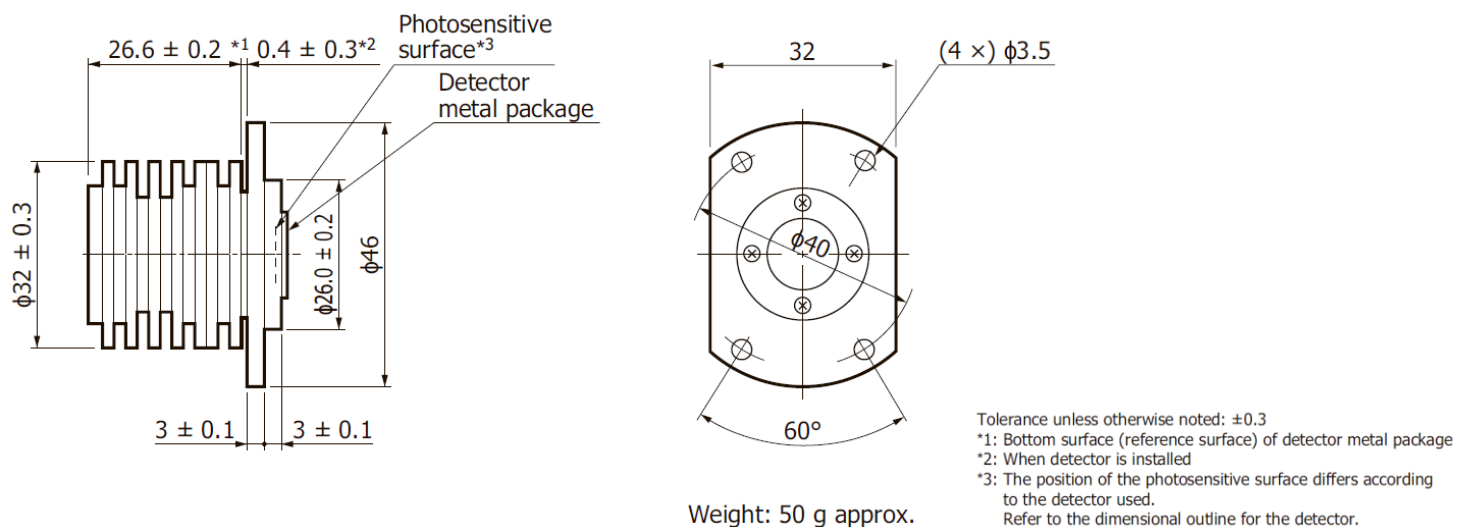
### Mechanical Dimensions 3-Stage TEC Cooling (mm)



### 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)



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

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### Ordering Information

	7	<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-	Silicon PIN = 7	1 stage -10°C = 1 2 stage -20°C = 2 3 stage -40°C = 3	Non = 1 Yes = 2	1mm = 1 5mm = 5	Sapphire = 2 Spectral Filter = S Quartz = 1	No = 0 Yes = 1	No = 00 Yes = 11

### Application Notes