

Cooled Photodiode Si APD

0.4 – 1.1 μm



DATASHEET

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The CSAD series cooled Silicon APD photodiode provides high sensitivity with gain 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.

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	400	960	1100	nm
Sensor Active Diameter	0.25		0.3	mm
Responsivity (@960nm, 1 μW , 100gain)	50	55		A/W
Dark Current (@0.1V, -40 $^{\circ}\text{C}$)	0.2		0.5	nA
Gain		100		
Breakdown Voltage	160		200	V
Cut Off Frequency (@1V)	80		20	MHz
Capacitance (@0V, 100gain)		0.5		pF
Temperature Coefficient		1.1		V/ $^{\circ}\text{C}$
Operating Temperature	-40		75	$^{\circ}\text{C}$
Storage Temperature	-50		85	$^{\circ}\text{C}$
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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Rev 11/03/25

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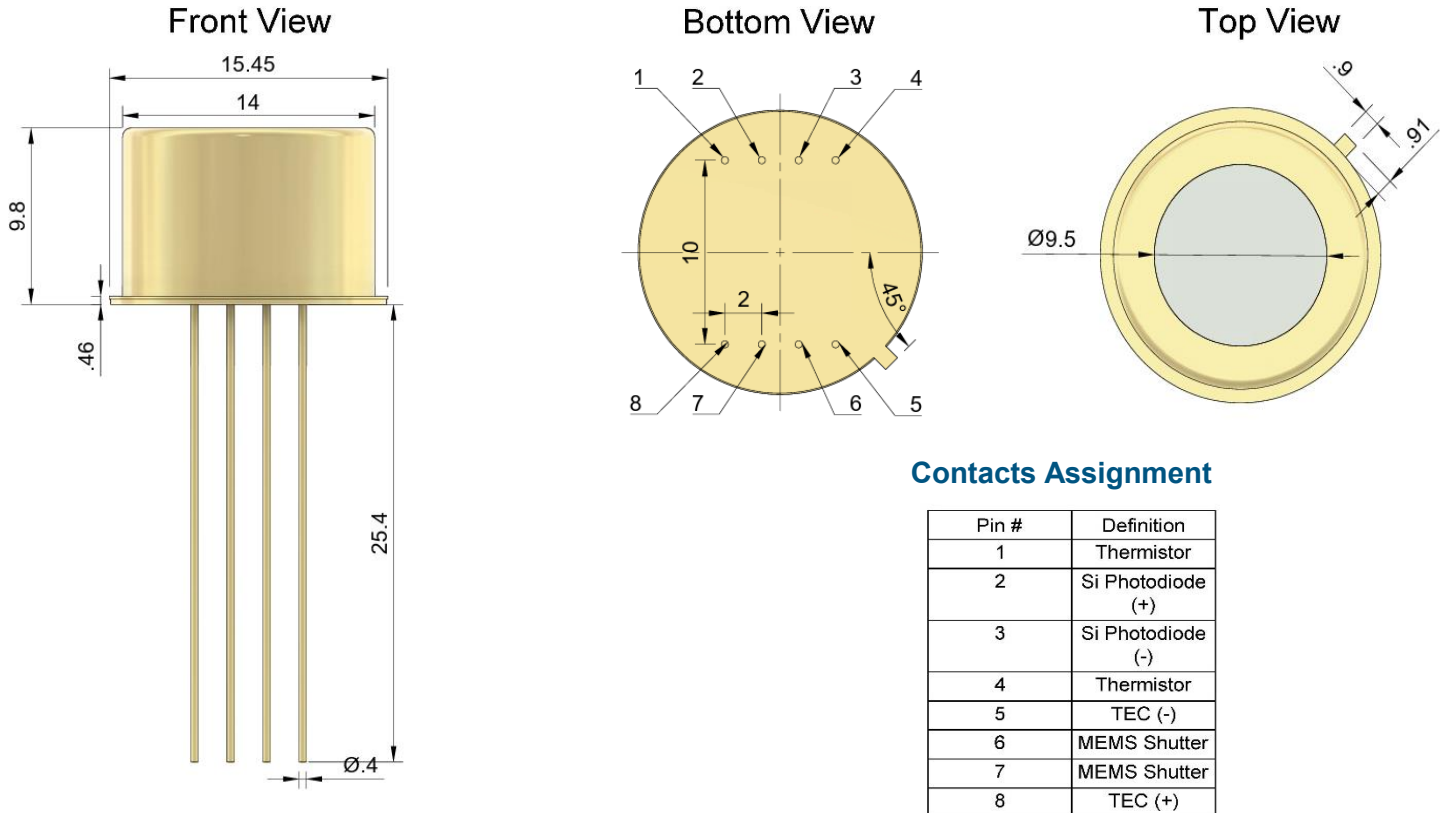
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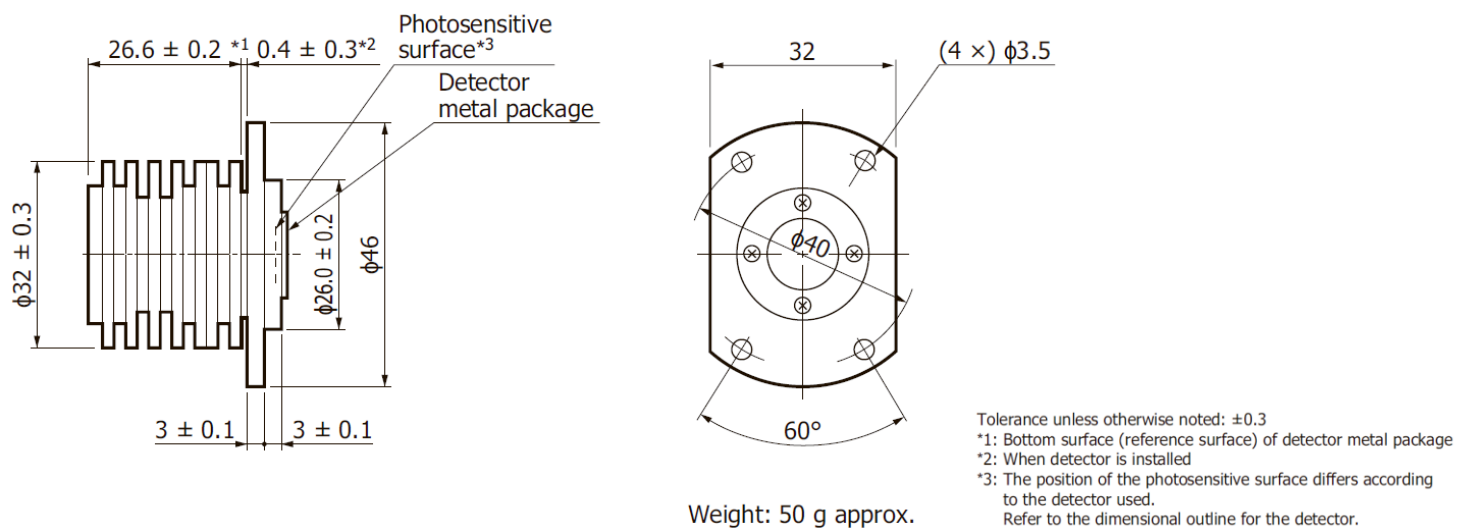


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Mechanical Dimensions 3-Stage TEC Cooling (mm)



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

	8	☐	☐	☐	☐	☐	☐
Prefix	Material Type	TEC Type	Integrated Chopper	Detector Size	Window	AR Coated	Driver
CSAD-	Silicon APD = 8	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