

InGaAs Photodetector

VenusLab Large-Area APD

Large-Area APD Low-Light Module

- 200 μ m large target area, strong low-light capture
- Strong light protection, chip safety
- 70MHz bandwidth, low noise and high signal-to-noise ratio
- 1550nm compatible, 1100 – 1700nm response
- TO8 hermetic seal, wide temperature stability



One Platform Many Possibilities

Contact Us sales@venuslabtech.com

Get a Quote



Get Expert Advice
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www.venuslabtech.com

Overview

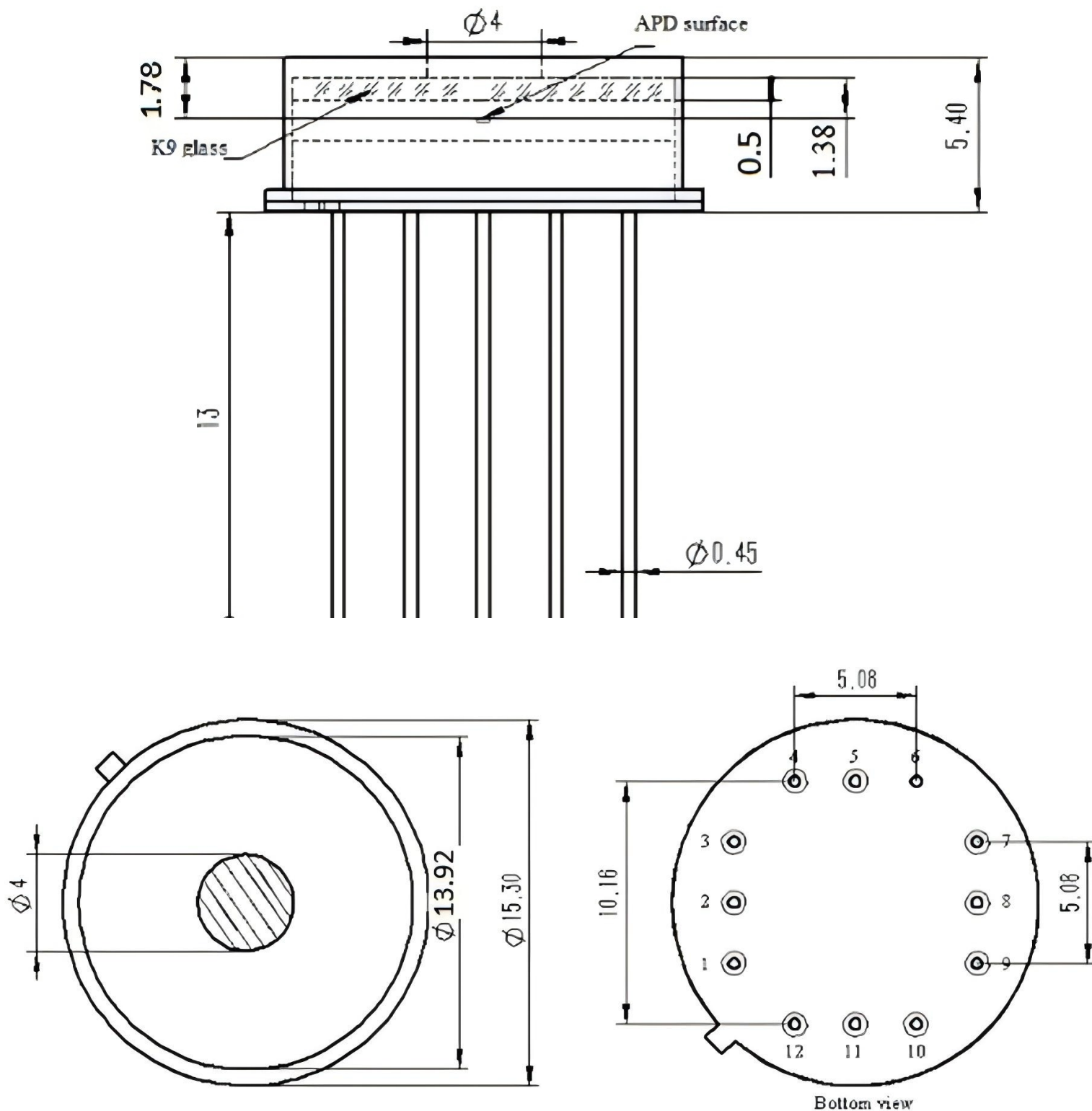
Wider field of view, more stable light sensing

This component adopts a large-size 200 μ m InGaAs APD chip, integrating an avalanche gain amplifier circuit and a strong light protection system. While providing a stable bandwidth of 70MHz, it possesses extremely high signal detection sensitivity and anti-interference capability, making it a core tool for weak infrared photoelectric conversion.

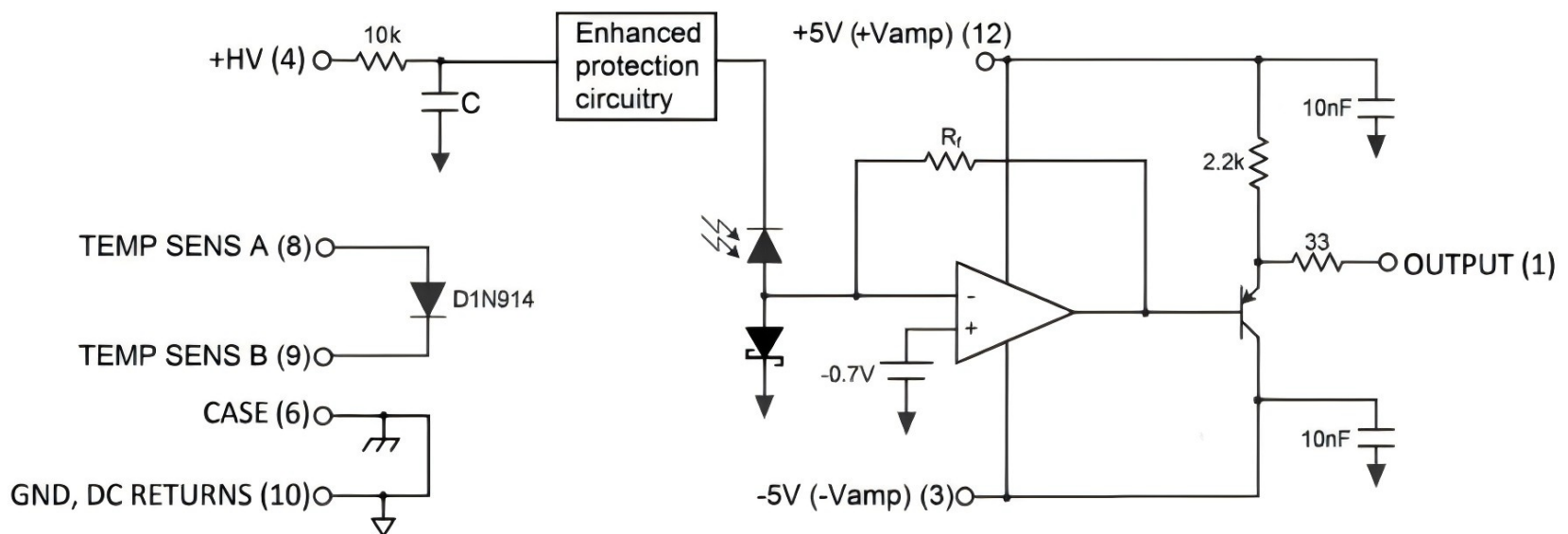
Applications

- LiDAR: Accurate detection of echo waves from long-distance targets.
- Spatial Communication: High-fidelity reception of free-space optical signals.
- Laser Ranging: Detection of weak reflection pulses in complex environments.
- Fiber Optic Sensing: Extraction of weak light signals in long-distance sensing systems.

Dimension:



Module Structure Block Diagram



Absolute Maximum Ratings

Technical Specifications for APD Module

Parameter	Unit	Symbol	Value
APD Bias Voltage	V	VR	VBR-3
Operating Temperature	°C	TC	-40 to +85
Storage Temperature	°C	TSTG	-55 to +100
Max. Input Optical Power	mW	Pin	100
Module Operating Voltage	V	VCC/VEE	±5
Module Power Consumption	mW	PW	250
Soldering Temp (Time)	°C	-	300 (10s)

Specifications

Optoelectronic performance (T=25 °C, ±5V supply, AC resistance Ri=50 Ω)

Characteristic Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Spectral Response Range		1100 ~ 1700			nm	
Photosensitive Diameter	D	200			μm	
Reverse Breakdown Voltage	VBR	30		70	V	
Operating Voltage	VR	VBR-3			V	M=10
Responsivity	Rv	360			kV/W	M=10, 1.55μm @ λ=4.5ns
Dynamic Range	DY	25			dB	M=10, 1.55μm @ λ=4.5ns
-3dB Bandwidth	BW		70		MHz	M=10, 1.55μm @ λ=10ns
Rise/Fall Time	tr		5		ns	M=10, 1.55μm @ λ=10ns
Equivalent Noise (NEP)	NEP		150		fW/Hz	M=10, f=100kHz to f3dB, λ=1Hz
Output Impedance	RO		50			
Max. Output Swing	VO	0.7			V	
Positive Supply Current	ICC			30	mA	
Negative Supply Current	IEE		10		mA	50 Ω Load
Bias Voltage Temp. Coeff.			0.12		V/°C	-45 ~ 85°C
Concentricity	D			30	μm	

Service & Support

We are dedicated to delivering exceptional optoelectronic solutions to every client. From precision manufacturing and secure delivery to full-lifecycle technical support, we are here to ensure a seamless and reliable experience at every step.

1. Warranty Policy

Quality First, Worry-Free Operation

Warranty Period: We offer a **two-year** warranty service for all of our core optoelectronic products, effective from the date of shipment.

Coverage: We provide free repair or replacement services for malfunctions caused by material defects or workmanship errors under normal operating conditions.

Rapid Response: Upon receiving a warranty claim, we guarantee to initiate the assessment process within **24 hours** to minimize your equipment downtime.

2. Technical Support

Expert Team, Full-Process Guidance

Technical Consultation: Our team of senior optical engineers provides **24/7 online support** to assist with installation, commissioning, optical path alignment, and parameter optimization.

Scheduled Maintenance: We offer full-lifecycle maintenance recommendations, including firmware upgrades, optical component cleaning guidelines, and precision calibration services.

Training Services: We provide customized remote or on-site operational and safety training to ensure your team can operate the equipment efficiently and safely.

3. Logistics & Delivery

Precision Packaging, Global Reach

Professional Packaging: Given the fragile nature of optical instruments, we utilize industrial-grade shockproof, anti-static, and moisture-proof vacuum packaging to ensure zero damage during transit.

Logistics Partners: We partner with top-tier global logistics providers (**DHL / FedEx / UPS / SF Express**) to offer reliable shipping with real-time tracking.

Shipping Insurance: All shipments are fully insured to eliminate logistics risks.

4. Compliance & Certification


Strict Standards, Total Compliance

Quality Certification: Our manufacturing process is **ISO 9001 certified**, and our products comply with international standards such as **CE and RoHS**.

Export Compliance: "Committed to environmental responsibility, all our products comply with **RoHS 2.0 and REACH** standards, ensuring safety and global compliance."

Explore Series

Model	Conversion Gain	Spectral Range	-3dB Bandwidth	Active Area Diameter
VL-APD-200	360 kV/W	1100 ~ 1700 nm	70 MHz	200 μ m

 Get in touch with our team to explore configurations, request a quote, or learn more about customized solutions tailored to your needs.

Let us help you move science forward—faster and smarter.

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