

## 200um InGaAs APD Preamplifier Module

### CR200AH-1550-100M

The CR200AH-1550-100M includes a 200um InGaAs Avalanche Photodiode with a hybrid preamplifier for the use in high speed, ultra-low light detection, in laser range finding, LIDAR and free space communication.

#### ■ Features

- Built in 200um InGaAs+TIA
- High sensitivity:  $\geq 400\text{kV/W}$
- High bandwidth: 100MHz
- Wavelength range: 1100~1700nm
- Low noise and high reliability
- TO8 package with flat window

#### ■ Applications

- LIDAR
- Laser range finding
- Free space optical communication (FSO)

#### ■ Absolute Maximum Ratings

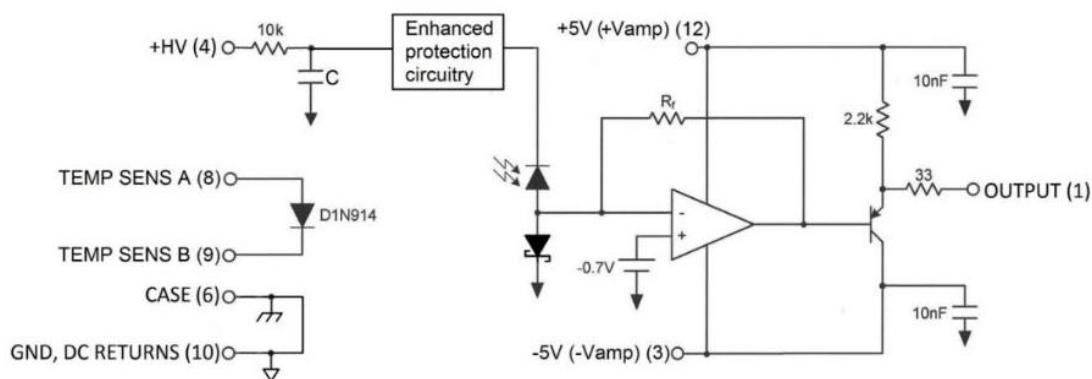
Parameter	Unit	Symbol	Rating
Reverse breakdown voltage	V	V R	VBR-3
Operating temperature	°C	T C	-40~+85
Storage temperature	°C	T STG	-55~+100
Maximum optical input power	mW	P in	100
Module mains voltage	V	Vcc/V EE	$\pm 5$
Power dissipation	mW	Pw	250
Soldering temperature(time)	°C	-	300 (10s)

#### ■ Optical/Electrical Characteristics (T=25°C, unless otherwise stated)

Parameter	Symbol	Value			Unit	Test conditions
		Min	Typ	Max		
Response Spectrum	$\lambda$	1100~1700			nm	
Active Diameter	D		200		um	
Reverse breakdown voltage	VBR	30		70	V	
Operating voltage	VR	VR-3			V	M=10
Responsivity	Rv	400			kV/W	M=10, 1.55um @ $\tau=5\text{ns}$

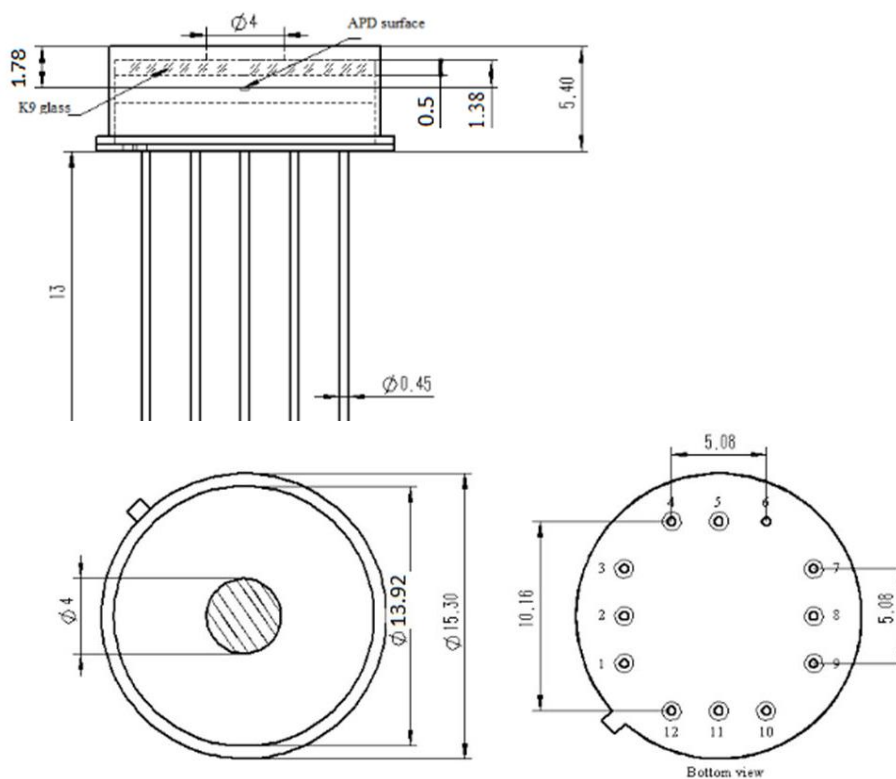
Dynamic range	DY	25			dB	M=10, 1.55um @ $\tau$ =5ns
-3dB bandwidth	BW		100		MHz	M=10, 1.55um @ $\tau$ =100ns
Rise/Fall time	$\tau_r$		3.5		ns	M=10, 1.55um @ $\tau$ =100ns
Noise Equivalent Power	NEP		120		fW/vHz	M=10, f=100kHz, $\Delta$ =1hz
Output impedance	RO		50		$\Omega$	
Output Voltage Swing	VO	0.7			V	
Positive Supply Current	ICC			30	mA	
Negative Supply Current	IEE			10	mA	50 $\Omega$ Load
Temperature coefficient of Vop for constant gain	$\gamma$			0.15	V/ o C	-45 ~ 85 $^{\circ}$ C
Concentricity	$\Delta$ D			20	um	

### ■Schematic Block Diagram



### ■Block Diagram and Pin description

Dimensions are in millimeters. All dimensions are  $\pm 0.1$ mm unless otherwise specified.



Pin description

PIN#	DESC	PIN#	DESC
1	OUTPUT	7	NC
2	NC	8	TEMP SENS A
3	-5V	9	TEMP SENS B
4	HV,APD BIAS	10	GND
5	NC	11	NC
6	CASE	12	+5V

■Order information

**CR200AH-1550-100M**

CR①-②-③		
① High Responsiveness Target Surface	② Spectrum Response	③ Responsive Bandwidth
200AH 0.2mm	1550 1550nm	30M 30MHz
800AH 0.8mm	1064 1064nm	50M 50MHz
1000AH 1.0mm	940 800~940nm	70M 70MHz
3000AH 3.0mm	...	100M 100 MHz
...		...

**Note: The laser module are ESD-sensitive devices. Please insure that proper ESD handling procedures are followed.**