

InGaAs APD (Φ200um)

CTIGA200PA

Features

- Built in 200um InGaAs+TIA
- High sensitivity: $\geq 500\text{kV/W}$
- High bandwidth: 70Mhz
- Wavelength range: 1100~1700nm
- Low noise and high reliability
- TO8 package with flat window

Description

The CTIGA200PA includes a 200um InGaAs Avalanche Photodiode with a hybrid preamplifier for the use in highspeed, ultra-low light detection, in laser range finding, LIDAR and free space communication

Application

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



1. Parameter

Absolute Maximum Ratings

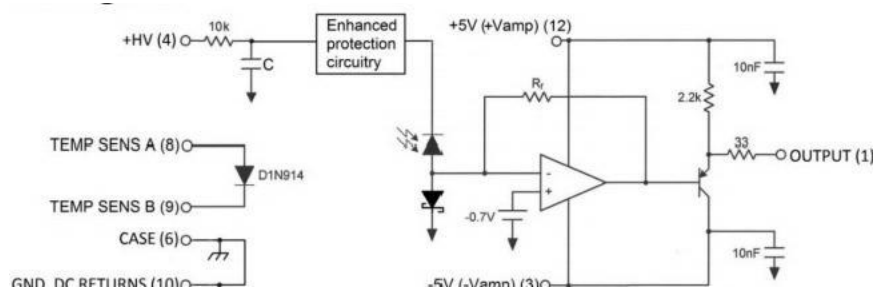
Parameter	Unit	Symbol	Rating
Reverse breakdown voltage	V	V_R	VBR
Operating temperature	°C	T_c	-40~+85
Storage temperature	°C	T_{STG}	-55~+100
Maximum optical input power	mW	P_{in}	100
Module mains voltage	V	V_{CC}/V_{EE}	± 6
Power dissipation	mW	P_w	250
Soldering temperature(time)	°C	-	300(10s)

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

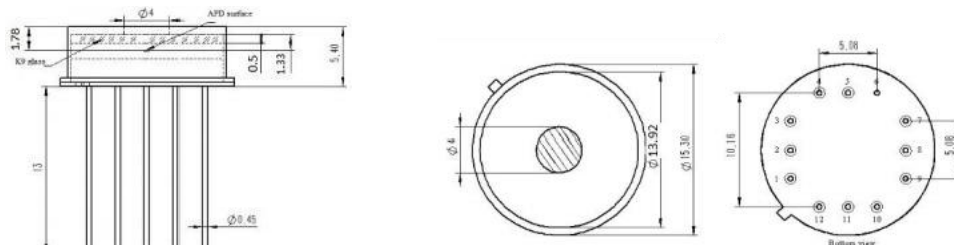
Parameter	Symbol	Value			Unit	Test conditions
		Min	Typ	Max		
Response Spectrum	λ	1100~1700			nm	
Active Diameter	D		200		um	
Reverse breakdown voltage	V_{BR}	30		70	V	
Operating voltage	V_R	VR-3			V	M=10
Responsivity	R_v	500			kV/W	M=10, 1.55um@t=100ns

Dynamic range	DY	25			dB	M=10,1.55um @t=100ns
-3dB bandwidth	BW		70		Mhz	M=10,1.55um @r=100ns
Rise/Fall time	t _r		5		ns	M=10,1.55um @t=100ns
Noise Equivalent Power	NEP		100		fW/VHz	M=10,f=100kHz,△=1hz
Output impedance	R _o		50		Ω	
Output Voltage Swing	V _o	0.7			V	
Positive Supply Current	I _{cc}			30	mA	
Negative Supply Current	I _{EE}			10	mA	502 Load
Temperature sensor sensitivity	α	-1.8	-2.1	-2.4	mV/C	-55°C~+85°C
Temperature coefficient of V _{op} for constant gain	γ		0.14		V/°C	-45~+20°C
			0.11			+20°C~85°C
Concentricity	△D			20	um	

Schematic Block Diagram



Block Diagram and Pin description



Pin description

PIN#	DESC	PIN#	DESC
	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