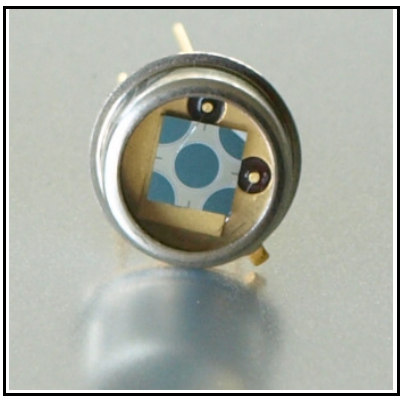
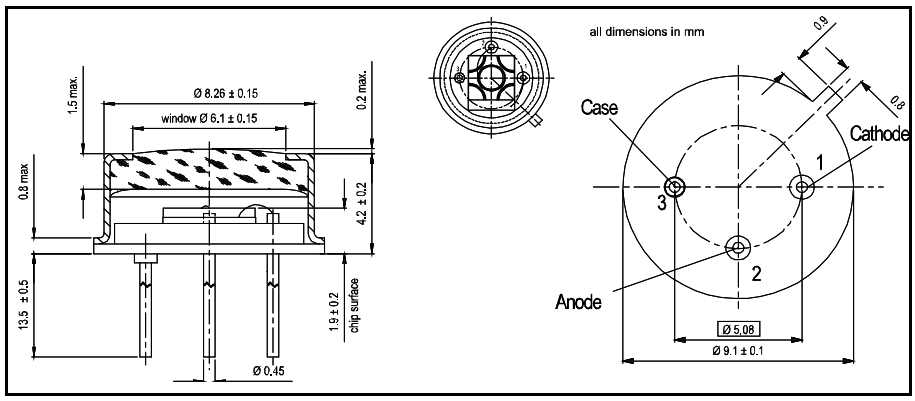
First Sensor

First Sensor APD Data Sheet
Part Description AD1900-11 TO
Order # 500967
Version 20-06-11





Features

- ø 1900 µm active area
- High QE for λ = 350-750 nm
- Low noise
- Fast rise time

Description

Circular active area APD chip with blue enhanced sensitivity. Metal can type hermetic TO5i package with UV glass window.

Application

- Analytical equipment
- Scintillation
- Medical equipment
- High speed photometry

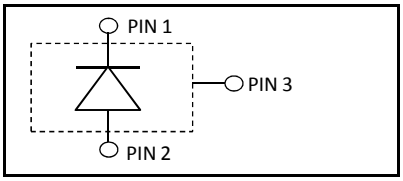
RoHS

2002/95/EC

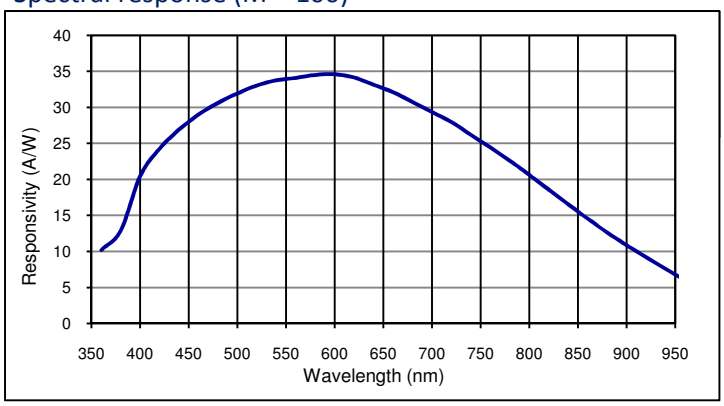
Absolute maximum ratings

Symbol	Parameter	Min	Max	Unit
T_{STG}	Storage temp	-55	125	°C
T_{OP}	Operating temp	-40	85	°C
M_{max}	Gain (I_{P0} = 1 nA)	200		
I_{PEAK}	Peak DC current		0.25	mA

Schematic



Spectral response (M = 100)



Electro-optical characteristics @ 23 °C

Symbol	Characteristic	Test Condition	Min	Typ	Max	Unit
	Active area			diameter 1950		µm
	Active area			3.0		mm²
I_D	Dark current	M = 100		5.0	20.0	nA
C	Capacitance	M = 100		10		pF
	Responsivity	M = 100; λ = 410 nm		22		A/W
	Responsivity	M = 100; λ = 500 nm		32		A/W
t_R	Rise time	M = 100; λ = 410 nm; R_L = 50 Ω		2		ns
	Cut-off frequency	-3dB		175		MHz
V_{BR}	Breakdown voltage	I_R = 2 µA, V_{BR} - binning available	90		240	V
	Temperature coefficiant	Change of V_{BR} with temperature		0.88		V/K
	Excess noise factor	M = 100		2.0		
	Excess noise index	M = 100		0.15		

European, International Sales:

First Sensor

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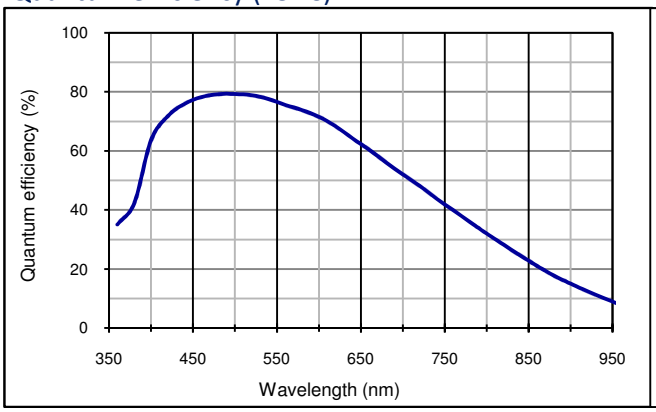
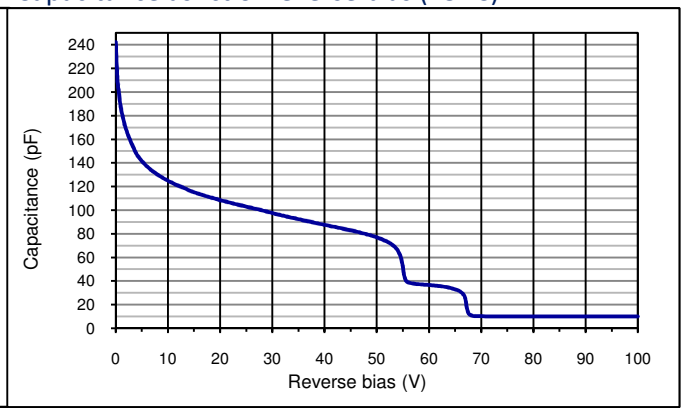
Fax: +1-818-889-7053
E-Mail: sales@pacific-sensor.com

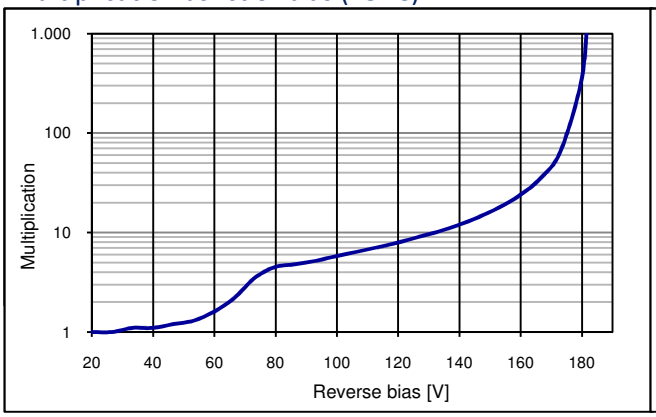
Quantum efficiency (23 °C)



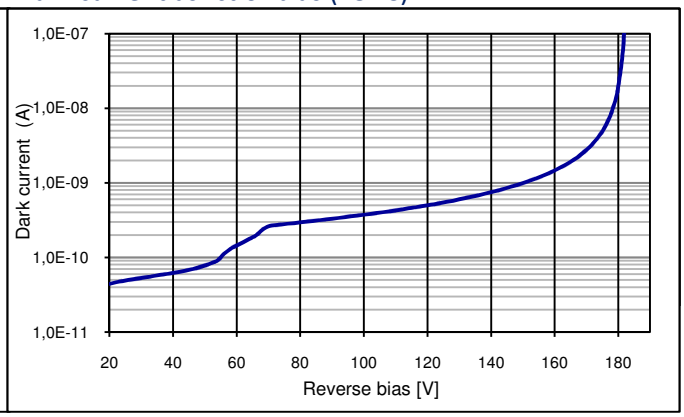
Capacitance as fct of reverse bias (23 °C)



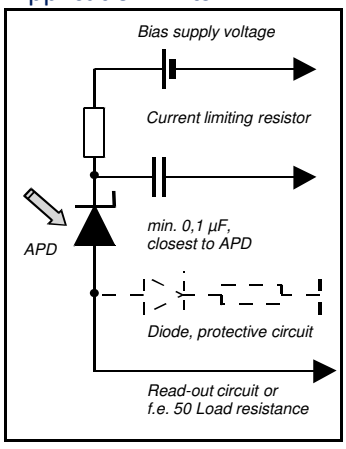
Multiplication as fct of bias (23 °C)



Dark current as fct of bias (23 °C)



Application hints:



- Current should be limited by a protecting resistor or current limiting - IC inside the power supply
- For low light level applications blocking of ambient light should be used
- For high gain applications bias voltage should be temperature compensated
- Please consider basic ESD protection while handling
- Use low noise read-out - IC
- For further questions please refer to document "Instructions for handling and processing"
- Optimum gain: 50-80

Package dimension:

Small quantities: Foam pad, boxed (12 cm x 16.5 cm)

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