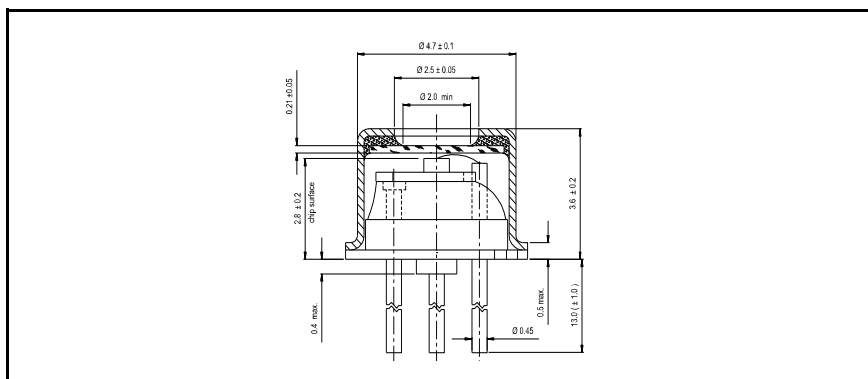




Features

- APD with 0.2 mm² active area
- 500 μm diameter active area
- High gain at low bias voltage
- Fast rise time, low capacitance
- Optimum gain: 50-60

Description

Circular active area APD chip with 500 μm diameter. Metal can type hermetic TO52 package with clear glass window.

Application

- Laser range finder
- High speed photometry
- High speed optical communications
- Medical equipment

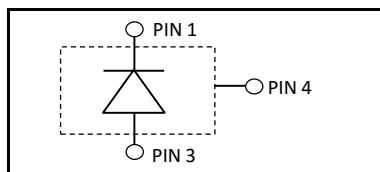
RoHS

2011/65/EU

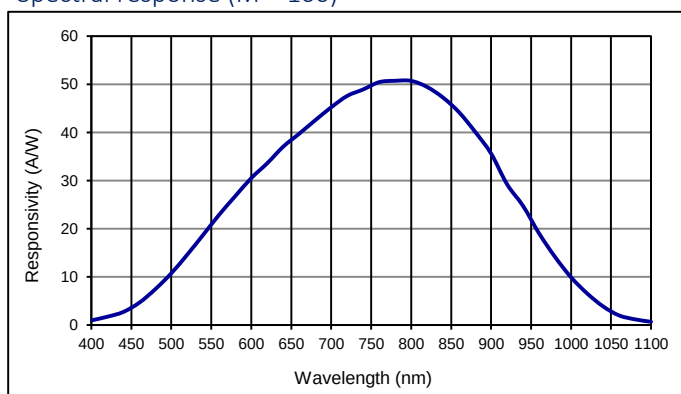
Absolute maximum ratings

Symbol	Parameter	Min	Max	Unit
T _{STG}	Storage temp	-55	125	°C
T _{OP}	Operating temp	-40	100	°C
M _{max}	Gain (I _{PO} = 1 nA)	200		
I _{PEAK}	Peak DC current		0.25	mA

Schematic



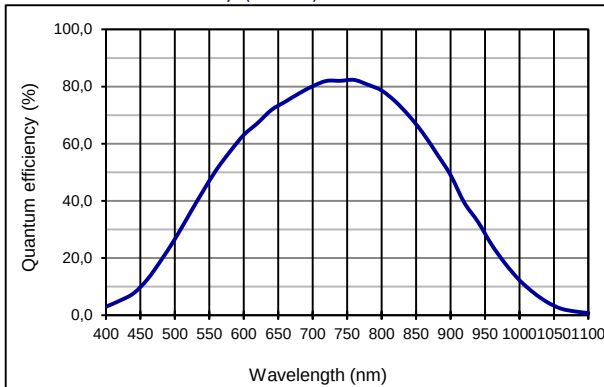
Spectral response ($M = 100$)



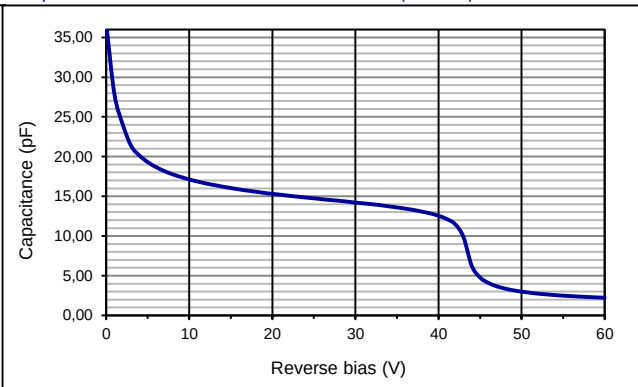
Electro-optical characteristics @ 23 °C

Symbol	Characteristic	Test Condition	Min	Typ	Max	Unit
	Active area		diameter 500			μm
	Active area		0.196			mm^2
I_D	Dark current	$M = 100$		0.5	1.0	nA
C	Capacitance	$M = 100$		2.2		pF
	Responsivity	$M = 100$; $\lambda = 800 \text{ nm}$	45	50		A/W
t_R	Rise time	$M = 100$; $\lambda = 905 \text{ nm}$; $R_L = 50 \Omega$		0.35		ns
	Cut-off frequency	-3dB		1		GHz
V_{BR}	Breakdown voltage	$I_R = 2 \mu\text{A}$	80		120	V
	Temperature coefficient	Change of V_{BR} with temperature		0.45		V/K
	Excess noise factor	$M = 100$		2.2		
	Excess noise index	$M = 100$		0.2		

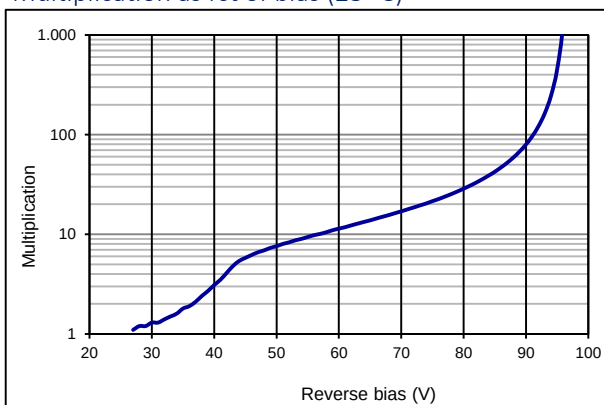
Quantum efficiency (23 °C)



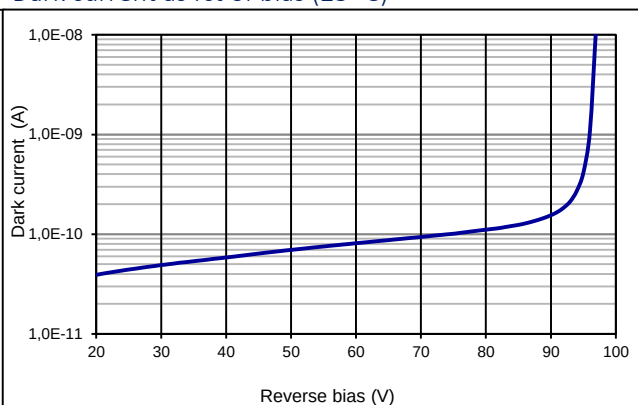
Capacitance as fct of reverse bias (23 °C)



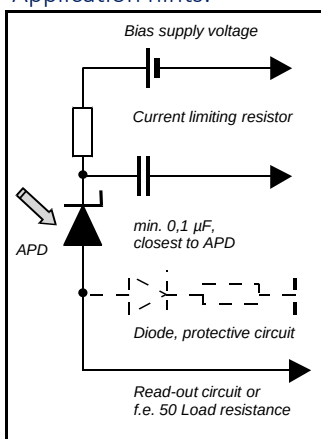
Multiplication as fct of bias (23 °C)



Dark current as fct of bias (23 °C)

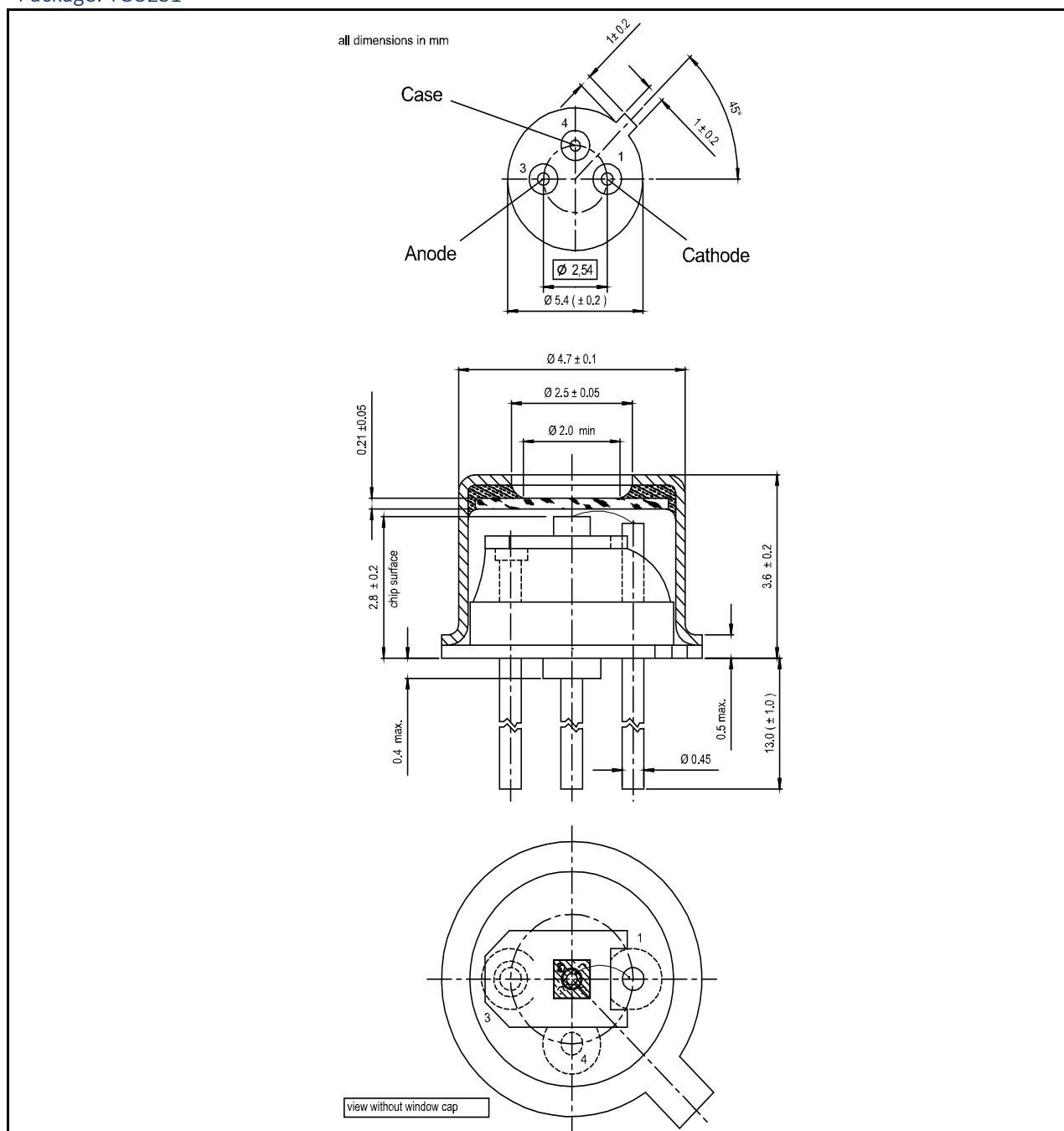


Application hints:



- 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: 50-60

Package: TO52S1



Package dimension:

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

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

First Sensor:

[AD500-8-S1](#)