

AD500-8 SMD

Description

Circular active area APD chip with 500 μ m diameter. Ceramic carrier type non-hermetic SMD package with clear glass. Reflow solderable.

Features

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

Applications

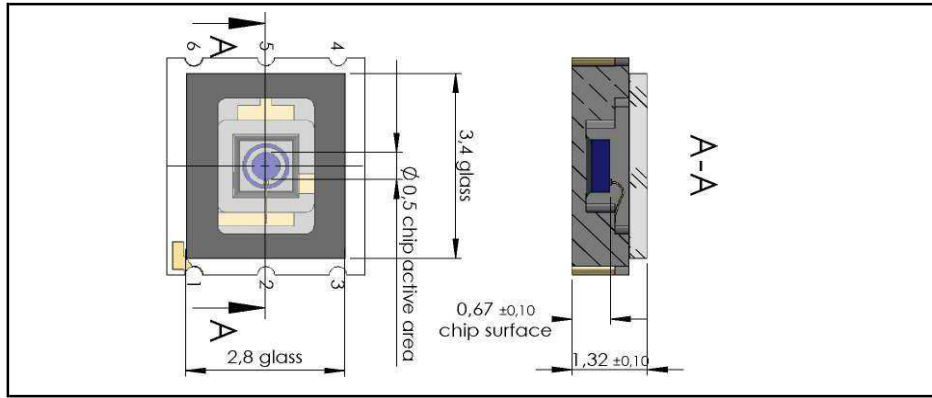
- Laser range finder
- High speed photometry
- High speed optical communications
- Medical equipment
- Distance Measurement

RoHS

2011/65/EU

2015/863/EU

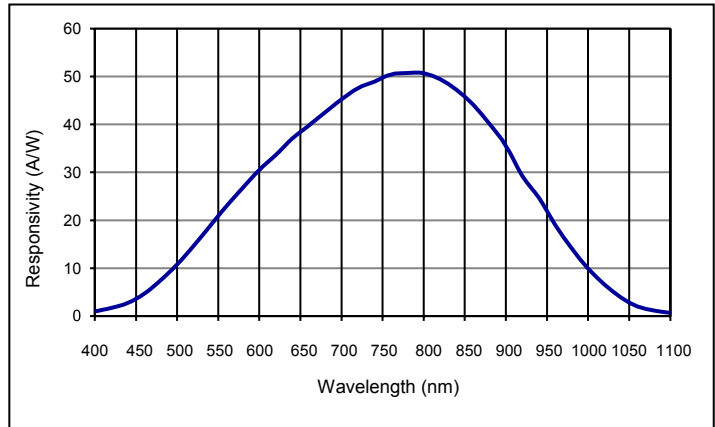
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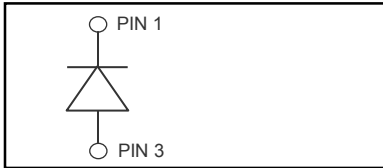
Absolute maximum rating

Symbol	Parameter	Min	Max	Unit
T _{STG}	Storage temp	-40	100	°C
T _{OP}	Operating temp	-20	70	°C
M _{max}	Gain (I _{P0} = 1 nA)	200		
I _{PEAK}	Peak DC current		0.25	mA

Spectral response (M = 100)



Schematic

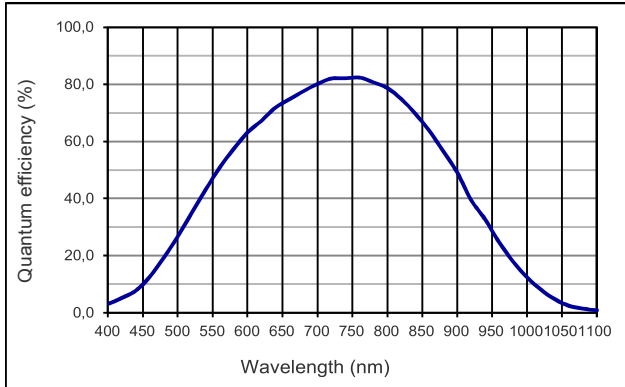


Electro-optical characteristics @ 23°C

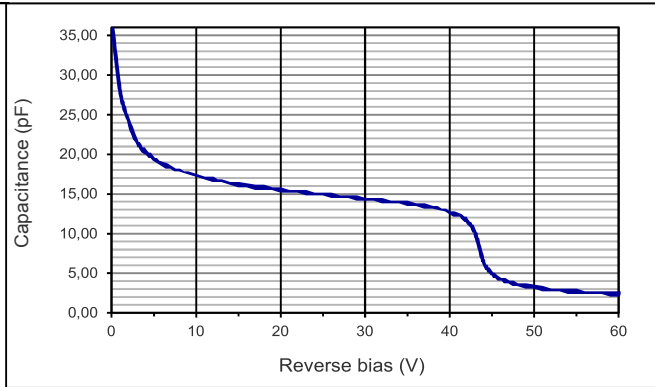
Symbol	Characteristic	Test Condition	Min	Typ	Max	Unit
	Active area		diameter 500			µm
	Active area		0.196			mm ²
I _D	Dark current	M = 100		0.5	1.0	nA
C	Capacitance	M = 100; f = 100 kHz		2.2		pF
	Responsivity	M = 100; λ = 800 nm	45	50		A/W
t _R	Rise time	M = 100; λ = 905 nm; R _L = 50 Ω		0.35		ns
	Cut-off frequency	-3dB		1		GHz
V _{BR}	Breakdown voltage*	I _R = 2 µA	80		120	V
	Temperature coefficient	Change of V _{BR} with temperature	0.35	0.45	0.55	V/K
	Excess noise factor	M = 100; calculated		2.2		
	Excess noise index	M = 100; calculated		0.2		

* ±1V measuring tolerance on upper and lower limits

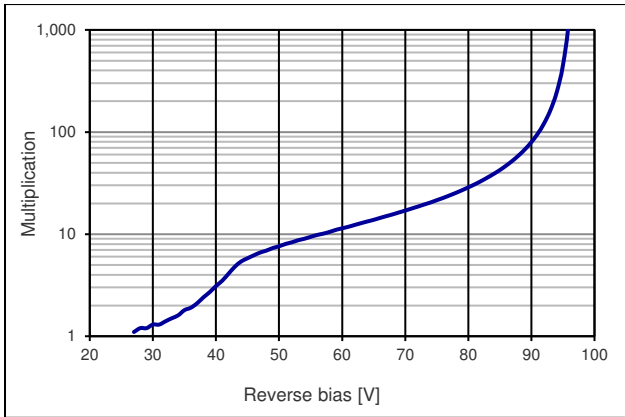
Quantum efficiency (23 °C)



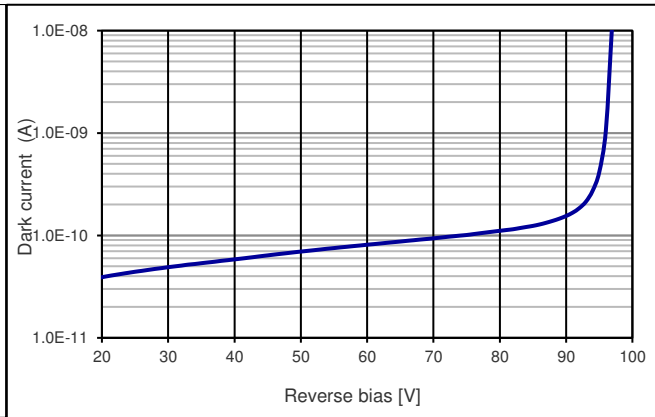
Capacitance as fct of reverse bias (23 °C)



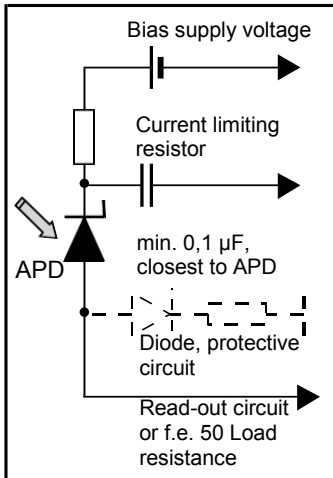
Multiplication as fct of bias (23 °C)



Dark current as fct of bias (23 °C)

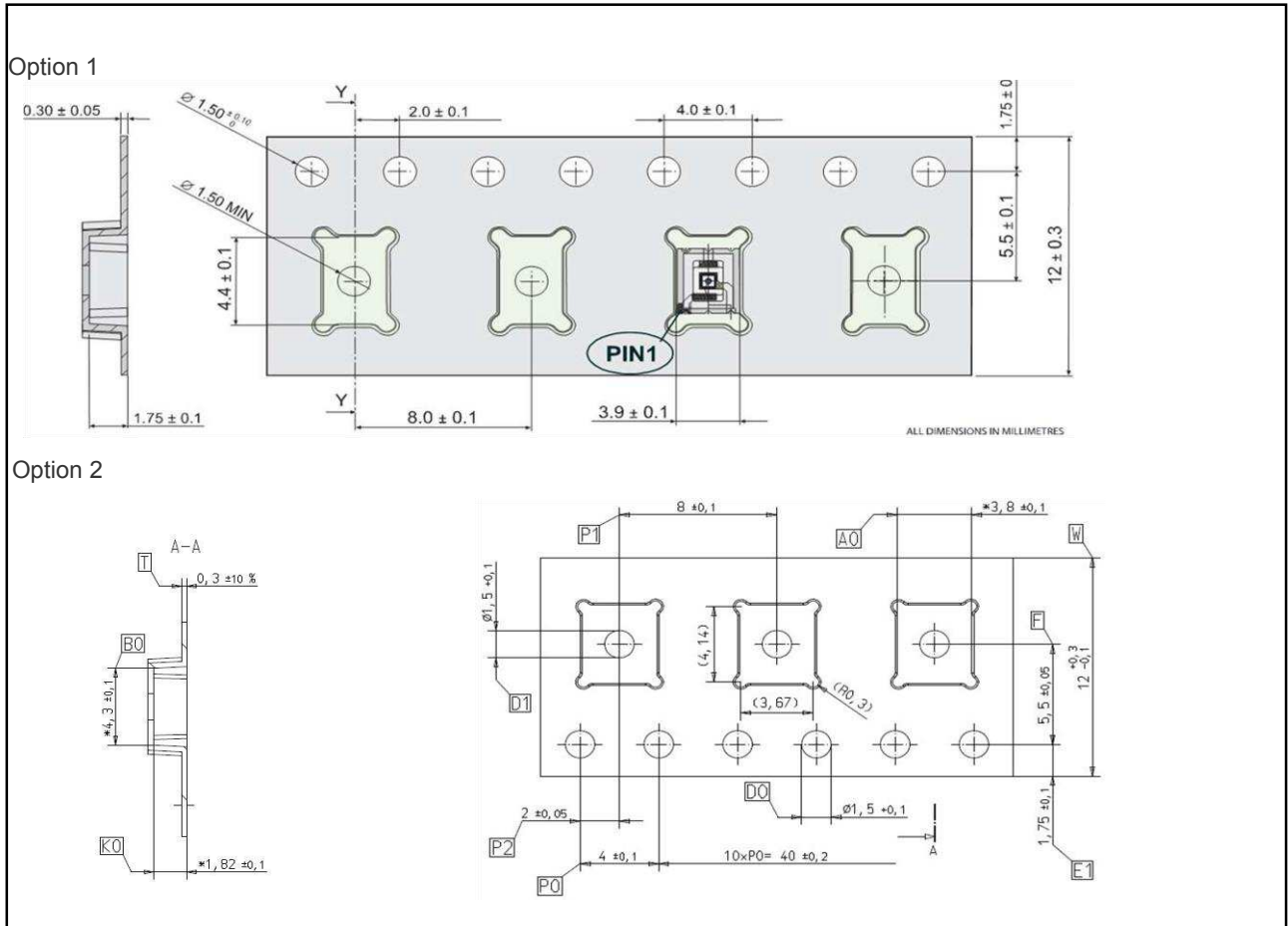


Application hints:

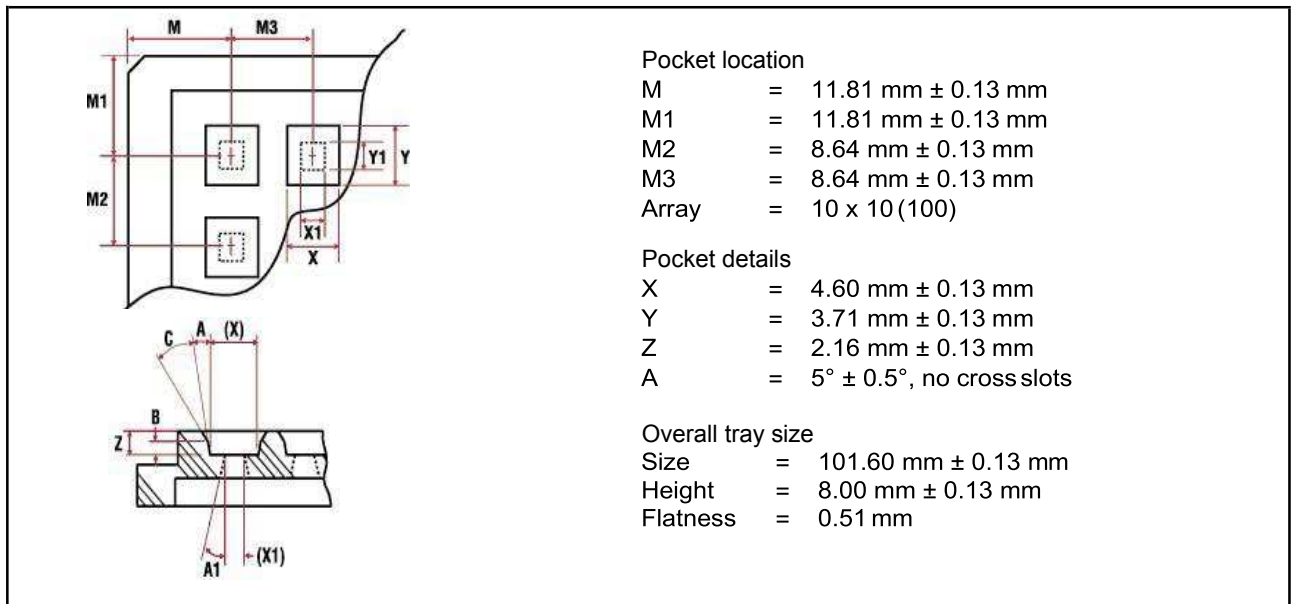


- Current should be limited by a protecting resistor or current limiting - IC inside the power supply
- For low light level applications blocking of ambient light should be used
- For high gain applications bias voltage should be temperature compensated
- Please consider basic ESD protection while handling
- Use low noise read-out - IC
- For further questions please refer to document "Instructions for handling and processing"
- Optimum gain: 50-60

Package dimension, large quantities on reel



Package dimension, small quantities in trays



AD500-8 SMD

Disclaimer: Due to our strive for continuous improvement, specifications are subject to change within our PCN policy according to JESD46C.

Optical inspection

Optical inspection according to failure catalogue for optical sensors FK INS 203.

Ordering Information

Description	TE Part Number	MPQ
AD500-8 SMD (LCC6.1G; Ubr 80-120V)	3001399-F	2500 pcs

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NORTH AMERICA

Tel +1 800 522 6752

EUROPE

Tel +31 73 624 6999

ASIA

Tel +86 0400 820 6015

te.com/sensors

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