

### Features

- APD with 0.008 mm<sup>2</sup> active area
- 100 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 100 μm diameter. Ceramic carrier type non hermetic SMD package with clear glass. Reflow solderable.

### Application

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

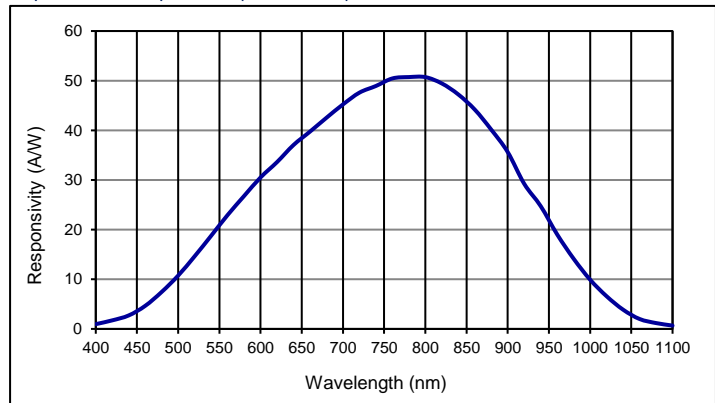
### RoHS

2011/65/EU

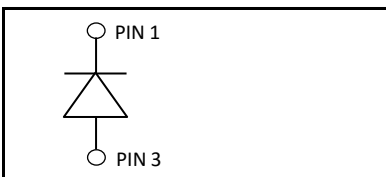
### Absolute maximum ratings

Symbol	Parameter	Min	Max	Unit
T <sub>STG</sub>	Storage temp	-40	100	°C
T <sub>OP</sub>	Operating temp	-20	70	°C
M <sub>max</sub>	Gain (I <sub>PO</sub> = 1 nA)	200		
I <sub>PEAK</sub>	Peak DC current		0.25	mA

### Spectral response (M = 100)



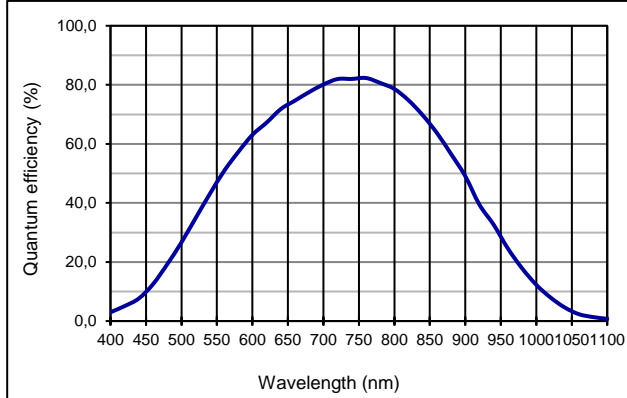
### Schematic



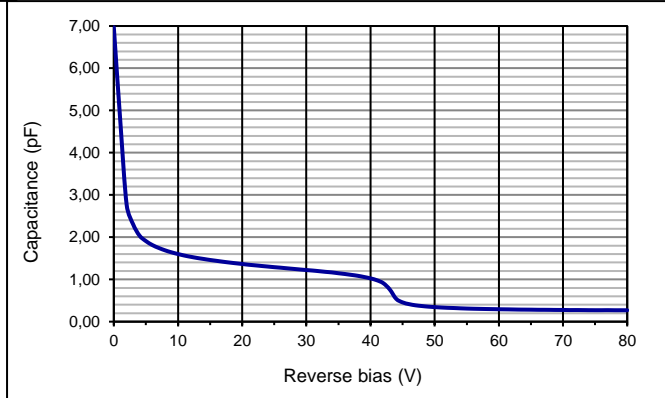
### Electro-optical characteristics @ 23°C

Symbol	Characteristic	Test Condition	Min	Typ	Max	Unit
	Active area		diameter 100			μm
	Active area		0.00785			mm <sup>2</sup>
I <sub>D</sub>	Dark current	M = 100		0.05	0.1	nA
C	Capacitance	M = 100		0.28		pF
	Responsivity	M = 100; λ = 800 nm	45	50		A/W
t <sub>R</sub>	Rise time	M = 100; λ = 905 nm; R <sub>L</sub> = 50 Ω			0.18	ns
	Cut-off frequency	-3dB	2			GHz
V <sub>BR</sub>	Breakdown voltage	I <sub>R</sub> = 2 μA	80		120	V
	Temperature coefficient	Change of V <sub>BR</sub> with temperature	0.35	0.45	0.55	V/K
	Excess noise factor	M = 100		2.2		
	Excess noise index	M = 100		0.2		

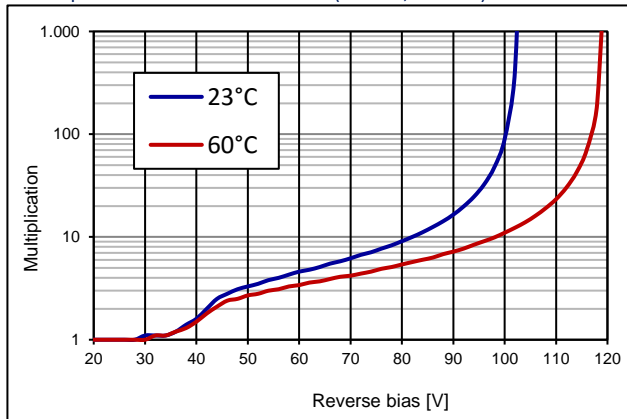
Quantum efficiency (23 °C)



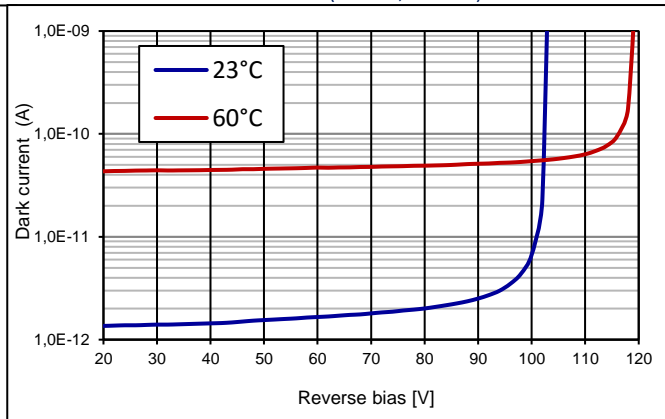
Capacitance as fct of reverse bias (23 °C)



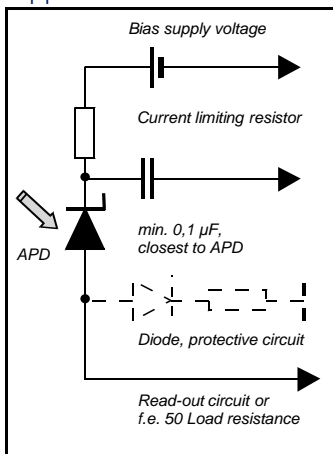
Multiplication as fct of bias (23 °C, 60 °C)



Dark current as fct of bias (23 °C, 60 °C)

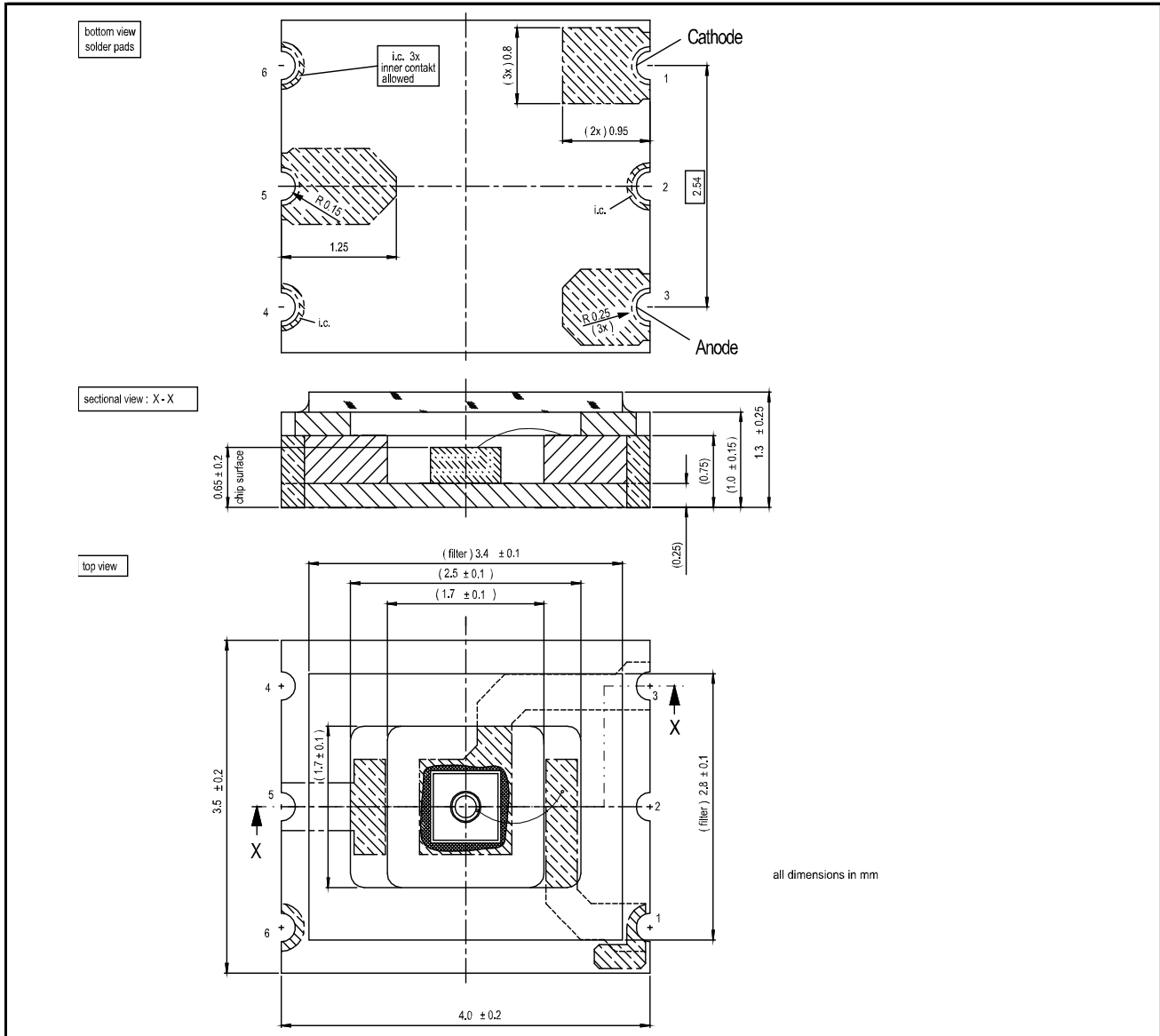


Application hints:

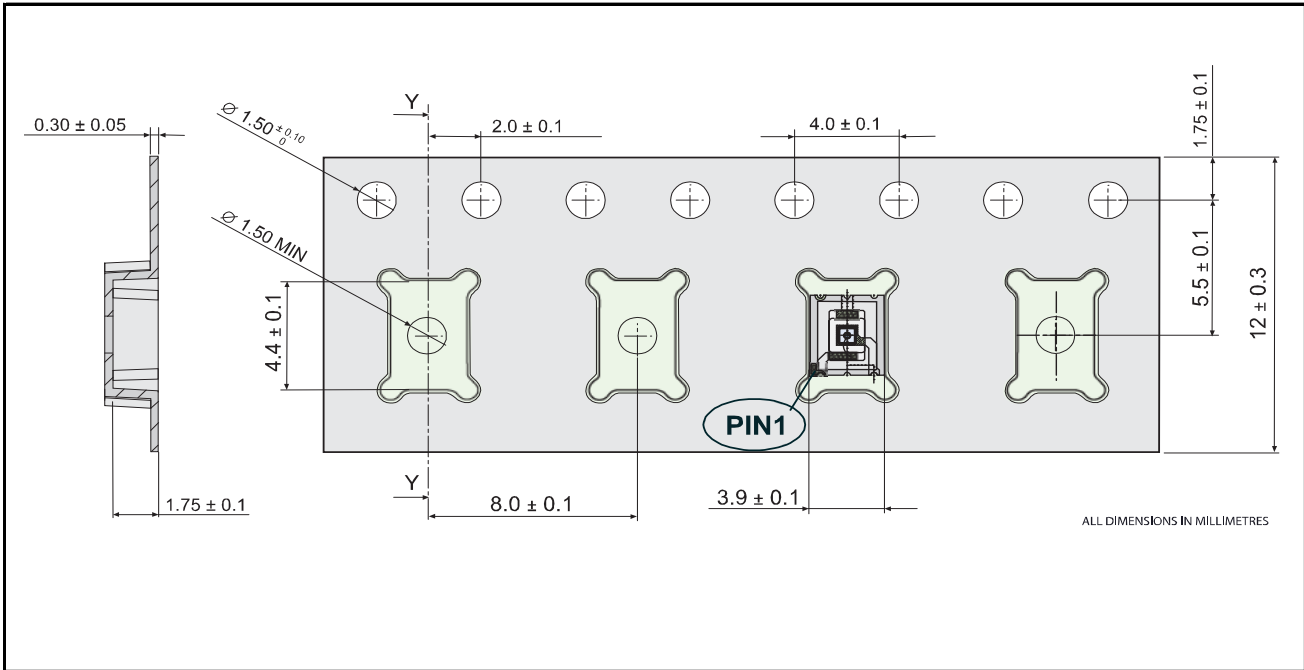


- Current should be limited by a protecting resistor or current limiting - IC inside the power supply
- For low light level applications blocking of ambient light should be used
- For high gain applications bias voltage should be temperature compensated
- Please consider basic ESD protection while handling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

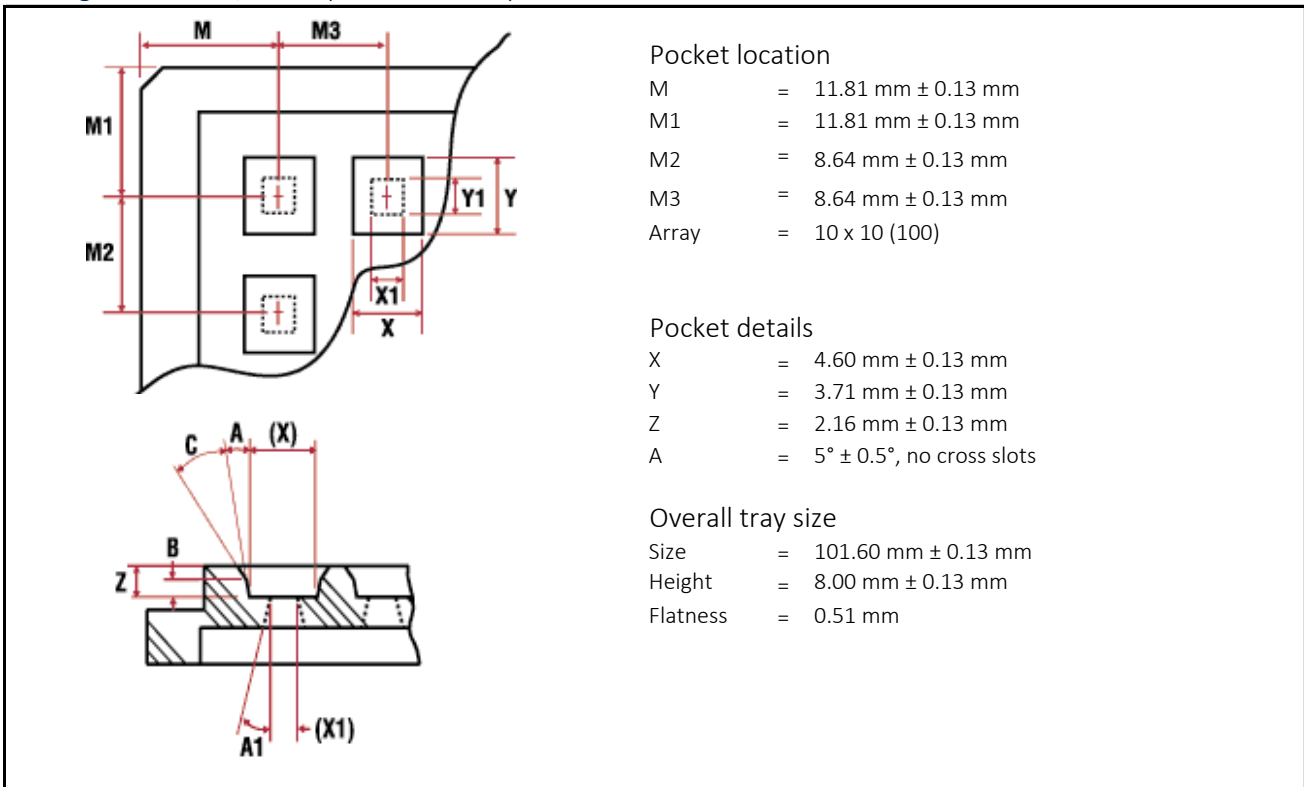
Technical Drawing, Package: LCC6.1



Package dimension, large quantities on reel



Package dimension, small quantities in trays



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