

**Features**

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

**Application**

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

**RoHS**

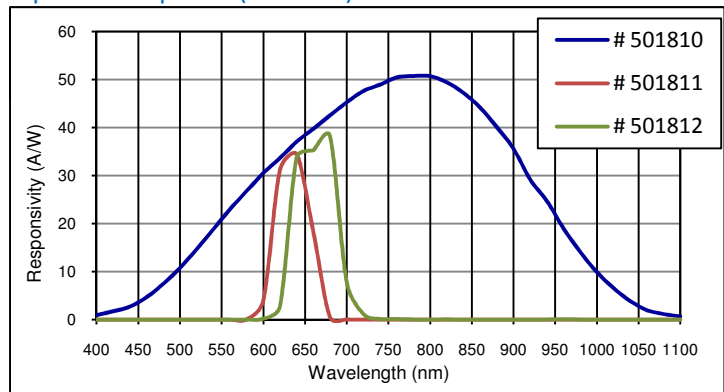
2002/95/EC



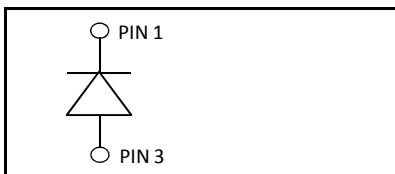
**Absolute maximum ratings**

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 @ 22°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		0.5		pF
	Responsivity	Order # <b>501810</b> ; M = 100; λ = 800 nm	45	50		A/W
	Responsivity	Order # <b>501811</b> ; M = 100; λ = 635 nm	30	32		A/W
	Responsivity, preliminary	Order # <b>501812</b> ; M = 100; λ = 650 nm	30	35		A/W
t <sub>R</sub>	Rise time	M = 100; λ = 905 nm; R <sub>i</sub> = 50 Ω			0.18	ns
	Cut-off frequency	-3dB	2			GHz
V <sub>BR</sub>	Breakdown voltage	I <sub>R</sub> = 2 µA, V <sub>BR</sub> - binning available	80		200	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		
	N.E.P.	M = 100; λ = 800 nm		3 E-15		W/√Hz
	Noise current	M = 100; λ = 800 nm		0.15		pA/√Hz

**European, International Sales:**



International AG

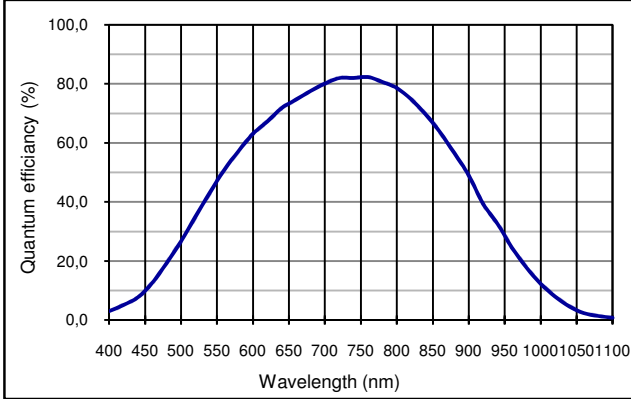
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**USA:**

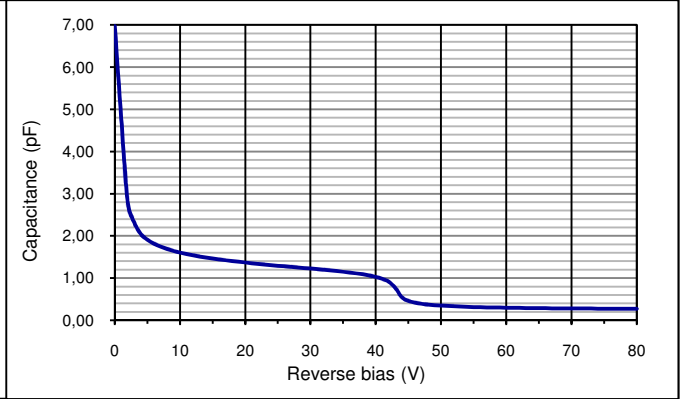


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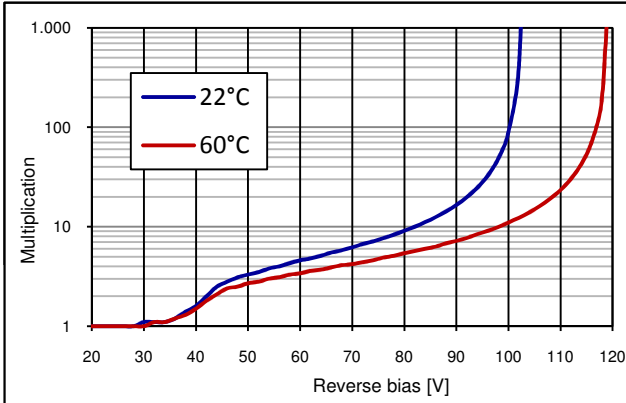
Quantum efficiency (22 °C)



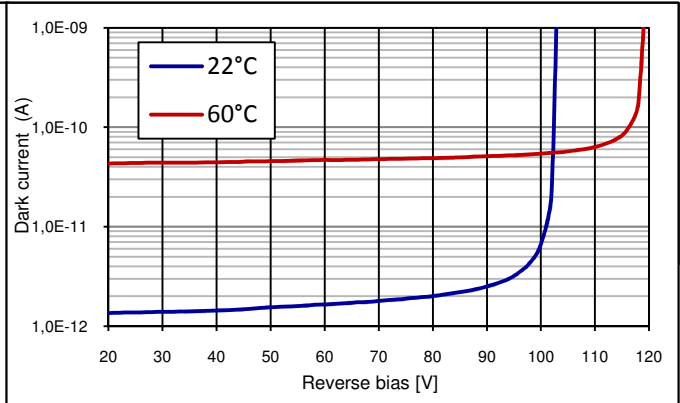
Capacitance as fct of reverse bias (22 °C)



Multiplication as fct of bias (22 °C, 60 °C)

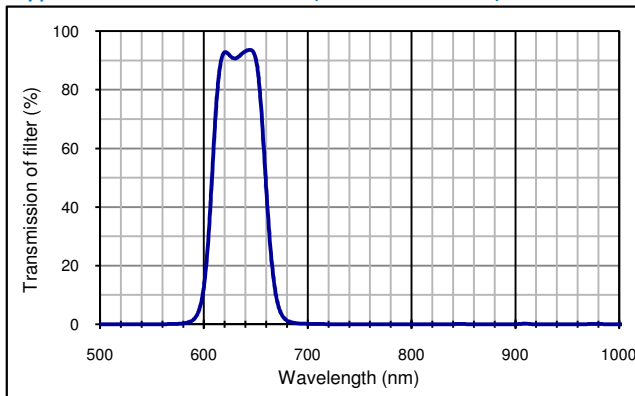


Dark current as fct of bias (22 °C, 60 °C)



Order # 501811:

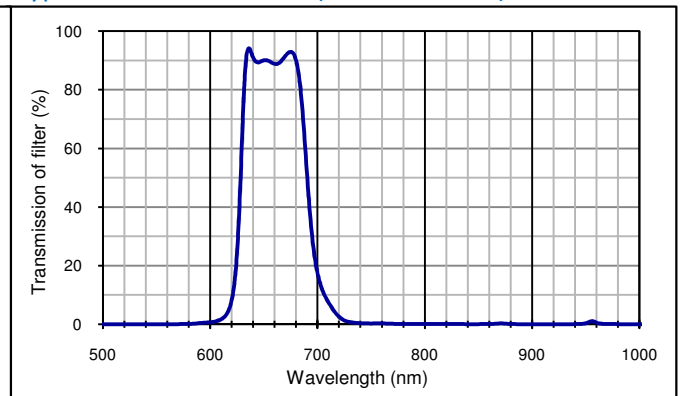
Typ. filter characteristics (center 635 nm)



full filter specification upon request

Order # 501812, preliminary specification:

Typ. filter characteristics (center 650 nm)



full filter specification upon request

**European, International Sales:**



International AG

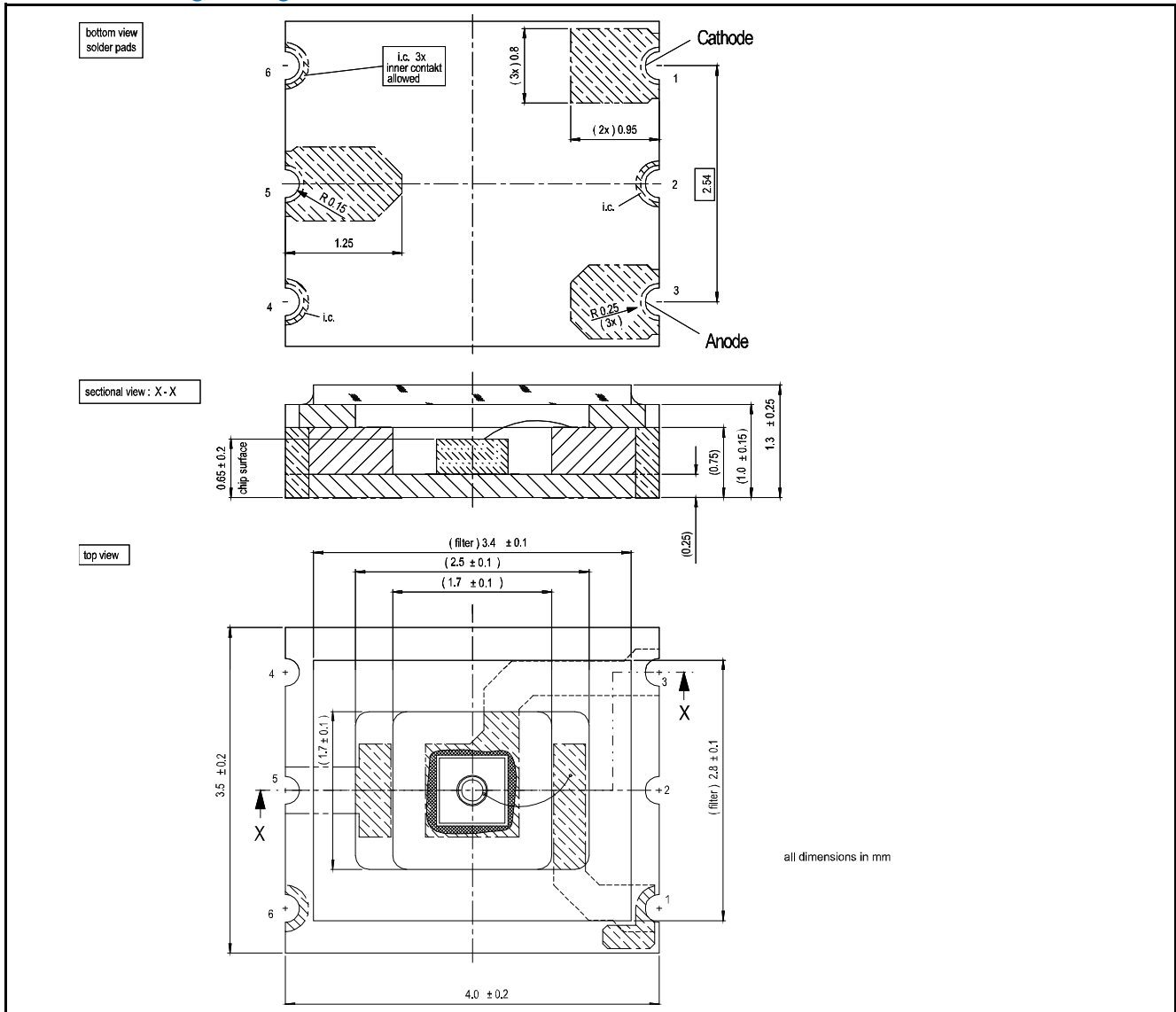
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**USA:**

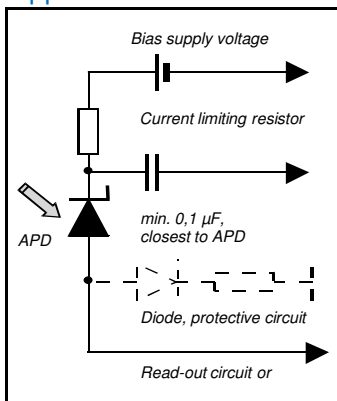


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Technical Drawing, Package: LCC6.1



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

European, International Sales:

USA:

