

Features

- APD with 0.2 mm² active area
- Slow multiplication curve
- QE > 80% @ 730 nm-930 nm
- Fast rise time, low noise
- Optimum gain: 50-60

Description

Circular active area APD chip with NIR enhanced sensitivity. Ceramic carrier type non hermetic SMD package with clear glass or filter window. Reflow solderable. Filter on request.

Application

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

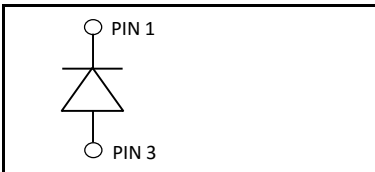
RoHS

2011/65/EU

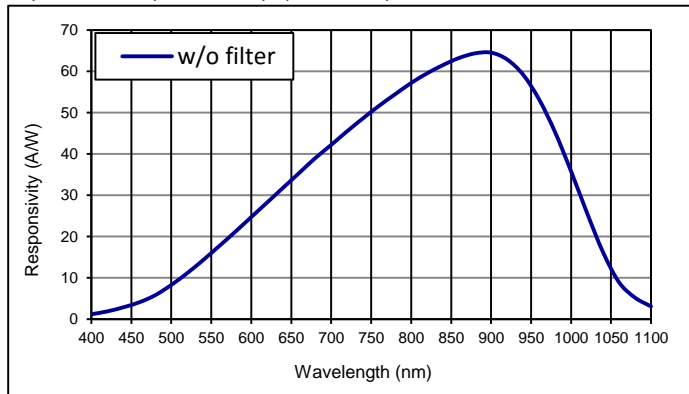
Absolute maximum ratings

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

Schematic



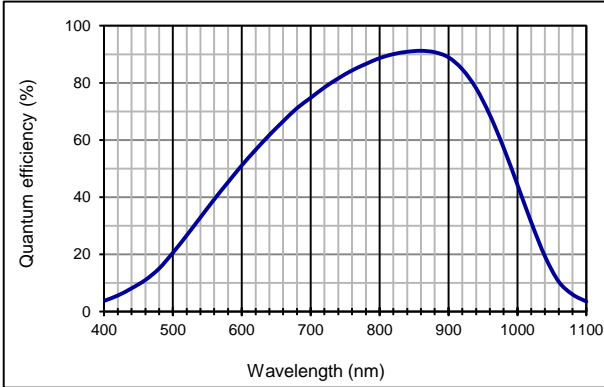
Spectral response chip (M = 100)



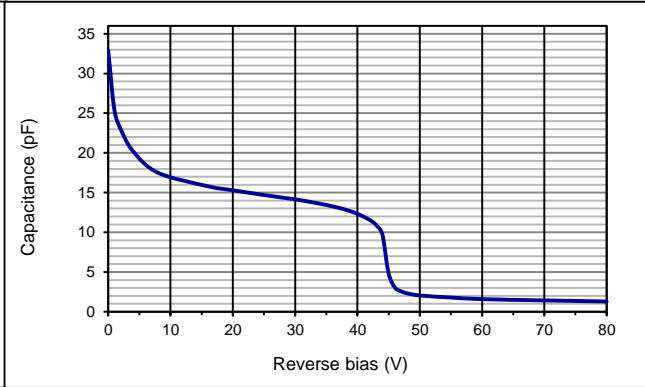
Electro-optical characteristics @ 23 °C

| 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 | 2.0 | nA |
| C | Capacitance | M = 100 | | 1.0 | | pF |
| | Responsivity | M = 100; λ = 905 nm | 60 | 64 | 68 | A/W |
| t _R | Rise time | M = 100; λ = 905 nm; R _L = 50 Ω | | 1.6 | 2 | ns |
| | Cut-off frequency | -3dB | | 0.2 | | GHz |
| V _{BR} | Breakdown voltage | I _R = 2 µA, V _{BR} - binning available | 260 | | 340 | V |
| | Temperature coefficient | Change of V _{BR} with temperature | 2.0 | 2.3 | 2.6 | V/K |
| | Excess noise factor | M = 100 | | 4.0 | | |
| | Excess noise index | M = 100 | | 0.3 | | |

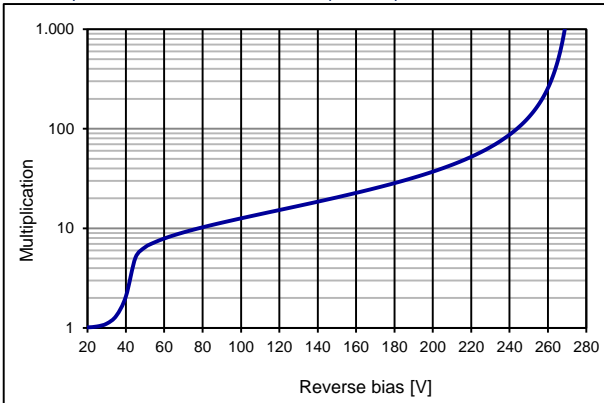
Quantum efficiency (23 °C)



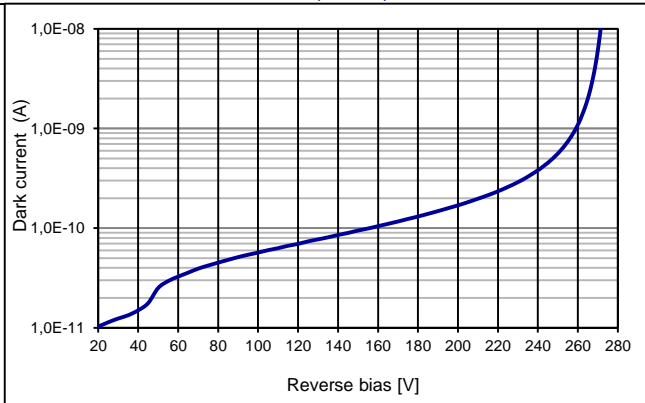
Capacitance as fct of reverse bias (23 °C)



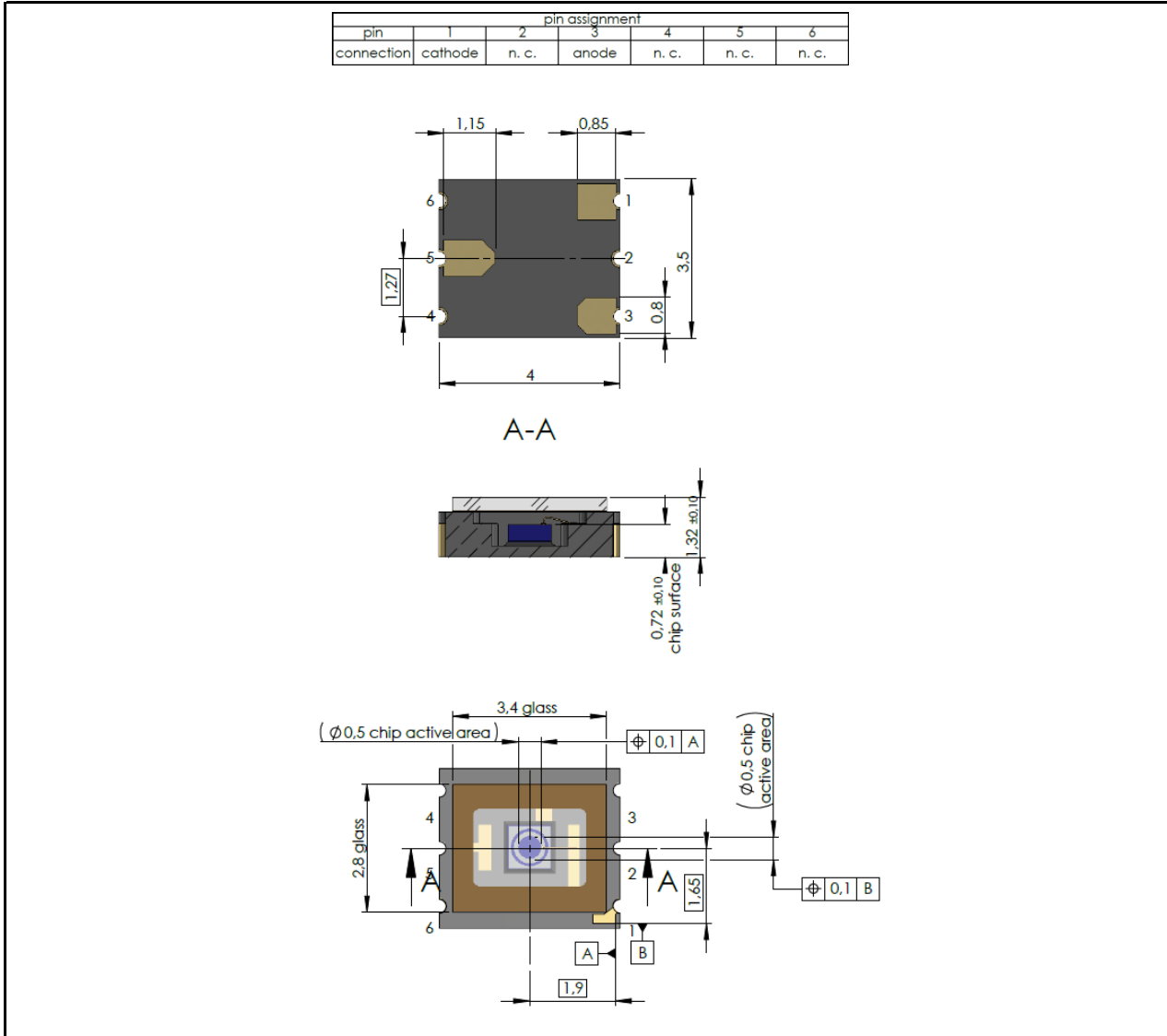
Multiplication as fct of bias (23 °C)



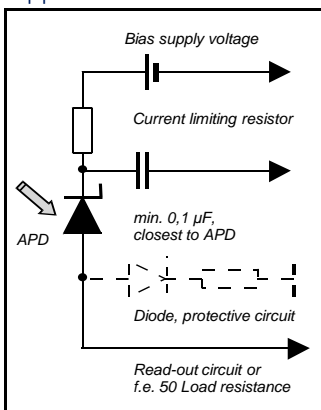
Dark current as fct of bias (23 °C)



Technical Drawing, Package: LCC6.1

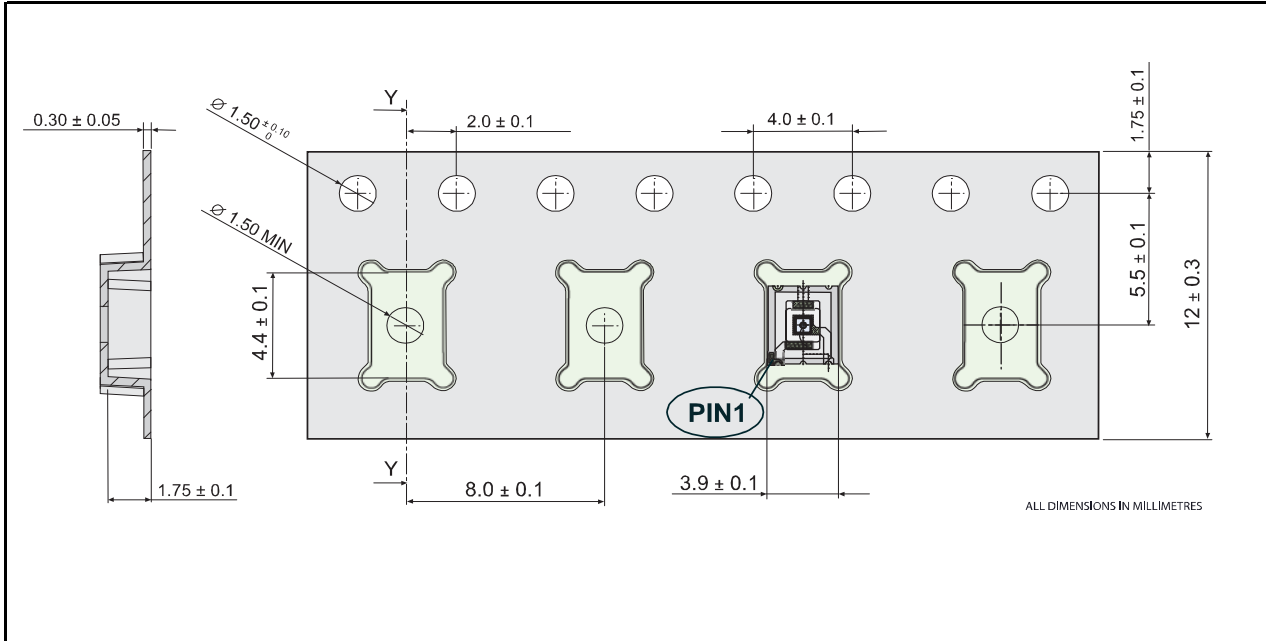


Application hints:

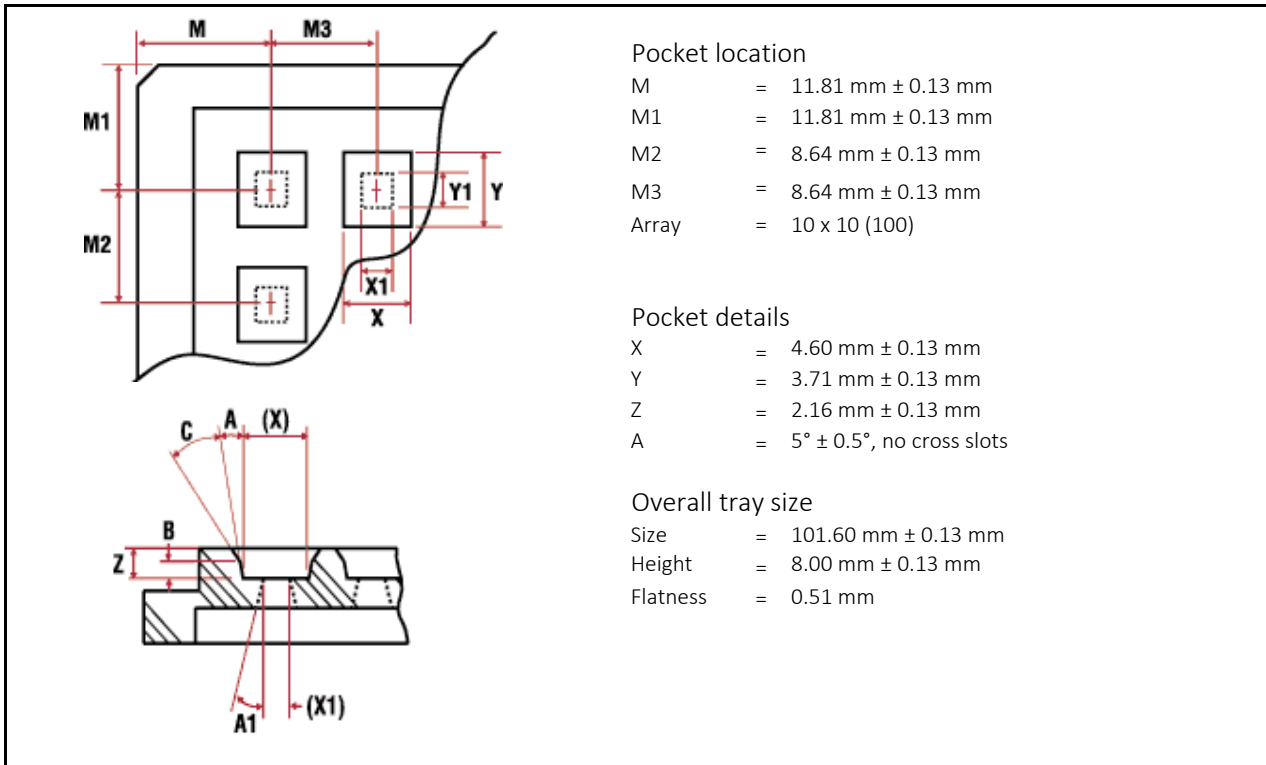


- Current should be limited by a protecting resistor or current limiting - IC inside the power supply
- For low light level applications blocking of ambient light should be used
- For high gain applications bias voltage should be temperature compensated
- Please consider basic ESD protection while handling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

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.