

Features

- \varnothing 800 μ m active area
- High QE for $\lambda = 850$ -1064 nm
- Low noise
- Low slope multiplication curve

Description

Circular active area APD chip with IR enhanced sensitivity. Very low dark current due to guard ring diode. Metal can type hermetic TO5i package with clear glass window.

Application

- Pulsed 1064 nm laser detection
- Laser range finding
- Fluorescence detection

RoHS

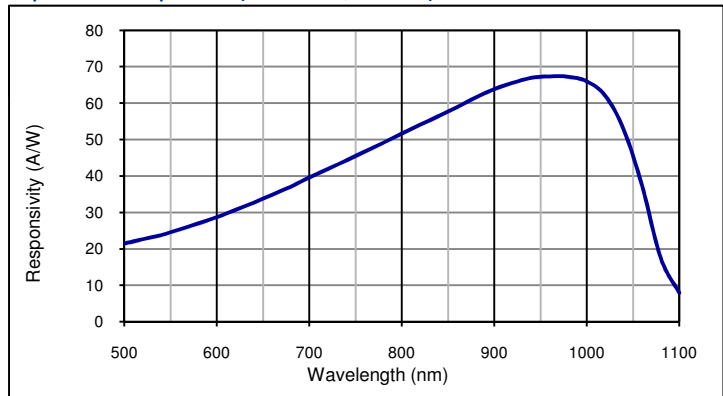
2002/95/EC



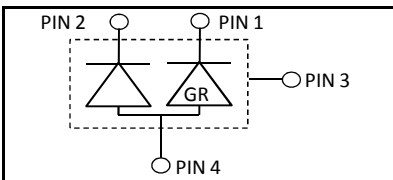
Absolute maximum ratings

| Symbol | Parameter | Min | Max | Unit |
|------------|-------------------------|------|------|--------------|
| T_{STG} | Storage temp | -55 | 125 | $^{\circ}$ C |
| T_{OP} | Operating temp | -40* | 100 | $^{\circ}$ C |
| M_{max} | Gain ($I_{PO} = 1$ nA) | 1000 | | |
| I_{PEAK} | Peak DC current | | 0.25 | mA |

Spectral response ($M = 100$; 23 $^{\circ}$ C)



Schematic



Electro-optical characteristics @ 23 $^{\circ}$ C

| Symbol | Characteristic | Test Condition | Min | Typ | Max | Unit |
|----------|-------------------------|--|-----|-------------------|-----|-----------------|
| | Active area | | | \varnothing 800 | | μ m |
| | Active area | | | 0.5 | | mm ² |
| I_D | Dark current | $M = 100$ | | 3 | 25 | nA |
| C | Capacitance | $M = 100$ | | 1 | | pF |
| | Responsivity | $M = 100$; $\lambda = 905$ nm | | 65 | | A/W |
| | Responsivity | $M = 100$; $\lambda = 1064$ nm | | 36 | | A/W |
| t_R | Rise time | $M = 100$; $\lambda = 1064$ nm; $R_i = 50 \Omega$ | | 5 | | ns |
| t_R | Cut-off frequency | -3dB | | 70 | | MHz |
| V_{BR} | Breakdown voltage | $I_R = 2 \mu$ A | 220 | 300 | 600 | V |
| | Temperature coefficient | | | 3.3 | | V/K |

* please note that depending on operation voltage APD operation at temperatures below -15 $^{\circ}$ C may require sophisticated control circuit.

European, International Sales:

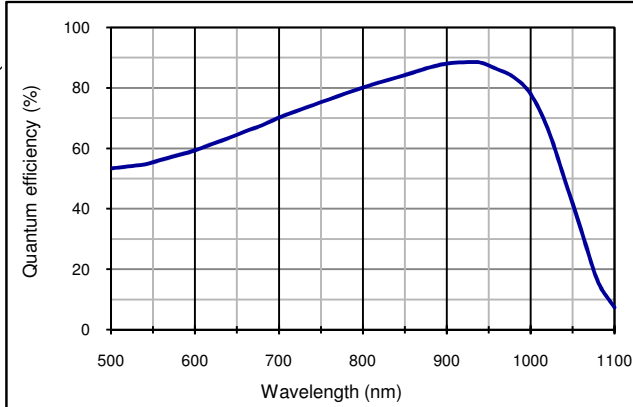
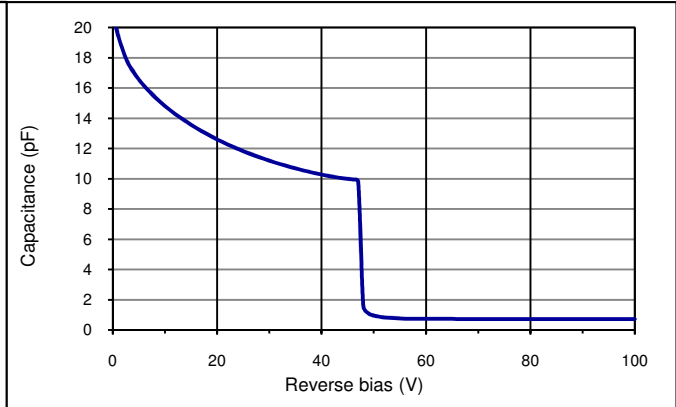
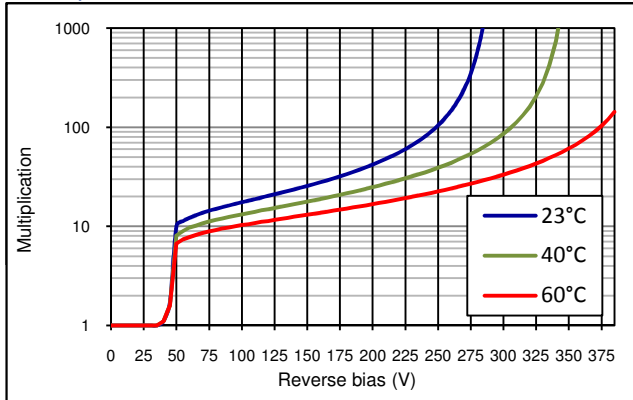
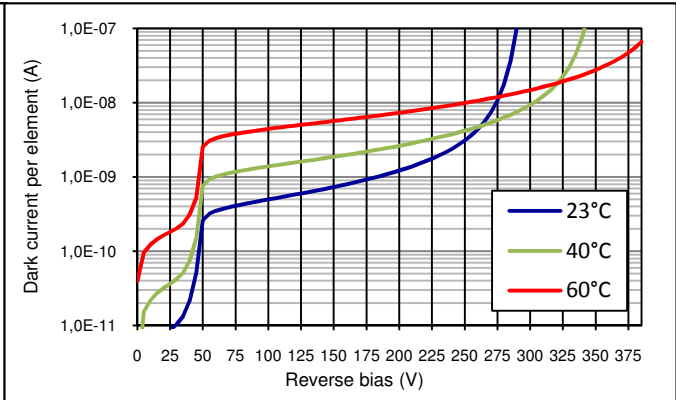
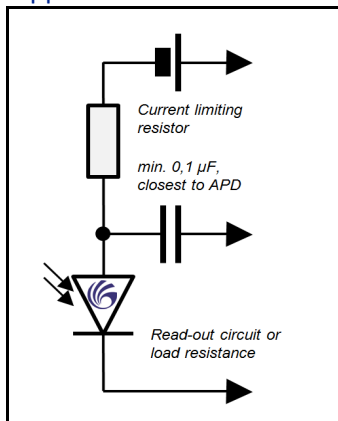


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Quantum efficiency (23 °C)

Capacitance as fct of reverse bias (23 °C)

Multiplication as fct of reverse bias

Dark current as fct of reverse bias

Application hints:


- Current should be limited by a protecting resistor or current limiting - IC inside the power supply
- Guard ring should be connected to ground
- 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" and application notes for APDs and APD-Arrays

Package dimension:

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

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

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