

### Features

- APD with 0.04 mm<sup>2</sup> active area
- Optimized for 550 nm to 750 nm
- Very high sensitivity
- High cut-off frequency
- Ultra low temperature coefficient

### Description

Circular active area APD chip with 230 μm diameter. Metal can type hermetic TO52S1 package with clear glass window.

### Application

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

### RoHS

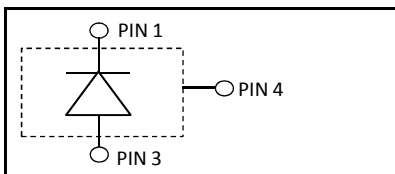
2002/95/EC



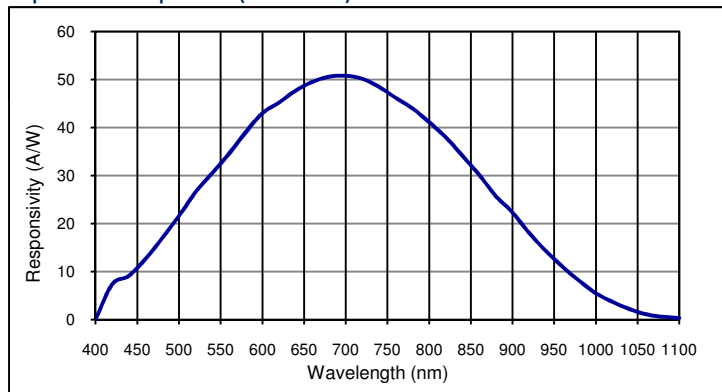
### Absolute maximum ratings

| Symbol            | Parameter                     | Min | Max  | Unit |
|-------------------|-------------------------------|-----|------|------|
| T <sub>STG</sub>  | Storage temp                  | -55 | 125  | °C   |
| T <sub>OP</sub>   | Operating temp                | -40 | 100  | °C   |
| M <sub>max</sub>  | Gain (I <sub>PO</sub> = 1 nA) | 200 |      |      |
| I <sub>PEAK</sub> | Peak DC current               |     | 0.25 | mA   |

### Schematic



### Spectral response (M = 100)



### Electro-optical characteristics @ 23°C

| Symbol          | Characteristic          | Test Condition   | Min          | Typ  | Max | Unit            |
|-----------------|-------------------------|--|--------------|------|-----|-----------------|
|                 | Active area             |  | diameter 230 |      |     | μm              |
|                 | Active area             |  | 0.04         |      |     | mm <sup>2</sup> |
| I <sub>D</sub>  | Dark current            | M = 100  |              | 0.2  | 1.0 | nA              |
| C               | Capacitance             | M = 100  |              | 1.5  |     | pF              |
|                 | Responsivity            | M = 100; λ = 660 nm  | 45           | 50   |     | A/W             |
| t <sub>R</sub>  | Rise time               | M = 100; λ = 660 nm; R <sub>L</sub> = 50 Ω                 |              | 0.18 |     | ns              |
|                 | Cut-off frequency       | -3dB, phase shift mode                                     | 2            | 3    |     | GHz             |
| V <sub>BR</sub> | Breakdown voltage       | I <sub>R</sub> = 2 μA, V <sub>BR</sub> - binning available | 60           | 90   | 120 | V               |
|                 | Temperature coefficient | Change of V <sub>BR</sub> with temperature                 |              | 0.2  |     | V/K             |
|                 | Excess noise factor     | M = 100  |              | 2.0  |     |                 |
|                 | Excess noise index      | M = 100  |              | 0.15 |     |                 |

#### European, International Sales:

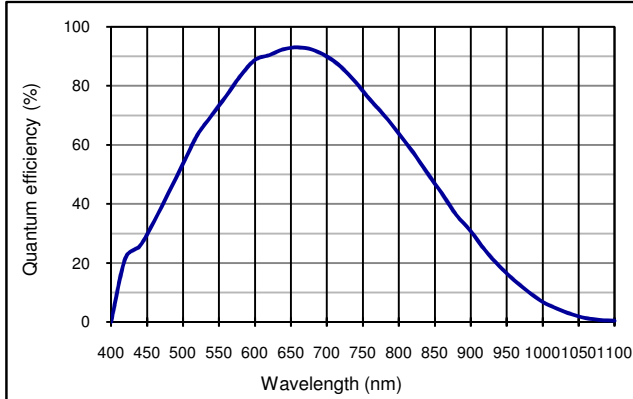
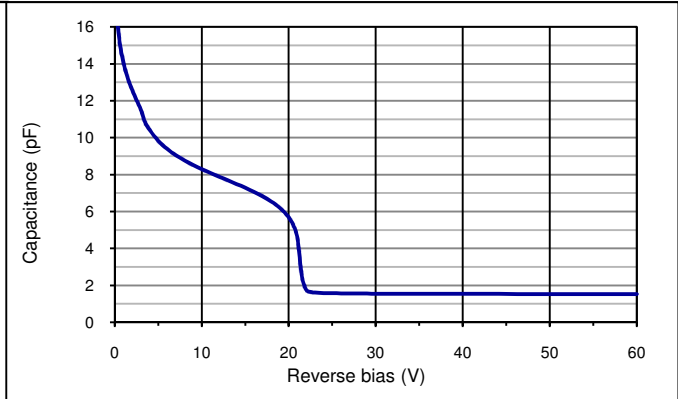
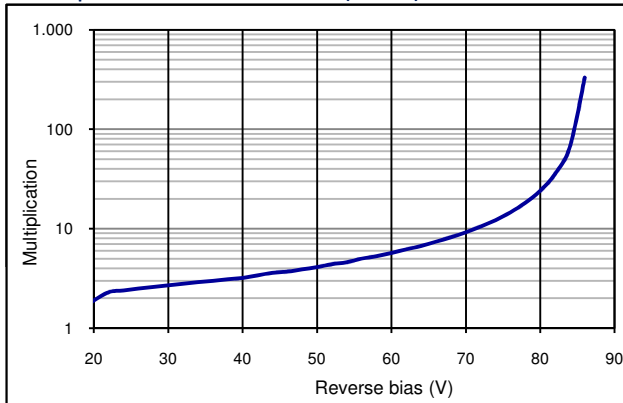
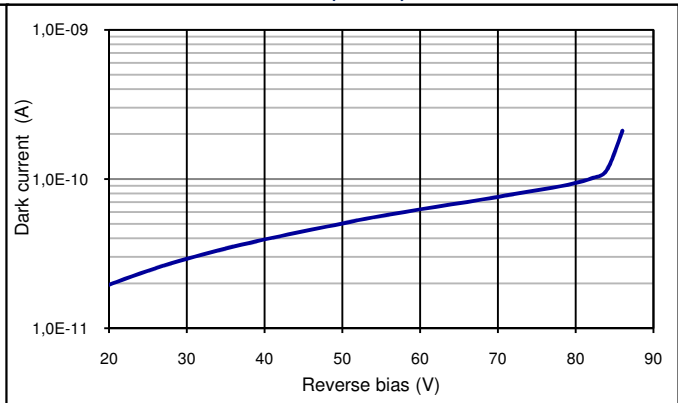
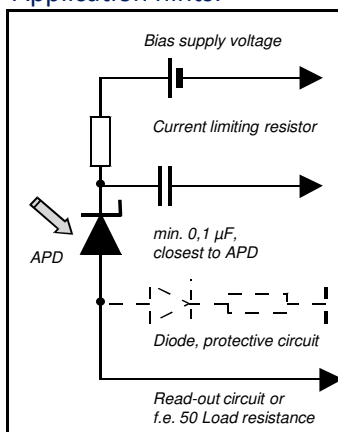


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**Quantum efficiency (23 °C)**

**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"

**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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