

Features

- 50 mm² Quadrant PIN detector
- High sensitivity
- Two gap widths available
- Low dark current
- Flat window version available

Description

Low dark current quadrant PIN photodiode with 4 x 12 mm² active area. Metal can type hermetic TO8S package with clear glass window. Flat window version available**.

Application

- Laser beam position sensor
- Autocollimators
- Optical tweezers
- Ellipsometers

RoHS

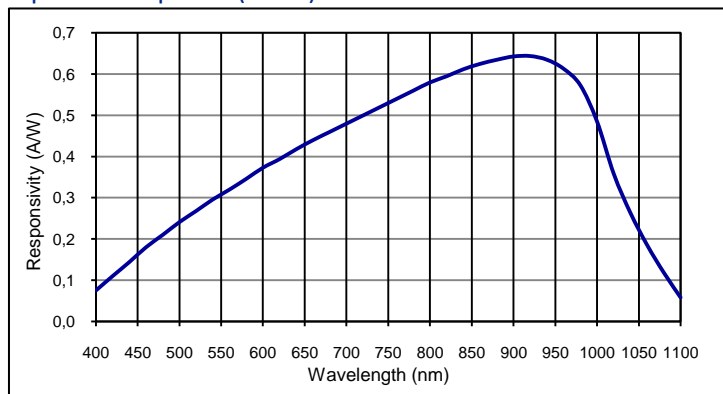
2002/95/EC



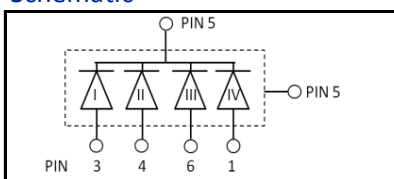
Absolute maximum ratings

| Symbol | Parameter | Min | Max | Unit |
|-------------------|---------------------|-----|-----|------|
| T _{STG} | Storage temp | -55 | 125 | °C |
| T _{OP} | Operating temp | -40 | 100 | °C |
| V _{max} | Max reverse voltage | | 20 | V |
| I _{PEAK} | Peak DC current | | 10 | mA |

Spectral response (23 °C)



Schematic



Electro-optical characteristics @ 23 °C

| Symbol | Characteristic | Test Condition | Min | Typ | Max | Unit |
|-----------------|--------------------|----------------------------------------------------------|-----------------------|--------|-----|-----------------|
| | Number of elements | | 4 quadrants | | | |
| | Active area | | diameter 7980 (total) | | | μm |
| | Active area | per element | 12 | | | mm ² |
| | Gap for #500142 | between elements | 42 | | | μm |
| | Gap for #500732 | between elements | 18 | | | μm |
| I _D | Dark current | V _R = 10 V; per element | | 2.0 | 5.0 | nA |
| C | Capacitance | V _R = 0 V; per element | | 120 | | pF |
| | | V _R = 10 V; per element | | 20 | | pF |
| | Responsivity | λ = 632 nm | | 0.4 | | A/W |
| | | λ = 900 nm | | 0.64 | | A/W |
| t _R | Rise time | V _R = 0 V; λ = 850 nm; R _L = 50 Ω | | 2000 | | ns |
| | | V _R = 10 V; λ = 850 nm; R _L = 50 Ω | | 40 | | ns |
| | Shunt Resistance | V _R = 5 mV; per element | | 50 | | MΩ |
| | N.E.P. | V _R = 5 V; λ = 900 nm; per element | | 4 E-14 | | W/√Hz |
| V _{BR} | Breakdown voltage | I _R = 2 μA | 20 | 50 | | V |

European, International Sales:

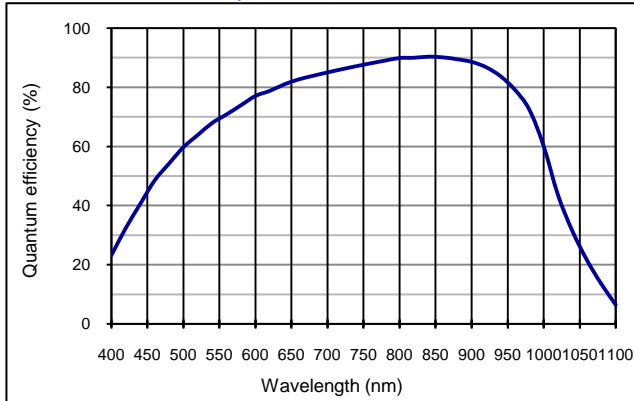
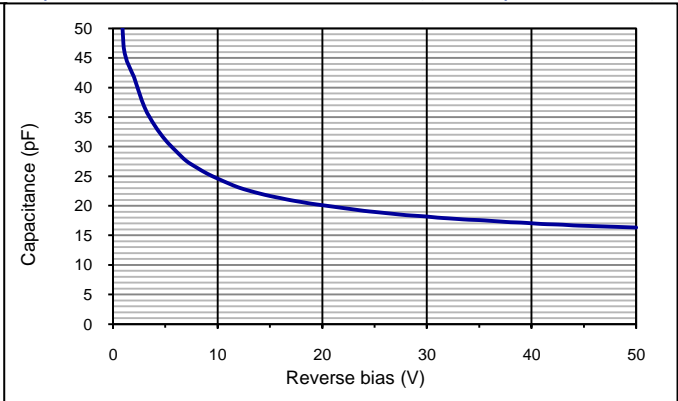
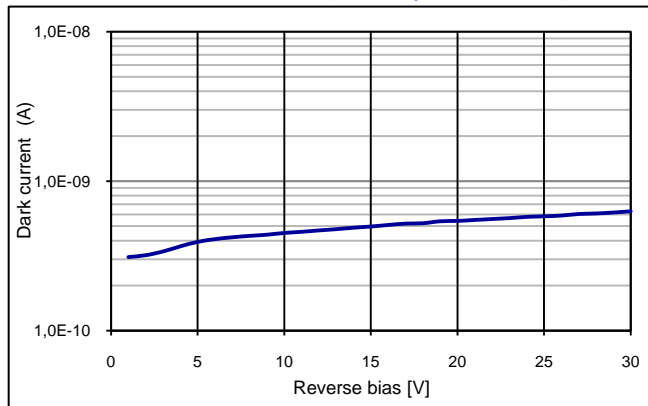


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Quantum efficiency (23 °C)

Capacitance as fct of reverse bias (23 °C; per element)

Dark current as fct of bias (23 °C; per element)

Package dimension:

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

Handling precautions:

- Soldering temperature max. 260 °C for 10 s. The device must be protected against solder flux vapour.
- Minimum pin length is 2 mm.
- For ESD protection standard precautionary measures are sufficient.
- For further questions please refer to document "Instructions for handling and processing".

Comments:

**Quasi-hermetic epoxy sealed flat window versions available, too:

18 µm gaps: #501416 (US-order 03-175)

42 µm gaps: #501417 (US-order 03-174)

Ask us for datasheets and more information.

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

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