
**Features**

- 5 mm<sup>2</sup> Quadrant PIN detector
- High sensitivity
- Small gap
- Low dark current

**Description**

Low dark current circular active area quadrant PIN photodiode with 4 x 1.22 mm<sup>2</sup> active area. Metal can type hermetic TO5 package with clear glass window.

**Application**

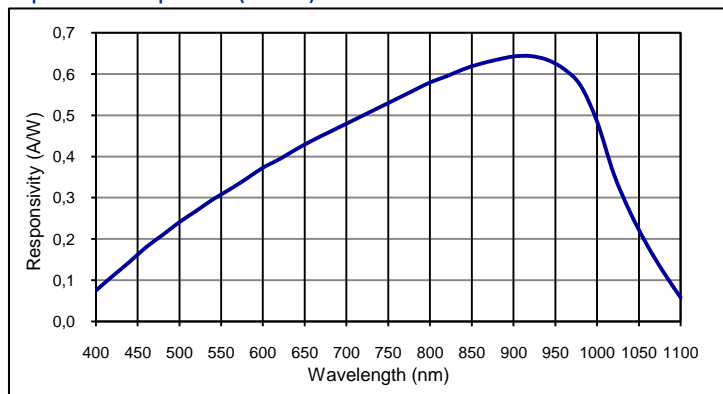
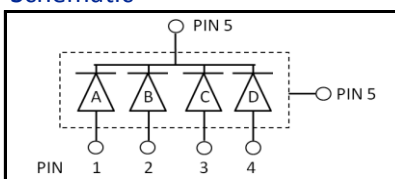
- Laser beam position sensor
- Autocollimators
- Optical tweezers
- Ellipsometers

**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
V <sub>max</sub>	Max reverse voltage		20	V
I <sub>PEAK</sub>	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 2520 (total)			μm
	Active area	per element	1.22			mm <sup>2</sup>
	Gap	between elements	24			μm
I <sub>D</sub>	Dark current	V <sub>R</sub> = 10 V; per element		0.2		nA
C	Capacitance	V <sub>R</sub> = 0 V; per element		20		pF
		V <sub>R</sub> = 10 V; per element		3		pF
	Responsivity	λ = 632 nm		0.4		A/W
		λ = 900 nm		0.64		A/W
	Uniformity of responsivity	V <sub>R</sub> = 10 V; λ = 880 nm; R <sub>L</sub> = 50 Ω		±1	±2	%
t <sub>R</sub>	Rise time	V <sub>R</sub> = 0 V; λ = 850 nm; R <sub>L</sub> = 50 Ω		2000		ns
		V <sub>R</sub> = 10 V; λ = 850 nm; R <sub>L</sub> = 50 Ω		20		ns
	Shunt Resistance	V <sub>R</sub> = 5 mV; per element	250	500		MΩ
	N.E.P.	V <sub>R</sub> = 5 V; λ = 900 nm; per element		1.3 E-14		W/√Hz
V <sub>BR</sub>	Breakdown voltage	I <sub>R</sub> = 2 μA	20	50		V

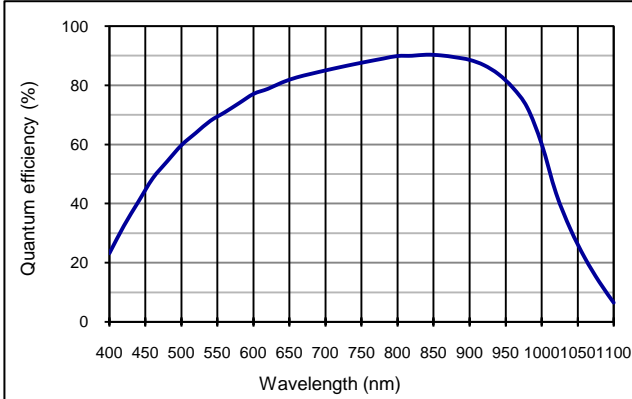
**European, International Sales:**


First Sensor AG  
 Peter-Behrens-Strasse 15  
 12459 Berlin  
 Germany  
 T +49 30 6399 2399  
 F +49 30 639923-752  
 sales.opto@first-sensor.com

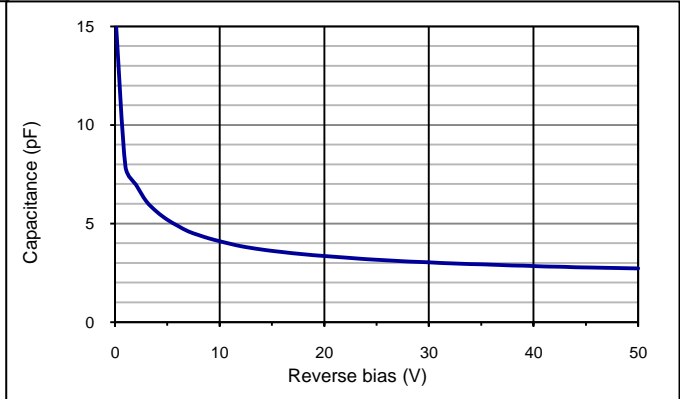
**USA:**


First Sensor Inc.  
 5700 Corsa Avenue #105  
 Westlake Village  
 CA 91362 USA  
 T +1 818 706 3400  
 F +1 818 889 7053  
 sales.us@first-sensor.com

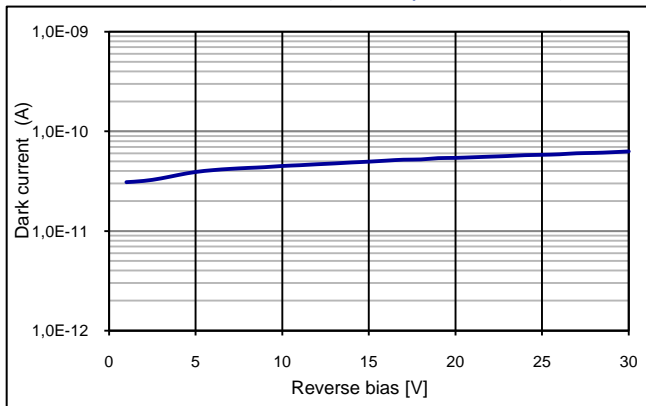
Quantum efficiency (23 °C)



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".

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

**European, International Sales:**



First Sensor AG  
 Peter-Behrens-Strasse 15  
 12459 Berlin  
 Germany  
 T +49 30 6399 2399  
 F +49 30 639923-752  
 sales.opto@first-sensor.com

**USA:**



First Sensor Inc.  
 5700 Corsa Avenue #105  
 Westlake Village  
 CA 91362 USA  
 T +1 818 706 3400  
 F +1 818 889 7053  
 sales.us@first-sensor.com