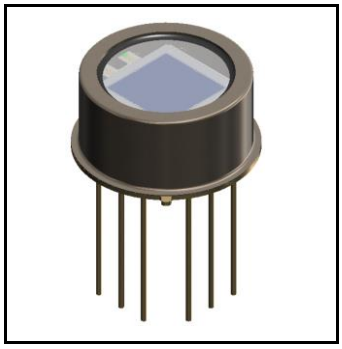
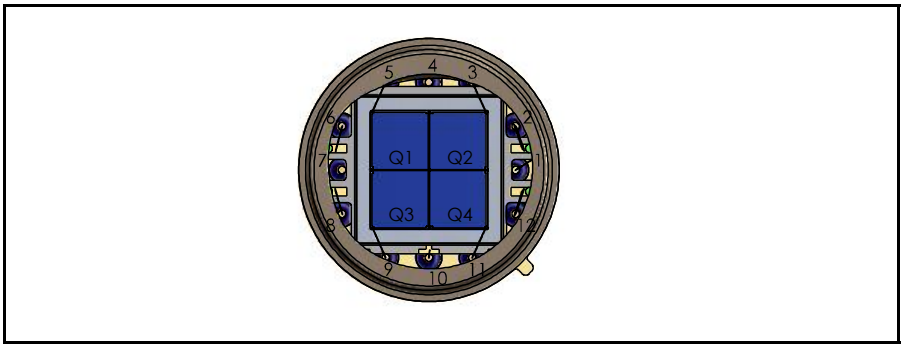
First Sensor





Features

- Quadrant detector
- Low dark current
- Fast rise time, low capacitance
- High QE at 1064 nm
- Including heater and temperature sensor

Description

Square active area quadrant PIN detector with 4 x 11 mm² active area and 70 µm gaps, optimized for 1064 nm. Metal can type hermetic, isolated TO package with ceramic heater and flat clear glass window.

Application

- 1064 nm laser detection
- High speed photometry
- NIR pulsed light sensor

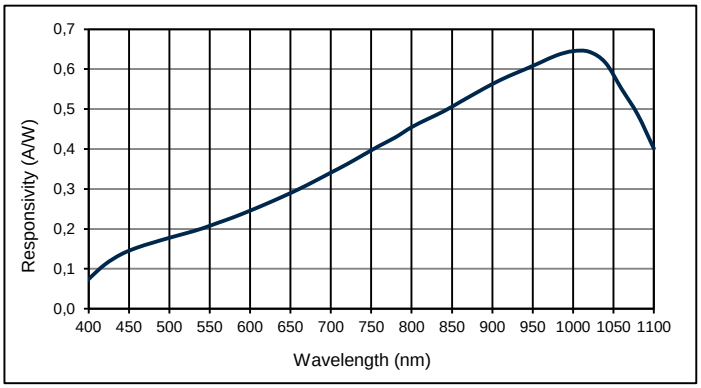
RoHS

2011/65/EU

Absolute maximum ratings

Symbol	Parameter	Min	Max	Unit
T_{STG}	Storage temp	-55	125	°C
T_{OP}	Operating temp	-40	85	°C
V_{OP}	Operating voltage		250	V
I_{PEAK}	Peak DC current		10	mA
p	Outside pressure		2	bar

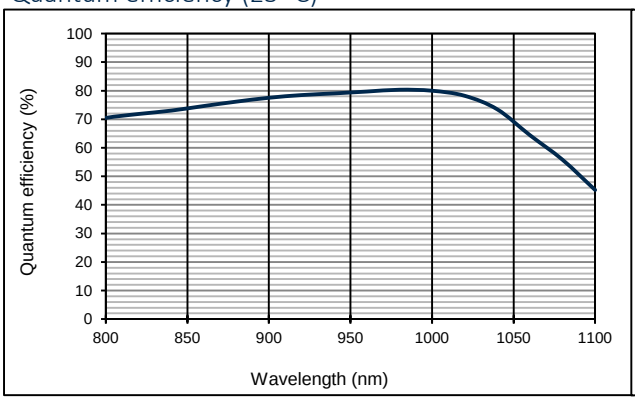
Spectral response (23 °C)



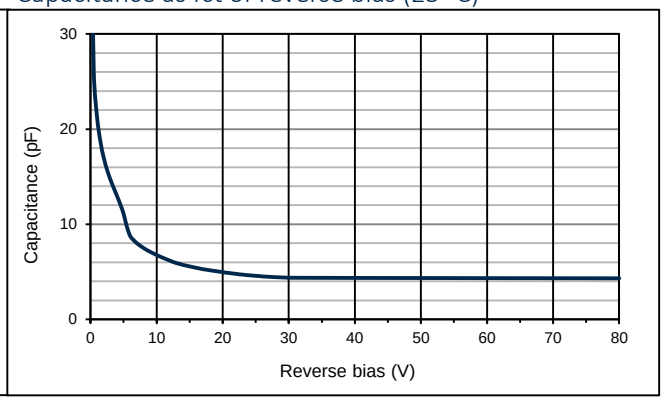
Electro-optical characteristics @ 23 °C

Symbol	Characteristic	Test Condition	Min	Typ	Max	Unit
	Active area	number of elements: 4 quadrants		6690 x 6690 (total)		µm
		per element		10.96		mm²
	Gap	between elements		70		µm
I_D	Dark current	V_R = 150 V, per element		8	15	nA
C	Capacitance	V_R = 150 V, per element		5	6	pF
	Responsivity	V_R = 150 V; λ = 1064 nm; R_L = 50 Ω	0.42	0.48	0.65	A/W
t_R	Rise time	V_R = 180 V; λ = 1064 nm; R_L = 50 Ω		10		ns
		180 V; 1064 nm; TIA terminated (R_L = 1 Ω)		5.5		ns
V_{BR}	Breakdown voltage	I_R = 2 µA	250			V
	Temperature coefficiant	Change of I_{PH} with temperature		1.07		%/K
	Cross talk	V_R = 150 V; λ = 1064 nm; R_L = 50 Ω		0.5	2	%
	Heating time	23°C to 70°C with 21V power supply	1	2	3	s
	Heater resistance	23°C	36	40	44	Ω
	Temperature sensor	PTC, TK = 3500 ± 200 ppm/K	9950	10000	10050	Ω
	N.E.P.	V_R = 150 V, λ = 1064 nm		1.1E-13		W/√Hz
FOV	Field of view			± 55		°

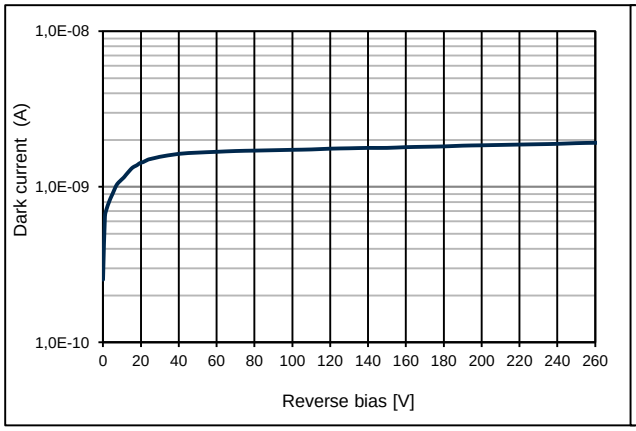
Quantum efficiency (23 °C)



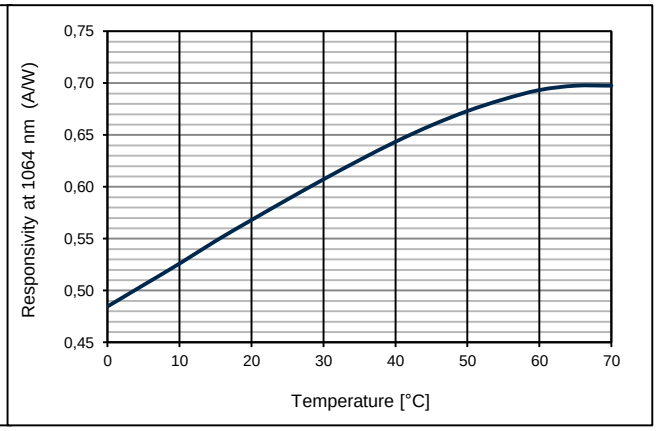
Capacitance as fct of reverse bias (23 °C)



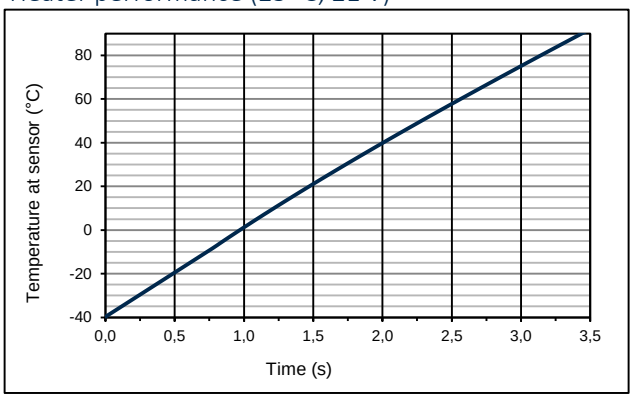
Dark current as fct of bias (23 °C)



Responsivity at 1064 nm as fct of temperature



Heater performance (23 °C, 21 V)



Package dimension:

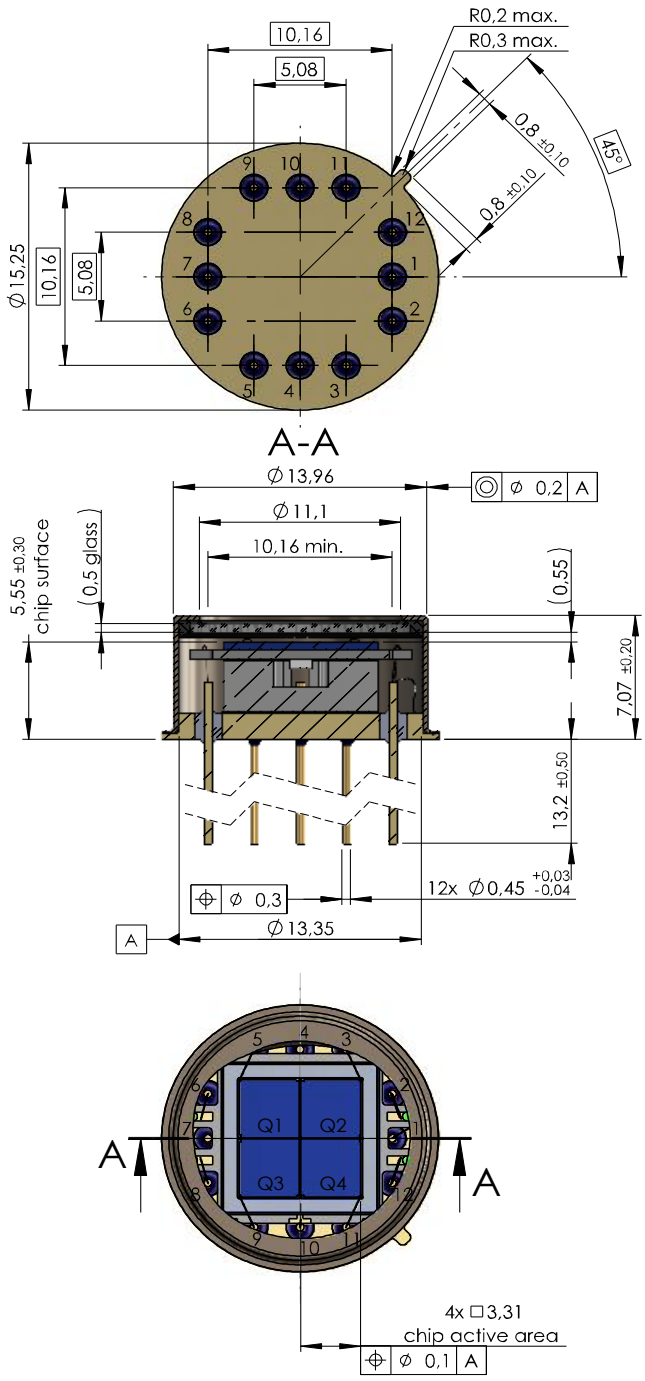
Small quantities: Foam pad, boxed (12 cm x 16.5 cm)

Source of origin:

This detector and its components are manufactured in Germany.

Technical Drawing

pin assignment												
pin	1	2	3	4	5	6	7	8	9	10	11	12
connection	case	heater 1	Q2	n. c.	Q1	temp. sensor 1	n. c.	temp. sensor 2	Q3	common cathode	Q4	heater 2



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

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

First Sensor:
3001275