

### Features

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

### Description

Circular active area quadrant PIN detector with 14 mm diameter and 70  $\mu\text{m}$  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
- Laser guidance

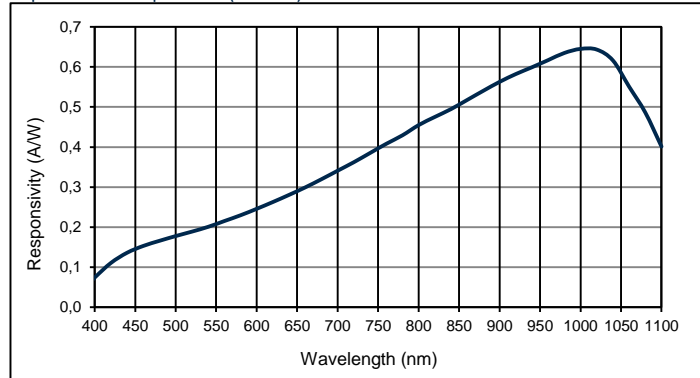
### RoHS

2011/65/EU

### Absolute maximum ratings

Symbol	Parameter	Min	Max	Unit
$T_{STG}$	Storage temp	-55	125	$^{\circ}\text{C}$
$T_{OP}$	Operating temp	-40	85	$^{\circ}\text{C}$
$V_{OP}$	Operating voltage		250	V
$I_{PEAK}$	Peak DC current		10	mA
p	Outside pressure		5	bar

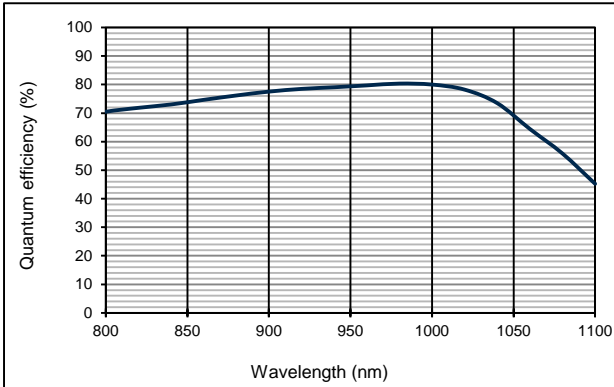
### Spectral response (23 $^{\circ}\text{C}$ )



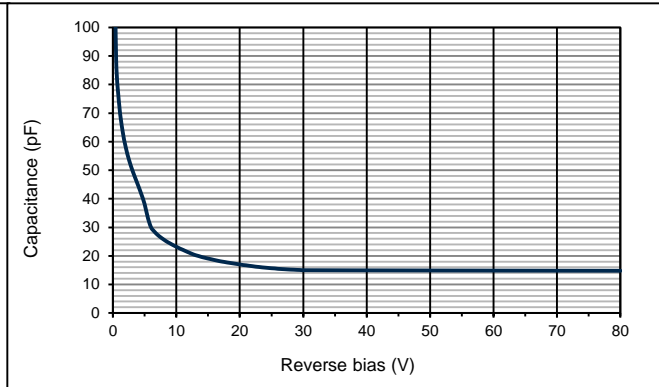
### Electro-optical characteristics @ 23 $^{\circ}\text{C}$

Symbol	Characteristic	Test Condition	Min	Typ	Max	Unit
	Active area	diameter		14		mm
		per element, number of elements: 4 quadrants		38.5		$\text{mm}^2$
	Gap	between elements		70		$\mu\text{m}$
$I_D$	Dark current	$V_R = 150\text{ V}$ , per element		10	30	nA
C	Capacitance	$V_R = 150\text{ V}$ , per element		14	20	pF
	Responsivity	$V_R = 150\text{ V}$ ; $\lambda = 1064\text{ nm}$ ; $R_L = 50\ \Omega$	0.42	0.48	0.65	A/W
$t_R$	Rise time	$V_R = 180\text{ V}$ ; $\lambda = 1064\text{ nm}$ ; $R_L = 50\ \Omega$		12		ns
		180 V; 1064 nm; TIA terminated ( $R_L = 1\ \Omega$ )		6		ns
$V_{BR}$	Breakdown voltage	$I_R = 2\ \mu\text{A}$	250			V
	Temperature coefficient	Change of $I_{PH}$ with temperature		1.07		%/K
	Cross talk	$V_R = 150\text{ V}$ ; $\lambda = 1064\text{ nm}$ ; $R_L = 50\ \Omega$		2		%
	Heating time	23 $^{\circ}\text{C}$ to 70 $^{\circ}\text{C}$ with 21V power supply		6		s
	Heater resistance	23 $^{\circ}\text{C}$	36	40	44	$\Omega$
	Temp. sensor resistance	PTC, TK = 3500 $\pm$ 200 ppm/K	9950	10000	10050	$\Omega$
	N.E.P.	$V_R = 150\text{ V}$ , $\lambda = 1064\text{ nm}$		1.2E-13		W/ $\sqrt{\text{Hz}}$
FOV	Field of view			$\pm 75$		$^{\circ}$

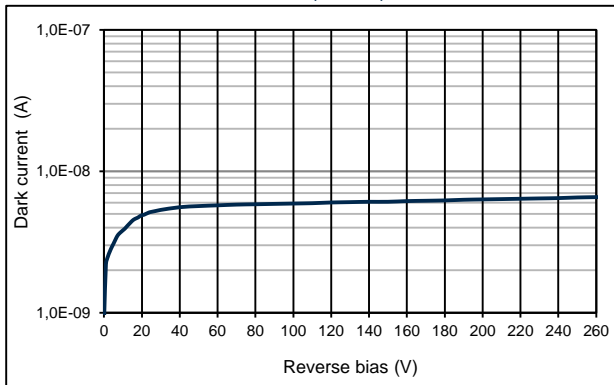
Quantum efficiency (23 °C)



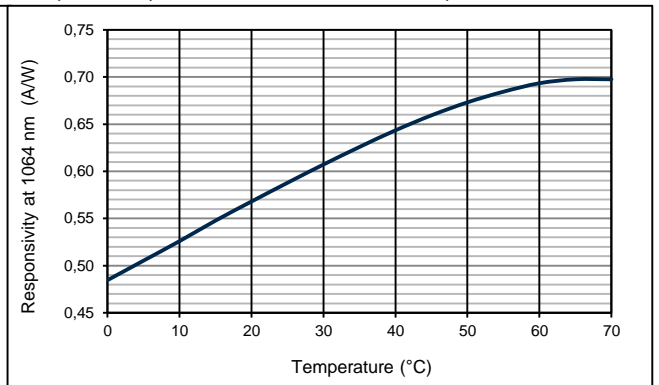
Capacitance as fct of reverse bias (23 °C)



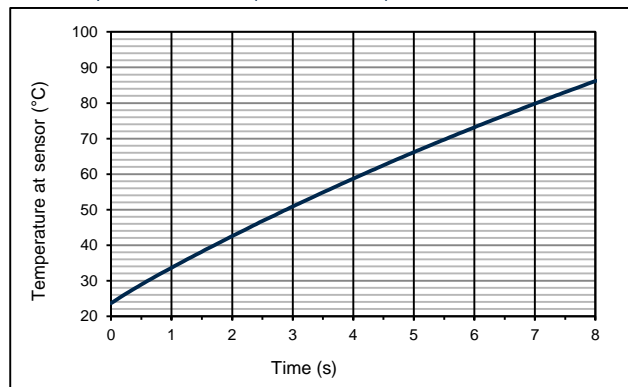
Dark current as fct of bias (23 °C)



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)

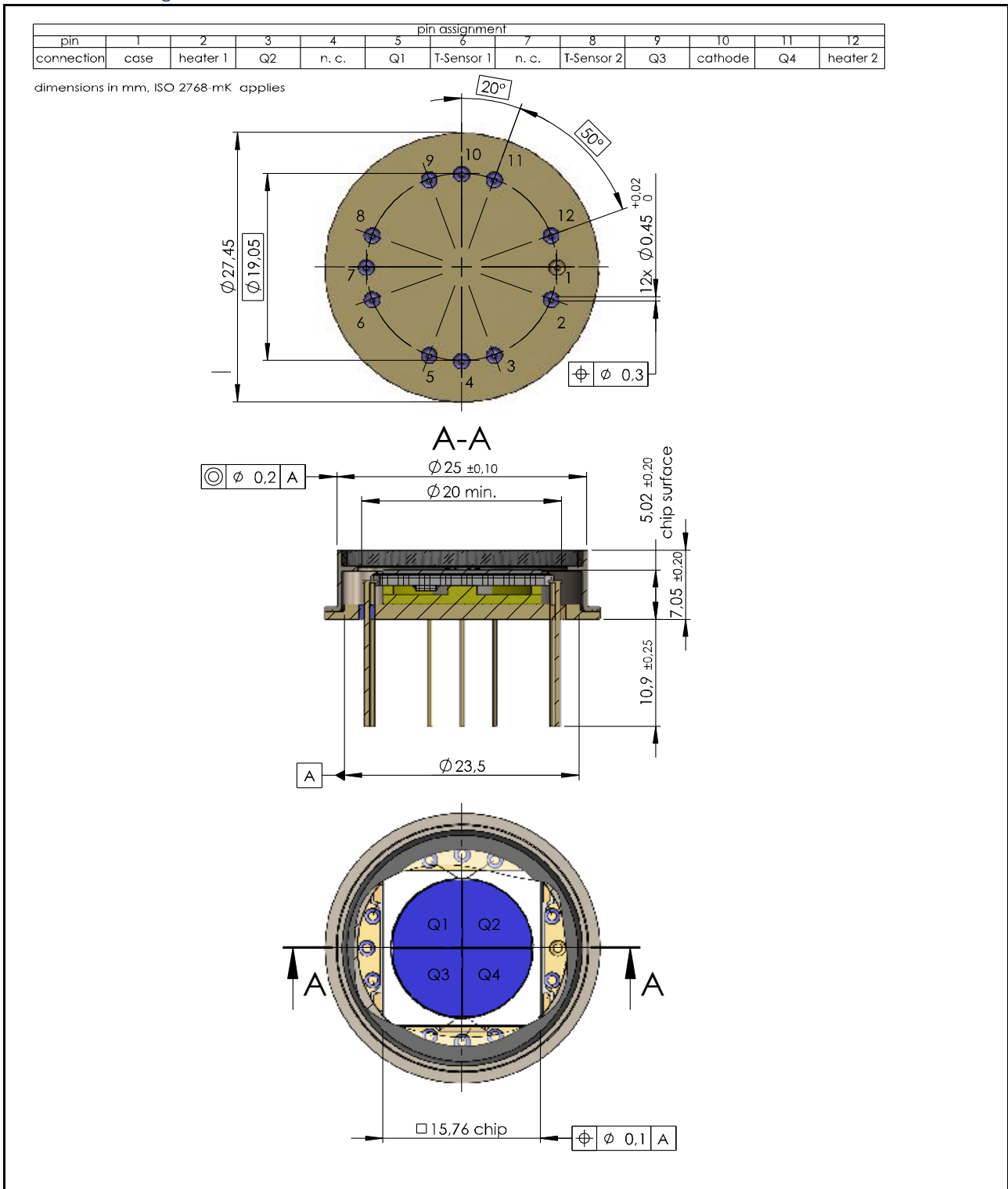
**Source of origin:**

This detector is manufactured in Germany and does not contain any ITAR-restricted components.

**Product family:**

The quadrant detector is also available without heater, please ask for part number 50079802.

## Technical Drawing



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