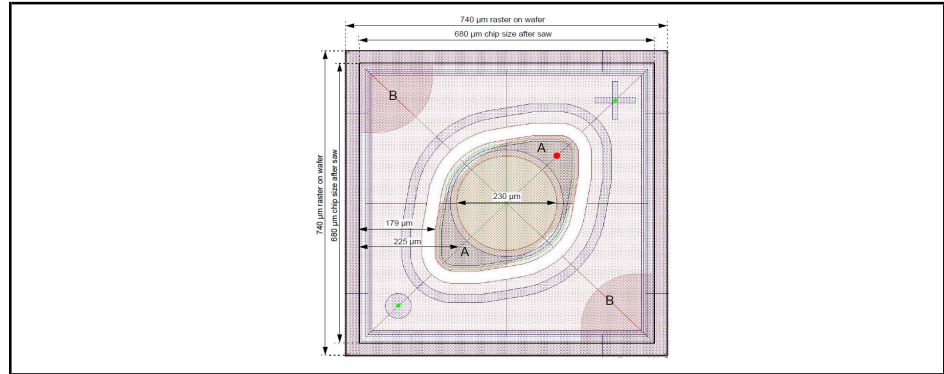
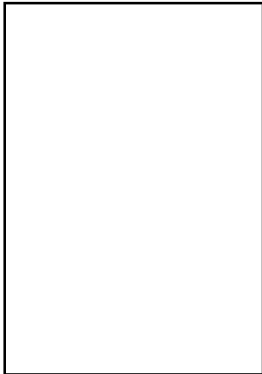


First Sensor 
is now part of



Preliminary for B - samples



Features

- APD with 0.04 mm² active area
- QE > 80% @ 750 nm - 910 nm
- High speed, low noise

Description

Small circular active area APD chip including two bond pads with NIR enhanced sensitivity.

Application

- LIDAR applications
- Laser range finder
- Laserscanner
- High speed photometry
- Medical equipment

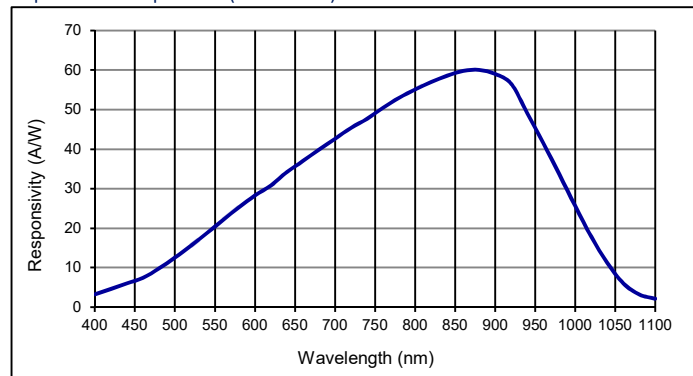
RoHS

2011/65/EU
2015/863

Absolute maximum ratings

Symbol	Parameter	Min	Max	Unit
T _{STG}	Storage temp	-55	125	°C
T _{OP}	Operating temp	-40	125	°C
M _{max}	Gain (I _{PO} = 1 nA)	200		
I _{PEAK}	Peak DC current		0.25	mA
	Soldering temp (10 sec)		250	°C

Spectral response (M = 100)

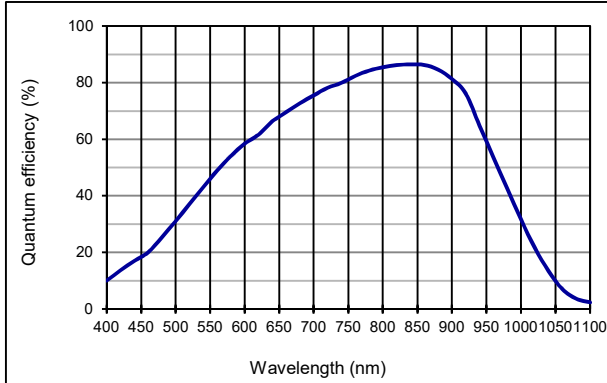


Electro-optical characteristics @ 23 °C

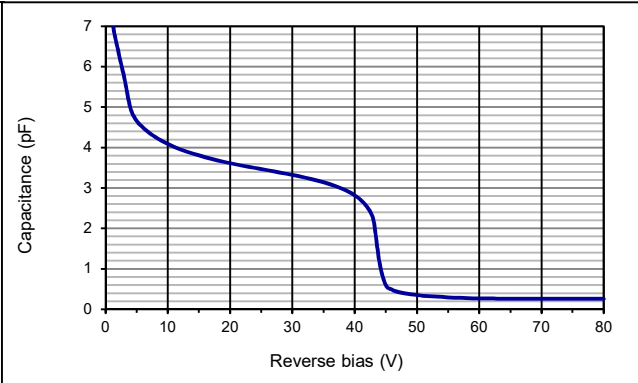
Symbol	Characteristic	Test Condition	Min	Typ	Max	Unit
	Chip size		680 x 680			µm
	Active area	Diameter	230			µm
	Active area		0.04			mm ²
	Die height		365	380	395	µm
	Bonding pad width	Backside common anode and topside cathode	100 x 130			µm
I _D	Dark current	M = 100		10	200	pA
C	Capacitance	M = 100, f = 100 kHz		0.3		pF
	Responsivity	M = 100, λ = 905 nm	52	58		A/W
t _R	Rise time	M = 100; λ = 905 nm; R _L = 50 Ω		0.9		ns
V _{BR}	Breakdown voltage*	I _R = 2 µA, V _{BR} - binning available	160		200	V
V _R	Bias voltage	M = 100	135		185	V
	Temperature coefficient	Change of V _{BR} with temperature		1.45		V/K

* ±2V measuring tolerance on upper and lower limits

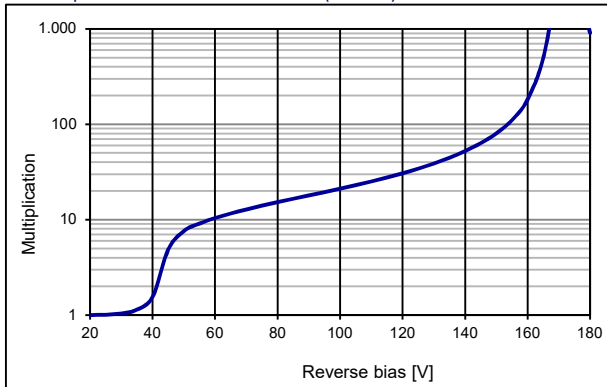
Quantum efficiency (23 °C)



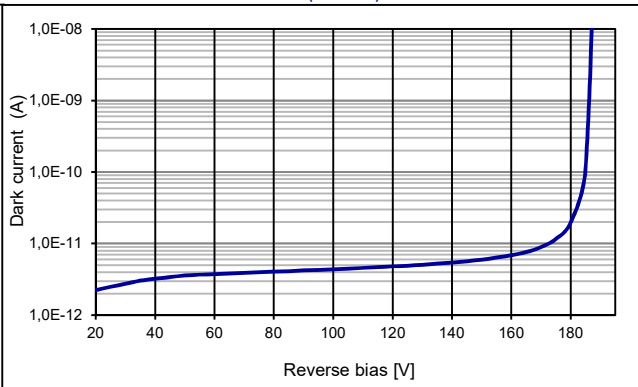
Capacitance as fct of reverse bias (23 °C)



Multiplication as fct of bias (23 °C)



Dark current as fct of bias (23 °C)



Handling:

Please refer to document "Instructions for handling and processing"

Package Dimensions:

Frame with blue foil.

Inspection:

Dark current (I_D), breakdown voltage (V_{BR}) and forward voltage (U_F) will be tested on 100% of chips. Every chip will undergo an optical inspection. Optical inspection according to First Sensor error catalogue "Optical inspection of simple diode structures".

Technical Drawing

