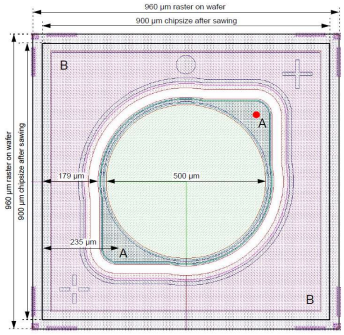
Preliminary for C - samples



Features

- APD with 0.2 mm² active area
- QE > 80% @ 750 nm - 910 nm
- High speed, low noise

Description

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

Application

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

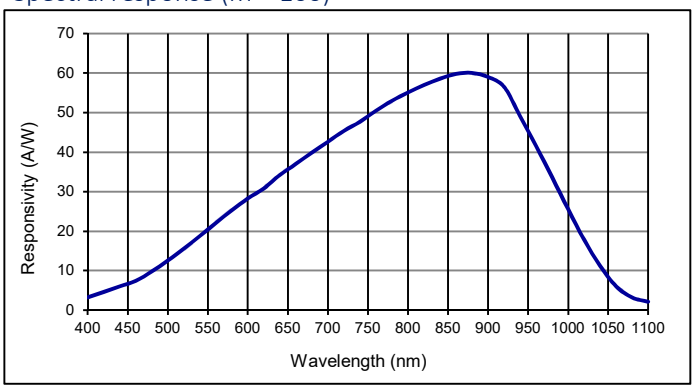
RoHS

2011/65/EU

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_{P0} = 1 nA)	200		
I_{PEAK}	Peak DC current		0.25	mA

Spectral response (M = 100)



Electro-optical characteristics @ 23 °C

Symbol	Characteristic	Test Condition	Min	Typ	Max	Unit
	Chip size			900 x 900		µm
	Active area	Diameter		500		µm
	Active area			0.196		mm²
	Die height			380		µm
	Bonding pad size	Backside common anode and topside cathode		105		µm
I_D	Dark current	M = 100			0.5	nA
C	Capacitance	M = 100, f = 100 kHz		0.6		pF
	Responsivity	M = 100, λ = 905 nm	52	58		A/W
t_R	Rise time	M = 100 V; 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

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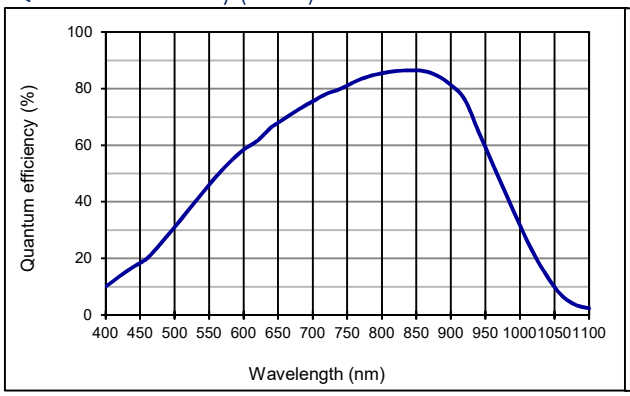
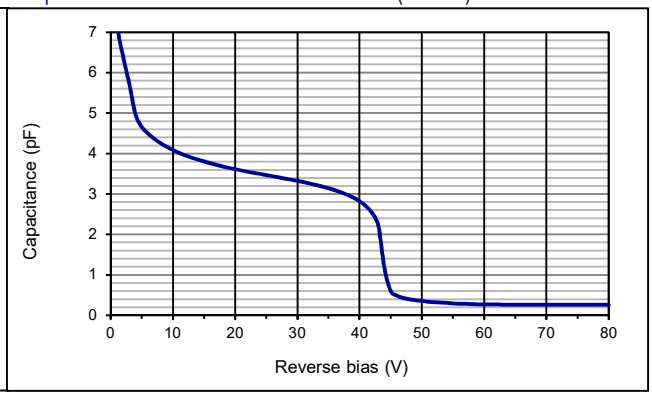
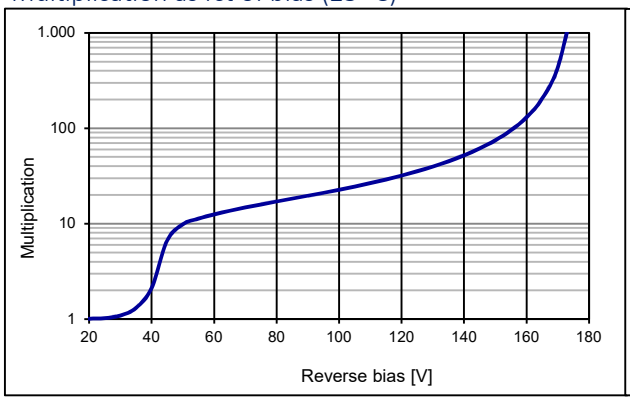
Quantum efficiency (23 °C)



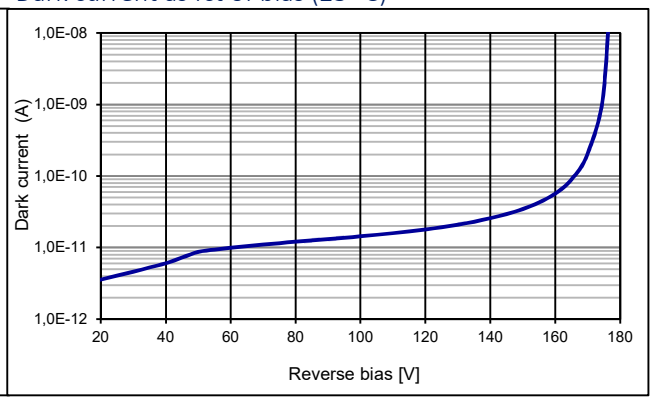
Capacitance as fct of reverse bias (23 °C)



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".

Preliminary for C - samples

Technical Drawing