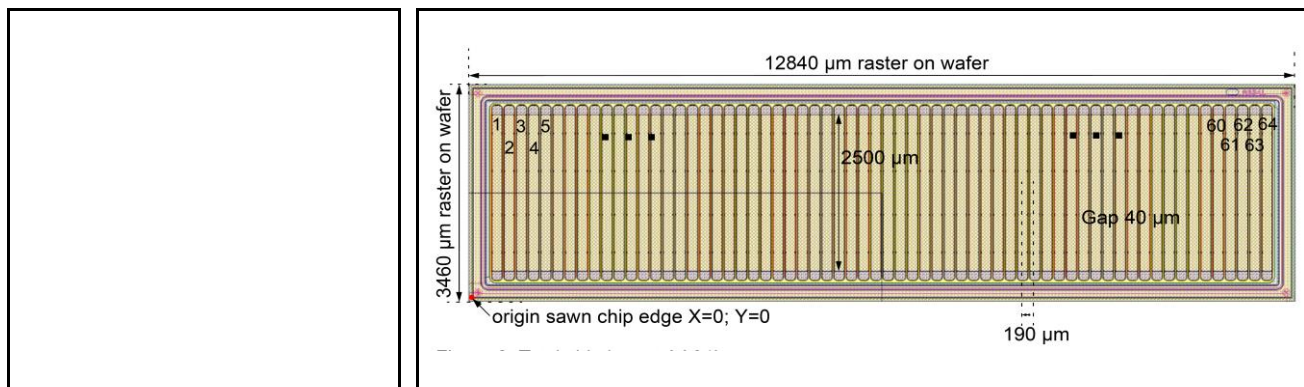


Preliminary for A - samples



Features

- 64 element APD array
- High QE >80% for $\lambda = 760-910$ nm
- High speed, low noise

Description

Matrix APD array for NIR detection.

Application

- LIDAR applications

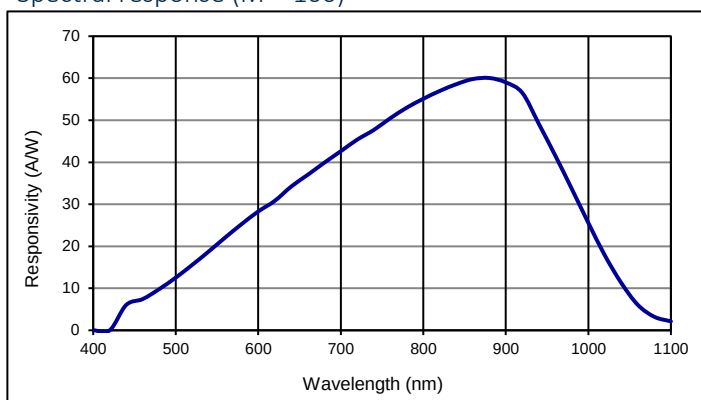
RoHS

2011/65/EU

Absolute maximum ratings

Symbol	Parameter	Min	Max	Unit
T_{STG}	Storage temp	-40	125	°C
T_{OP}	Operating temp	-40	125	°C
M_{max}	Gain ($I_{P0} = 1$ nA)	200		
I_{PEAK}	Peak DC current (linearity)		0.25	mA

Spectral response (M = 100)



Electro-optical characteristics @ 23°C

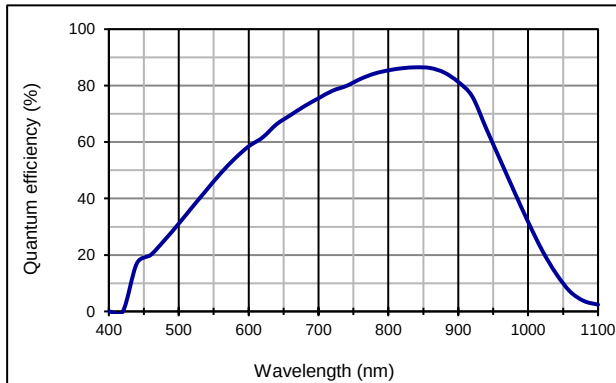
Symbol	Characteristic	Test Condition	Min	Typ	Max	125°C**	Unit
	No of elements		64				
	Chip size		12840 x 3460				μm
	Active area		150 x 2500				μm
	Gap; Pitch		40 ; 190				
I_D	Dark current	M = 50, per element		0.25	1.5	1500	nA
C	Capacitance	M = 50, per element			1.5		pF
	Responsivity	M = 100; $\lambda = 905$ nm	52	58			A/W
t_R	Rise time	M = 100; $\lambda = 905$ nm; $R_L = 50 \Omega$			1.5		ns
V_{BR}	Breakdown voltage	$I_R = 10 \mu A$	160		240	400	V
	Temperature coefficient	U_{br}		1.49			V/K
	Cross talk suppression*	DC, $\lambda = 905$ nm		50			dB
	Gain uniformity	M = 50		± 15	± 30		%

* middle of pixel, spot size = 10 μm diameter, optical power = 10 nW/mm²

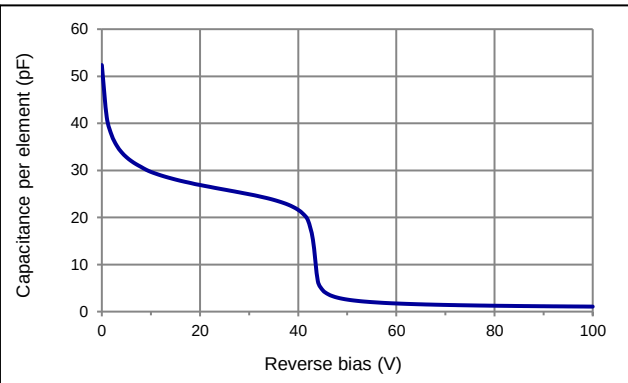
**maximal value

Preliminary for A - samples

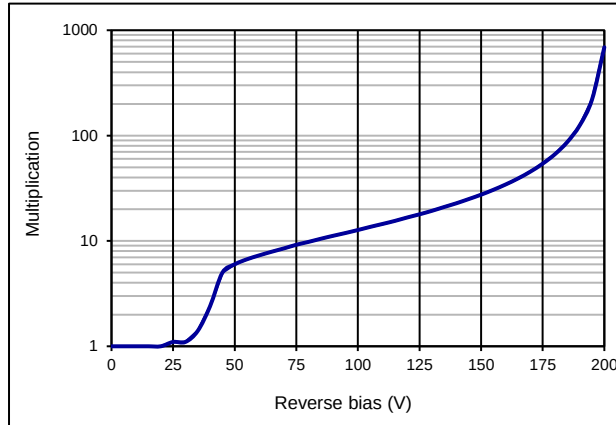
Quantum efficiency (23 °C)



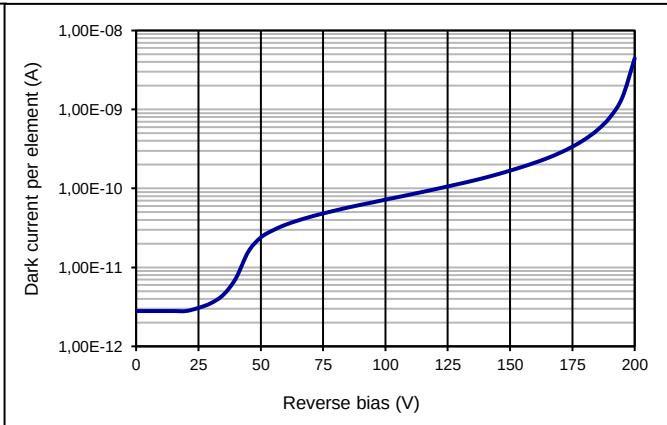
Capacitance as fct of reverse bias (23 °C)



Multiplication as fct of reverse bias (23 °C)



Dark current as fct of reverse bias (23 °C)



Handling:

Please refer to document "Instructions for handling and processing"

Application hints:

Please refer to document: "application-note-apd-array"

Delivery form:

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 arrays".