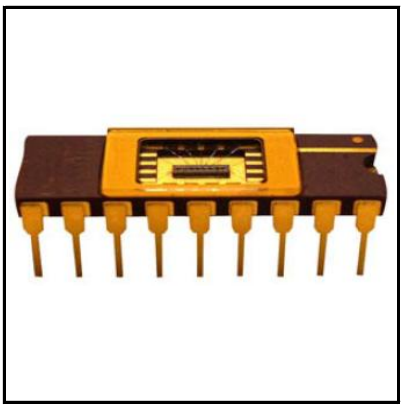
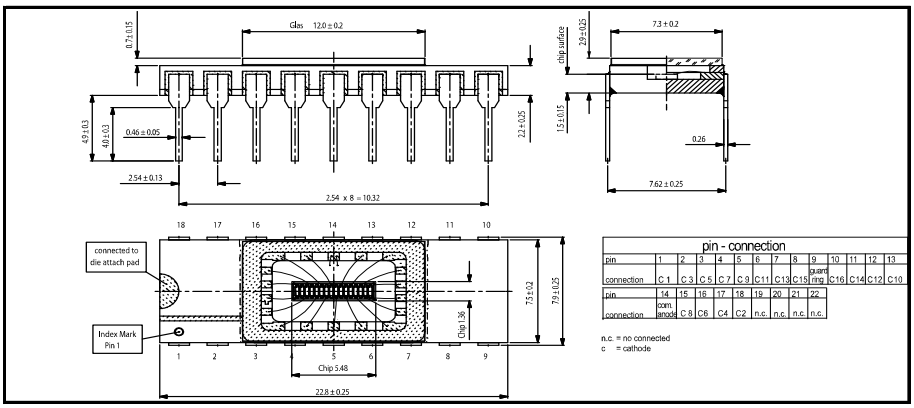
First Sensor APD Array Data Sheet

Part Description 16AA0.13-9 THD

Order # 500038

Version 20-06-11





Features

- 16 element APD array
- High QE >80% for λ = 760-910 nm
- High speed, low noise
- High uniformity, low cross talk

Description

Matrix APD array for NIR detection. Non-hermetic ceramic through hole package with soldered glass lid.

Application

- LIDAR range finder
- Lidar ACC
- Laser scanner

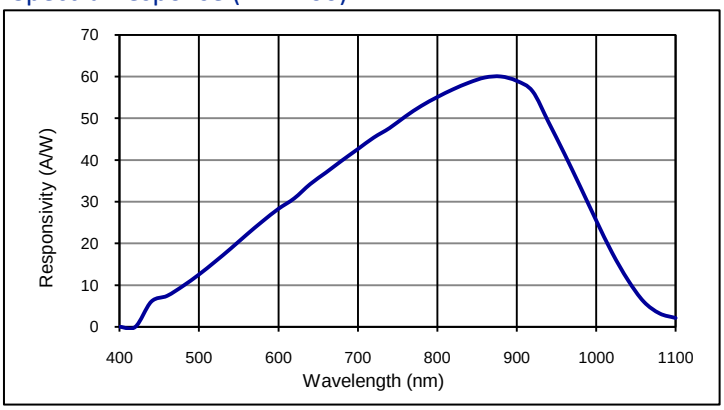
RoHS

2002/95/EC

Absolute maximum ratings

Symbol	Parameter	Min	Max	Unit
T_{STG}	Storage temp	-60	100	°C
T_{OP}	Operating temp	-20	80	°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
	No of elements			16		
	Active area			648 x 208		µm
	Gap; Pitch			112 ; 320		µm
I_D	Dark current	M = 50; λ = 880 nm, per element		1.0		nA
C	Capacitance	M = 50, per element		0.5		pF
	Responsivity	M = 100; λ = 905 nm	55	60		A/W
t_R	Rise time	M = 100; λ = 905 nm; R_L = 50 Ω		2		ns
V_{BR}	Breakdown voltage	I_R = 2 µA	100	300	400	V
	Temperature coefficient			1.45		V/K
	Cross talk	λ = 905 nm		50		dB
	Photo current uniformity	M = 50		± 5	± 20	%
	Dark current uniformity	M = 50		± 5	± 20	%

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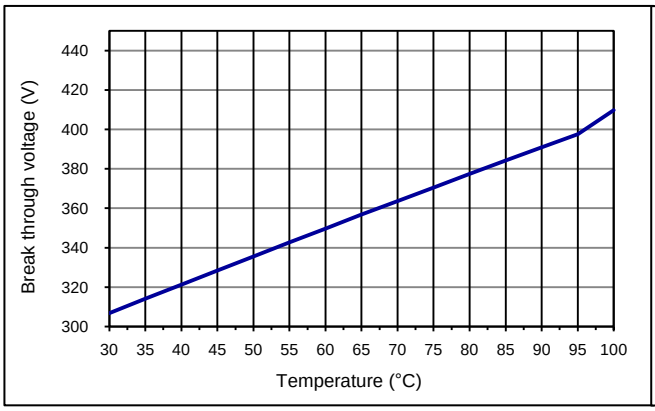
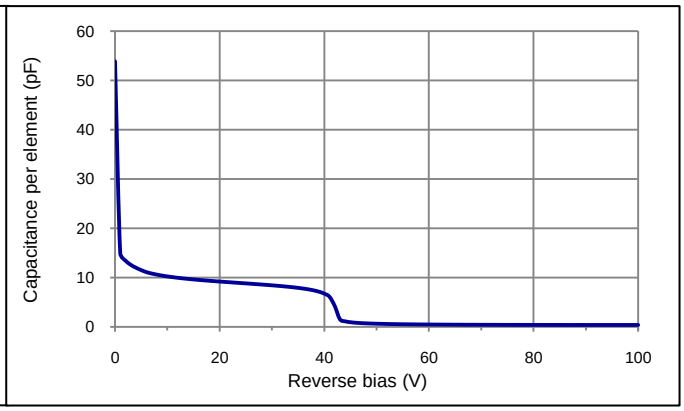
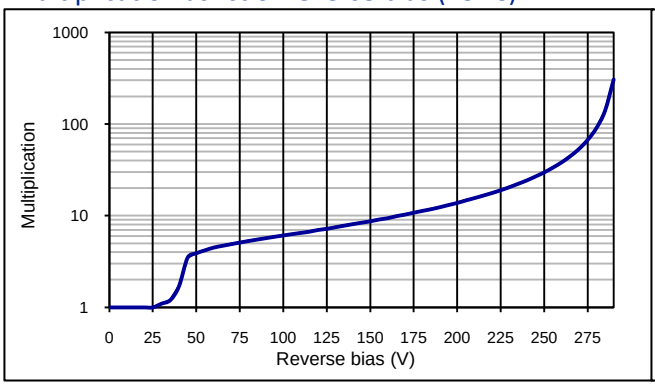
U_{br} as fct of temperature (23°C)



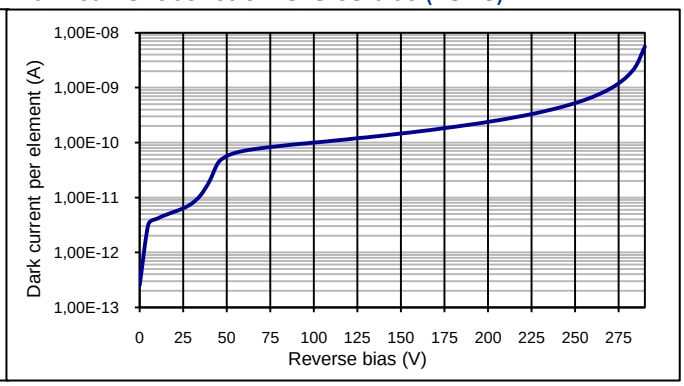
Capacitance as fct of reverse bias (23 °C)



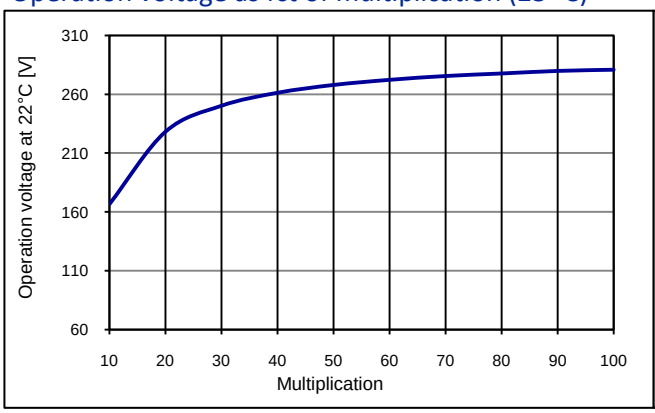
Multiplication as fct of reverse bias (23 °C)



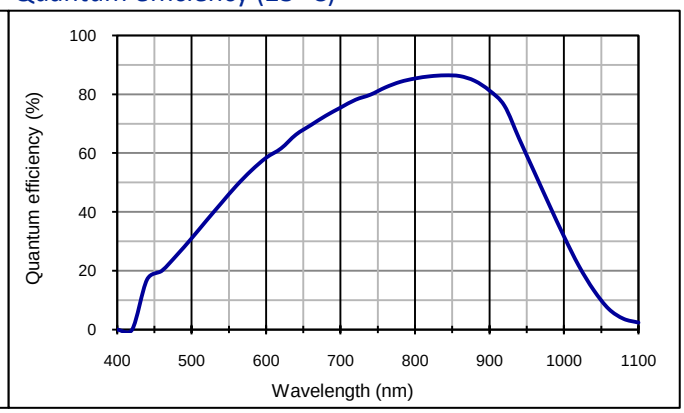
Dark current as fct of reverse bias (23 °C)



Operation voltage as fct of multiplication (23 °C)



Quantum efficiency (23 °C)



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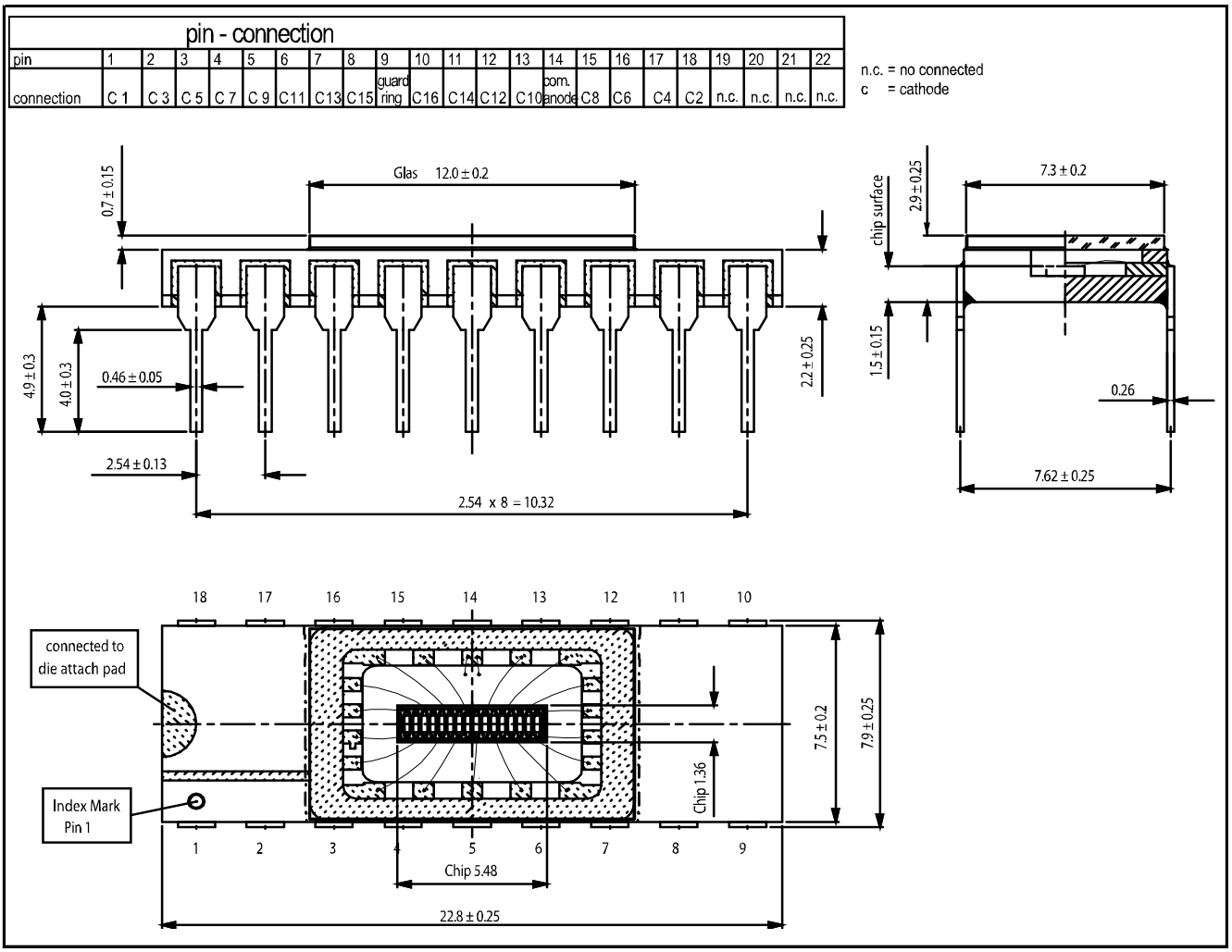
Technical Drawing, Package: THD Dil18 with soldered glass lid



Package dimension

Small quantities: Chips on foam pad, boxed (12 cm x 16.5 cm)

Handling:

Please refer to document "Instructions for handling and processing"
Please consider ESD protection while handling.

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

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