

Features

- 16 element APD array with NTC
- High QE >80% for $\lambda = 760-910$ nm
- High speed, low noise
- High uniformity, low cross talk

Description

Matrix APD array for NIR detection. Hermetic ceramic SMD package with soldered glass lid and temperature control device (NTC).

Application

- LIDAR range finder
- Lidar ACC
- Laser scanner

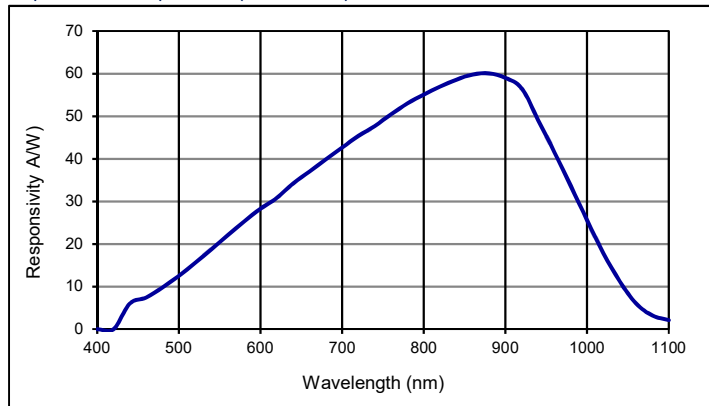
RoHS

2011/65/EU

Absolute maximum ratings

Symbol	Parameter	Min	Max	Unit
T_{STG}	Storage temp	-40	100	°C
T_{OP}	Operating temp	-20	70	°C
M_{max}	Gain ($I_{PO} = 1$ nA)	200		
I_{PEAK}	Peak DC current		0.25	mA

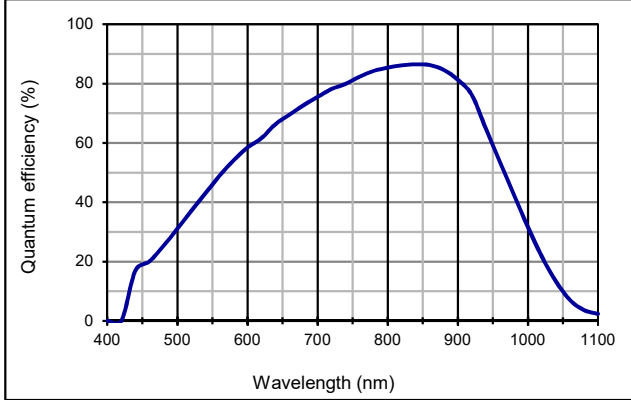
Spectral response (M = 100)



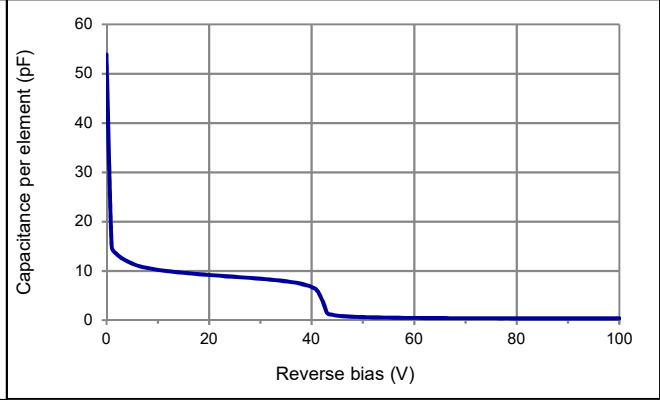
Electro-optical characteristics @ 23°C

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; $\lambda = 880$ nm, per element		1.0		nA
C	Capacitance	M = 50, per element, f = 100 kHz		0.5		pF
	Responsivity	M = 100; $\lambda = 905$ nm	55	60		A/W
t_R	Rise time	M = 100; $\lambda = 905$ nm; $R_L = 50 \Omega$		2		ns
V_{BR}	Breakdown voltage	$I_R = 2 \mu\text{A}$	160		240	V
	Temperature coefficient			1.45		V/K
	Cross talk	$\lambda = 905$ nm		50		dB
	Photo current uniformity	M = 50		± 5	± 20	%
	Dark current uniformity	M = 50		± 5	± 20	%
	Resistance of NTC	T = 25 °C		10		k Ω
	Alpha value of NTC	T = 25 °C		-4.39		%/°C
	Beta value 25/85 of NTC	T = 25 °C		3976		K

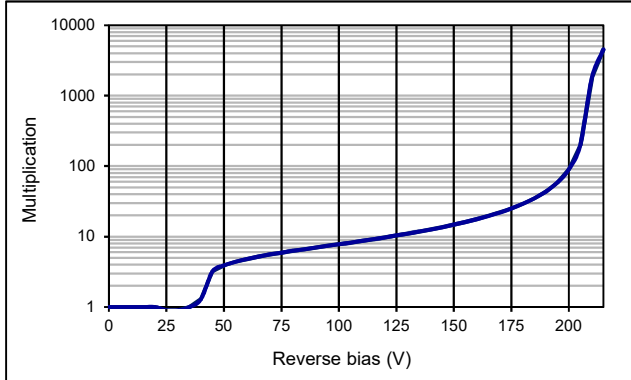
Quantum efficiency (23 °C)



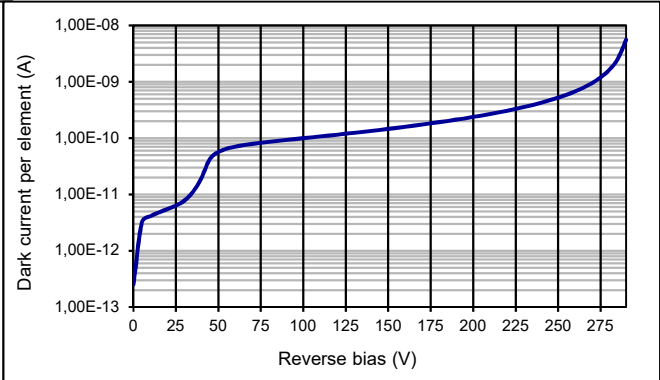
Capacitance as fct of reverse bias (23 °C)



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"
Please consider ESD protection while handling.

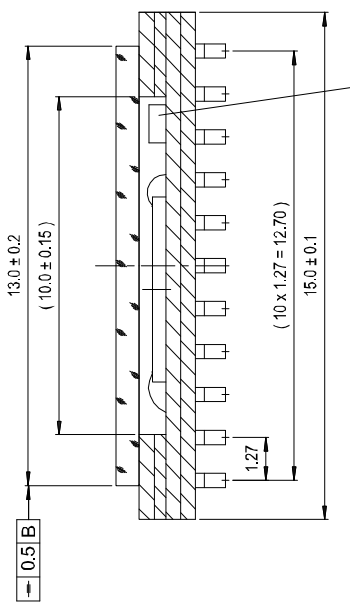
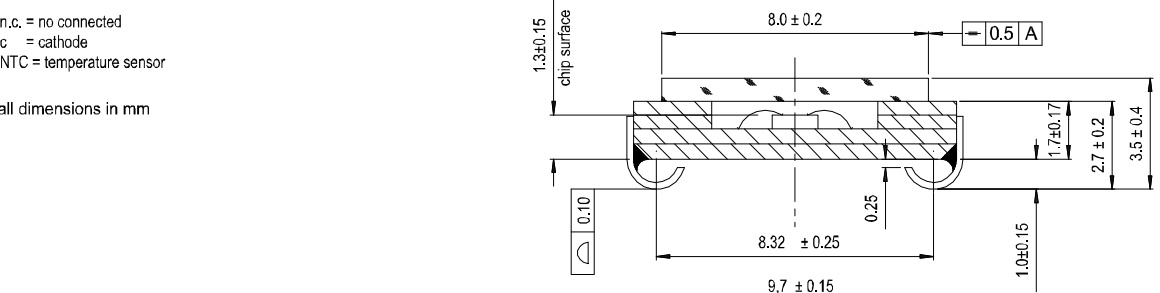


Technical Drawing, Package: SOJ22 with soldered glass lid

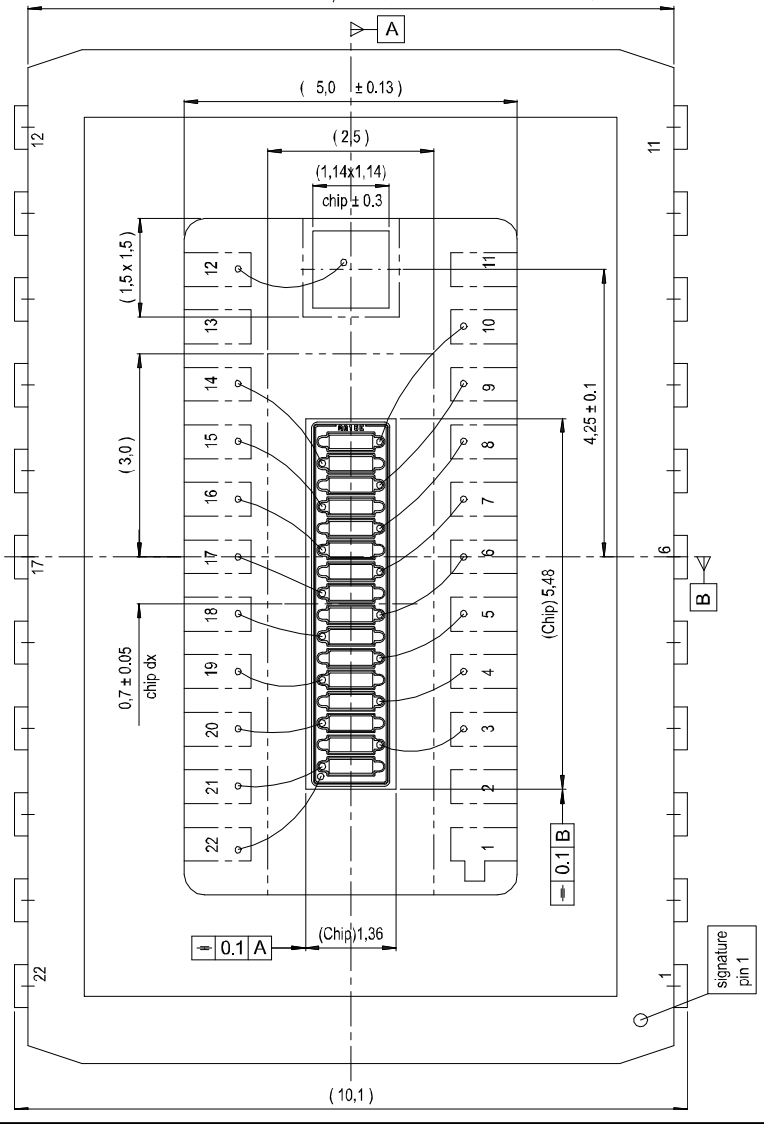
pin - connection																						
pin	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
connection	com. anode	n.c.	C 2	C 4	C 6	C 8	C 10	C 12	C 14	C 16	NTC	NTC	n.c.	C 15	C 13	C 11	C 9	C 7	C 5	C 3	C 1	guard ring

n.c. = no connected
 c = cathode
 NTC = temperature sensor

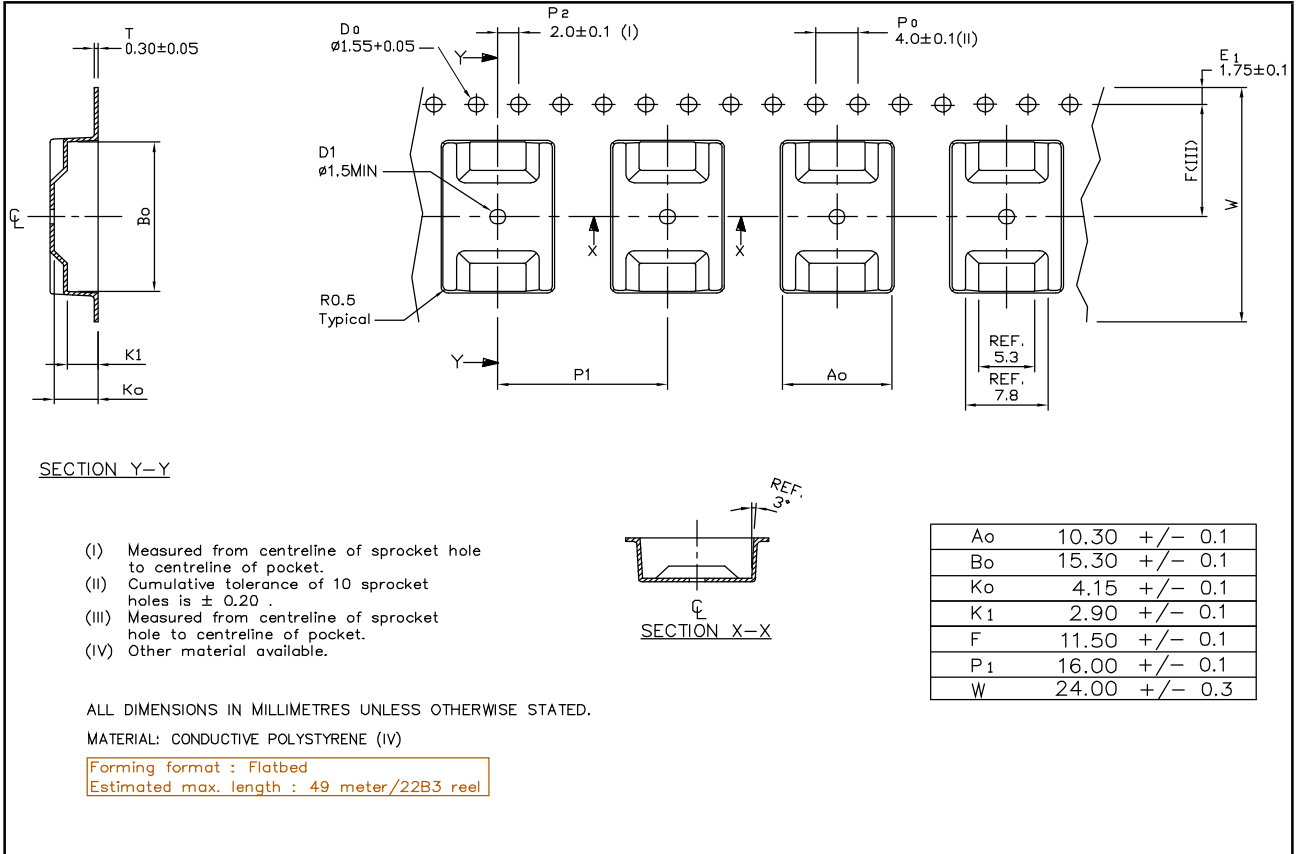
all dimensions in mm



Temp. Sensor (NTC)



Package dimension



For smaller quantities chip trays are available (16 pcs per tray)