



10G InGaAs Avalanche Photodiode W/ TIA

Description

The A10-TO is a high sensitivity 10G APD-TIA receiver in a pigtail fiber coupled TO package. It includes a 10G avalanche photodiode with a high gain TIA in a hermetically sealed package.

Features

- Dark Current ~ 25 nA (typical)
- High Sensitivity ~28 dBm
- Terminal Capacitance 1 pF at VBR_{90%}
- 8 GHz Cutoff Frequency
- 4K Ohm Transimpedance Gain
- Ability to choose desired optical connector.
- Ability to choose desired fiber length.



Applications

- 10G RFoF
- 10G Base-L Ethernet
- Fiber Optic Sensors



Electro-Optical Characteristics ($T_{op} 23 \pm 3^{\circ}C$, unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Supply Voltage	V_{cc}		3.3	3.6	V	
Supply Current	I_{cc}		26	35	mA	$V_{cc} = 3.3 V$
Response Spectrum	λ	1100		1650	nm	$V_{cc} = 3.3 V$
Bandwidth	BW		8		GHz	-3 dB bandwidth
Overload	OL	2.2			dBm	$V_{cc} = 3.3 V$
Sensitivity	Sen			-27	dBm	25.78 Gbps, 1310 nm, ER = 4 dB, BER = 10^{-5}
Optical Return Loss	ORL			-27	dB	CW = 1310 nm
RSSI Offset Current	I_{RSS}			100	nA	$V_{cc} = 3.3 V$
Responsivity	R	0.7	0.8		A/W	1310 nm, 50 % VBR, M=2, Pin -20 dBm
Dark Current	I_d		25	100	nA	VBr
Operation Current	I_{op}		6		uA	
Output Impedance	Z_o		100			Differential
Maximum Output Voltage	V_o		300		mV _{p-p}	Differential
Low Frequency Cutoff	F_{low}	25	100		KHz	

Absolute Maximum Ratings

Parameter	Symbol	Condition	Min.	Max.	Unit
Reverse Voltage	V_r			40	V
Forward Current	I_F			8	mA
Reverse Current	I_R			0.5	mA
Optical Input power	P_{in}			10	mW
Storage Temperature	T_{stg}		-25	90	$^{\circ}C$
Storage Humidity	H_{stg}			85	% r.H.
Operating Temperature	T_{op}		-10	80	$^{\circ}C$
Soldering Temperature	T_{st}	60 sec		200	$^{\circ}C$
ESD Susceptibility		HBM	100		V

Operating at maximum ratings for a prolonged period will cause damage to the device.



Pin Configuration

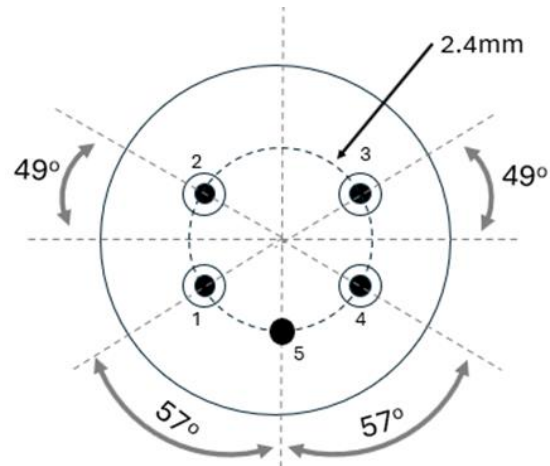


Fig 1A: Bottom View

Pin Number	Function
1	Dout (+)
2	VCC
3	VAPD
4	Dout (-)
5	GND

Table 1: Device Pin out

Device Dimensions

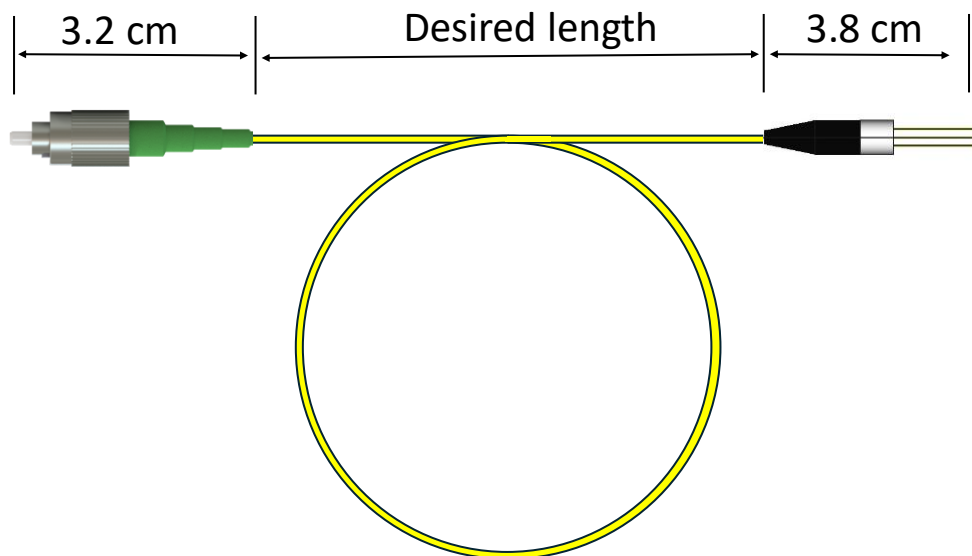
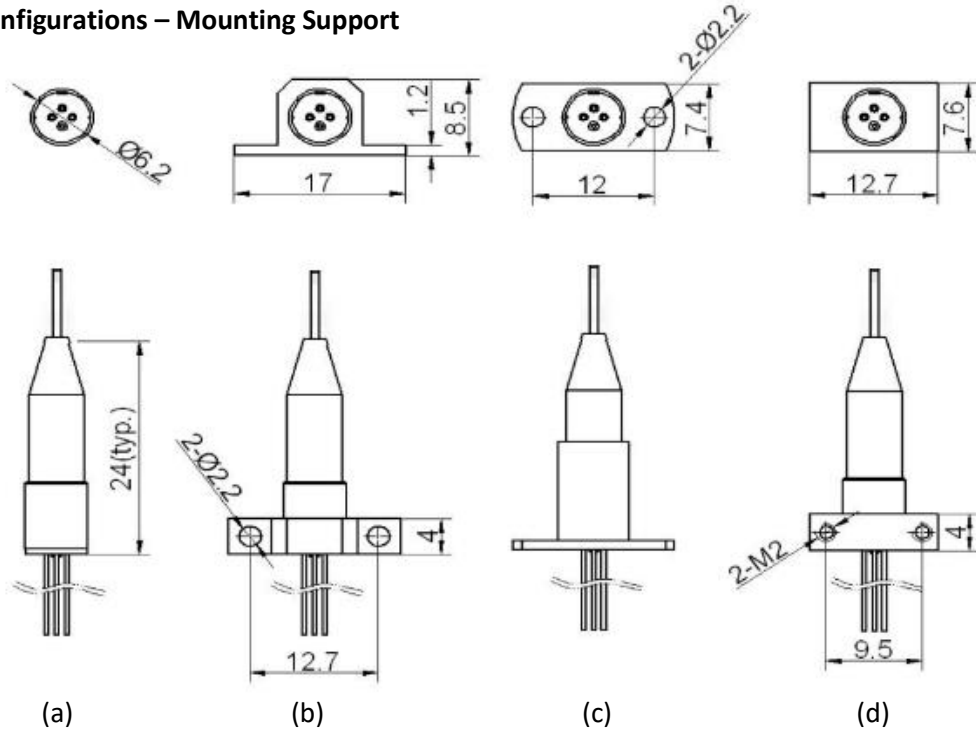


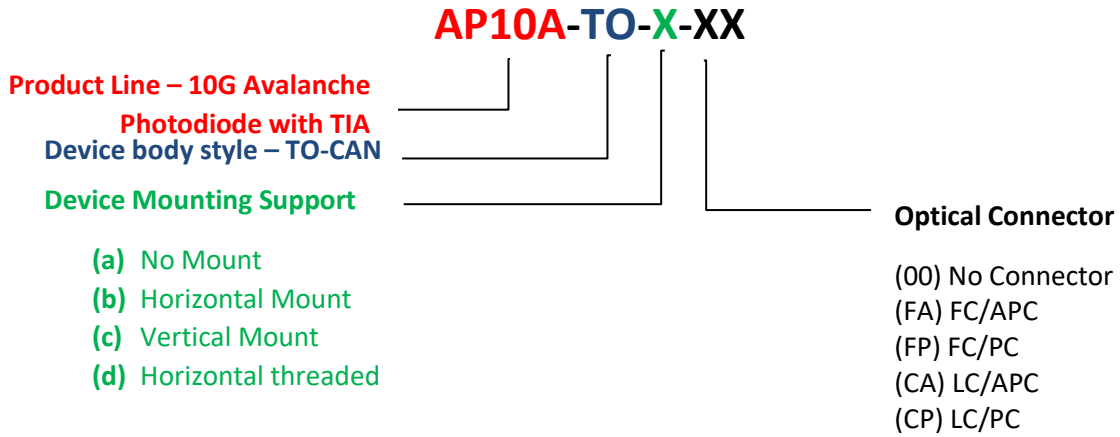
Fig 2: Device mechanical drawing. (All units in mm). Fiber and connector size differs based on build configuration.



Build Configurations – Mounting Support



Device Nomenclature



- (a) No Mount
- (b) Horizontal Mount
- (c) Vertical Mount
- (d) Horizontal threaded



Inquiry Information

Sales: All inquiries regarding sales please contact Sales@NuPhotonics.com

General: If you are interested in a custom solution, general information, or engineering related information please contact Inquiry@NuPhotonics.com

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