



## 2.5G Inline Tap Photodiode

### Description

NuPhotonics offers an inline optical power monitor. Based on a tried-and-true technology, these power taps provide a way to easily measure the power through an optical fiber. These devices are ideal to monitor power in real time. Telcordia standards GR1221 compliant.

### Features

- Dark Current  $\sim 1$  nA
- Spectral Noise Density  $\sim 1 \frac{pA}{\sqrt{Hz}}$
- Terminal Capacitance 0.5 pF at VBR<sub>90%</sub>
- 2.5 GHz Cutoff Frequency
- Ability to choose desired optical connector.
- Ability to choose fiber length
- Custom Tap Ratios available



### Applications

- Power monitoring
- Optical Power Control Devices
- Channel Balancing



**Electro-Optical Characteristics ( $T_{op}$  23 ± 3°C, unless otherwise specified)**

Parameter	Symbol	Min.	Typ.	Max	Unit	Notes
Reverse Breakdown Voltage	VBR		5	15	V	ID = 100
Temperature Coefficient reverse breakdown voltage	$\delta$		0.2		%/°C	
Response Spectrum	$\lambda$	1250		1610	nm	
Dark Current	ID		0.5	3	nA	Taken at 90% VBR
Multiplied Dark Current	IDM		1	3	nA	M = 2 to 10
Terminal Capacitance	Ct		0.35		Pf	Taken at 90% VBR at f = 1 MHz
Cut-Off Frequency	fC		2.5		GHz	M = 10
Responsivity	S		0.009		A/W	$\lambda = 1310$ nm , M = 1, 1/99% Tap Ratio
			0.01			$\lambda = 1550$ nm , M = 1, 1/99% Tap Ratio
Optical Return Loss	ORL	45			dB	SMF
Spectral Noise Density	SN	0.2	0.5	1.5	$\frac{pA}{\sqrt{Hz}}$	Taken at M = 40, 50, and 60 with DC source
Wavelength Dependent Loss	WDL		0.3		dB	
Polarization Dependent Loss	PDF		0.1	0.15	dB	

**Absolute Maximum Ratings**

Parameter	Symbol	Condition	Min.	Max.	Unit
Reverse Voltage	$V_r$			15	V
Forward Current	$I_f$			8	mA
Reverse Current	$I_R$			0.5	mA
Optical Input power	$P_{in}$			5	mW
Storage Temperature	$T_{stg}$		-25	90	°C
Storage Humidity	$H_{stg}$			85	% r.H.
Operating Temperature	$T_{op}$		-10	80	°C
Soldering Temperature	$T_{st}$	10 sec		360	°C
ESD Susceptibility		HBM	100		V

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



## Pin Configuration

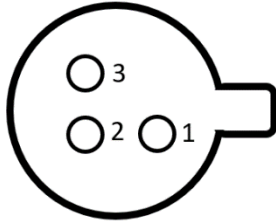


Fig 1A: Bottom View

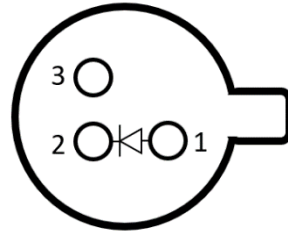


Fig 1B: Functional Diagram

Pin Number	Function
1	PD Anode (+)
2	PD Cathode (-)
3	Case Ground

Table 1: Device Pin out

## Device Dimensions

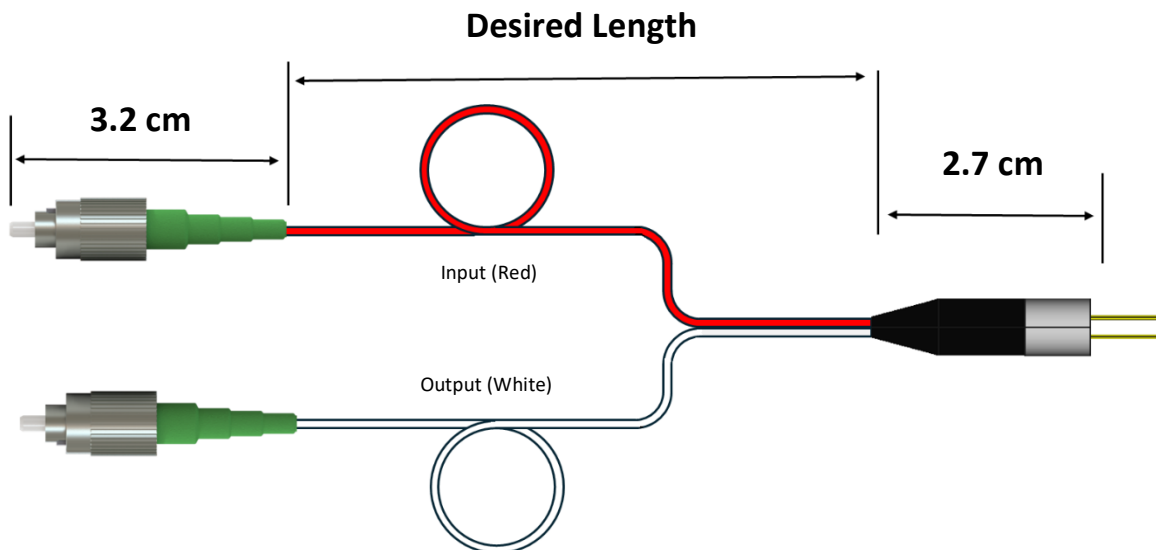
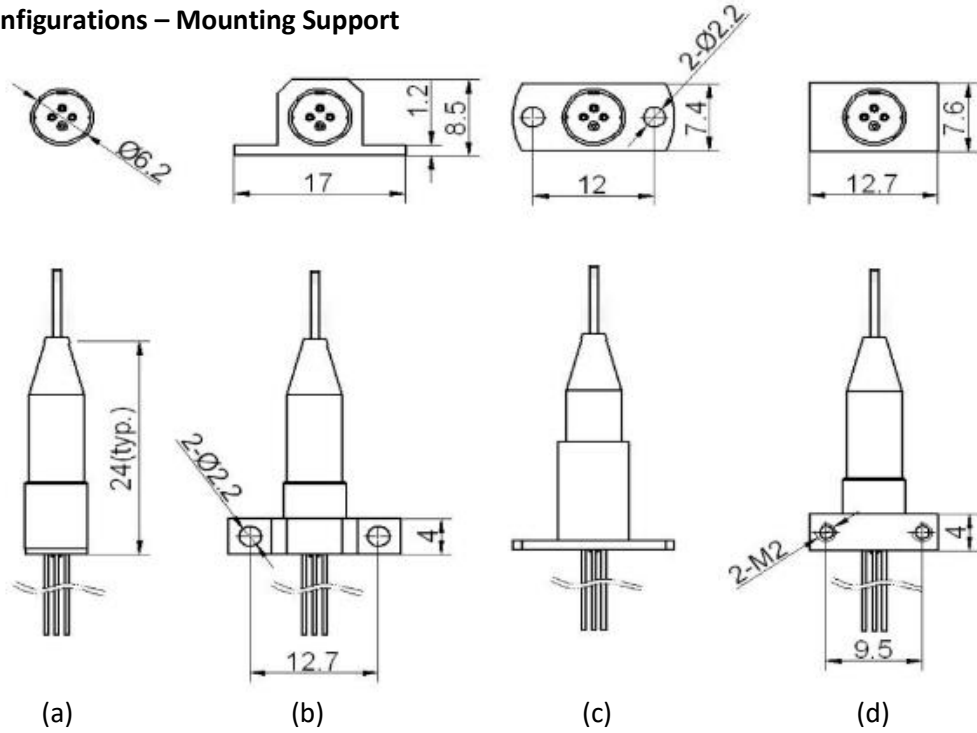


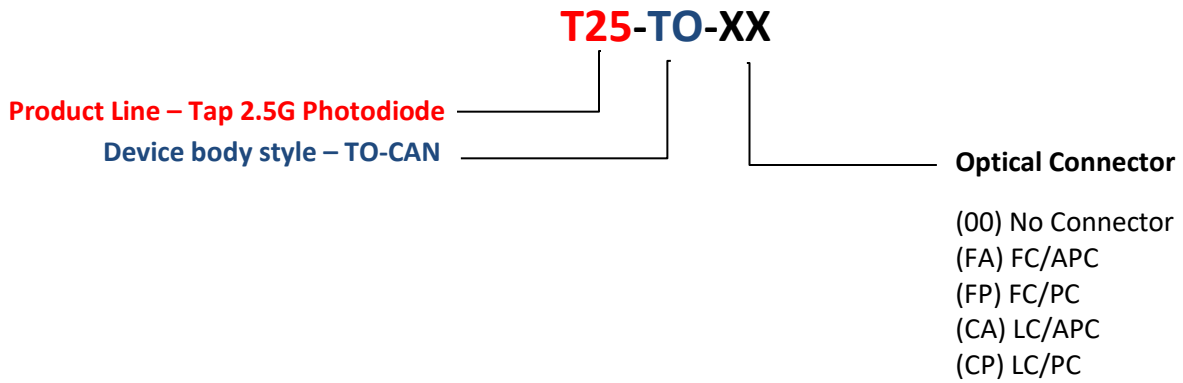
Fig 2: Device mechanical drawing. (All units in mm). Fiber and connector size differs based on build configuration.



### Build Configurations – Mounting Support



### Device Nomenclature



## **Inquiry Information**

**Sales:** All inquiries regarding sales please contact [Sales@NuPhotonics.com](mailto:Sales@NuPhotonics.com)

**General:** If you are interested in a custom solution, general information, or engineering related information please contact [Inquiry@NuPhotonics.com](mailto:Inquiry@NuPhotonics.com)

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