

*Wooriro IOPMS Series*

**WOORIRO 5% TAP-PD MODULE**  
**SPECIFICATIONS[Integration]**



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### General Description

5% Tap PD Module is based on a key technology that integrates thin film filter and mini-TO packaged photodiode. It is possible for a small single device to tap off optical signal and detect its power. Its body is electrically isolated from the two leads (electrodes), which prevents electrical shortage when assembled as an array. It drastically minimizes the general size of optical sub-systems that require high dense multiple tap-PD modules assembly.

The special technology used in the integration guarantees good optical characteristics and low deviation over a wide operating temperature range (0°C~+75°C)

With qualification of various and actual ESD threshold test methods, Our Tap PD Module can improve your product quality while saving money and your company's reputation.

### Features

- Wide Dynamic Range (1310nm/C&L Band)
- Low Insertion Loss & PDL
- Superior Response
- Low Dark Current
- High Reliability (GR-468-Core)
- RoHS Certification

### Applications

- DWDM Channel Monitoring
- Optical Amplifier (EDFA, Raman)
- Variable Optical Attenuator (VOA)
- V-Mux

### Absolute Maximum Ratings

Parameter	Symbol	Remark	Min.	Typ.	Max.	Unit
Reverse voltage	$V_R$	-			20	V
Input power	$P_{in}$	-5V Bias, @1550nm			27	dBm
Forward current	$I_F$	-			10	mA
Operating temp	$T_C$	-	0		75	°C
Storage temp	$T_{STG}$	-	-40		85	°C

Table 1. Absolute Maximum Ratings

### Electro-Optical Characteristics

Inspection sheet shall be appended to products when they are delivered. Test report shall be submitted in papers and in electronic media. It shall contain the major in following items.

#### Optical Characteristics(Tc=25°C)

Parameter	Symbol	Remark	Min.	Typ.	Max.	Unit
Wavelength range	$\lambda$	@1310nm band @ 1550nm band	1260 1510		1360 1610	nm
Tap ratio		5%: Transmission to PD part 95%: Refection to output fiber		5		%
Insertion loss**	IL				0.6	dB
Polarization dependent loss*	PDL	-			0.05	dB
Return loss*	RL	-	45			dB

\* Measured without connector

\*\* Worst case over all operating condition, including wavelength, polarization and temperature

Table 2. Optical Characteristics

#### Electrical Characteristics(Tc=25°C)

Parameter	Symbol	Remark	Min.	Typ.	Max.	Unit
Responsivity	R	-5V Bias, @1310nm -5V Bias, @1550nm	35 40	50	65 70	mA/W
Wavelength dependent responsivity		Input power 100uW, 25°C room temperature -5V Bias			0.7	dB
Polarization dependent responsivity		Input power 100uW, 25°C room temperature -5V Bias, @1550nm			0.1	dB
Temperature dependent responsivity		Input power 100uW, -5V Bias, @1550nm			0.15	dB
Photocurrent linearity		Over full input optical power range			5	%
Photo current at input optical power of -30dbm		25°C room temperature -5V Bias, @1550nm	40			nA
Variation in responsivity over life(15 years)		-5V Bias, @1550nm			0.3	dB
Bandwidth	$f_{3dB}$	RL=50W, Pin=10dB		600		MHz

Dark current	$I_d$	@25°C, -5V Bias @75°C, -5V Bias			1 5	nA nA
Capacitance	C	f=1MHz		6		pF
Soldering temperature					250	°C
Soldering time					5	sec

\* Measured at 100uW of input power on 25°C room temperature

Table 3. Electrical Characteristics

### Mechanical Dimension & PIN Layout

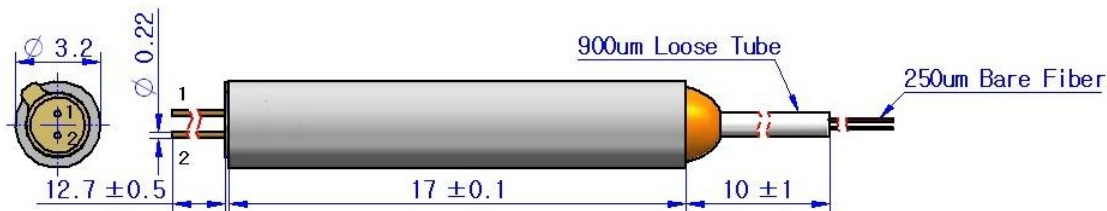
#### Mechanical Characteristics

Parameter	Symbol	Remark	Spec.	Unit
Fiber type		250um primary coated Input: red / output: clear	YOFC-G.657A	
Fiber length			1.0+0.3/-0	m
Connector		Optional	None/SC/FC/LC	
Fiber loose tube		In case of 250um primary coating fiber	Outer diameter: 0.9 length: 10.0±1 color :5% / blue	mm
Material of body		Body is electrically isolated from each signal pins	SUS 303	
Finish			No burrs or particles	
Total length		@ 250um primary coated fiber	17.0±0.1	mm
Outer diameter			Ø 3.2+0/-0.1	mm

Table 4. Mechanical Characteristics

#### Mechanical Dimension

(unit : mm)



A. 250um Bare Fiber Type

Figure 1. Mechanical Dimension

**Pin Configuration : 1-Cathode, 2-Anode in Figure. 1.**

## Other Requirements

### Precautions for use

This device is susceptible to damage as a result of ESD(electrostatic discharge). Use of ground straps, anti static mats, and other standard ESD protective equipment is recommended when handling or testing an InGaAs PIN/APD or any other junction photodiode.

### Packaging

Products shall be packed into a suitable case in order to prevent damage during transportation and storage as long as A`s company with not demand other requirement.

### Others

When the problem is caused concerning this specification sheet, both companies will confer in sincerity for the solution.

### Ordering Information

