Mini Fiber Inline Tap Power Monitor

2 to 10% tap ratio, directivity

(patent pending)

DATASHEET

BUY NOW

The Tap Optical Power Monitor is a hybrid fiber optical passive component that integrates a thin-film tap of flat spectral response with a high sensitivity PIN photodiode for power monitoring applications. The Power Monitor minimizes component assembly costs and module footprint while increasing module design efficiency by facilitating fiber Management.

The Power Monitor combines the functionality of an optical coupler and a photodiode while delivering low insertion loss and low dark current with high temperature stability over a wide wavelength range. Our directional version works well from 1260nm to 1620nm band.

Applications

- DWDM Channel Monitoring
- Power Monitoring in Optical
- Interface Modules
- Gain Monitoring for Amplifier
- EDFAs and Raman amplifiers
- Compact Design

Features

- Easy for Integrating
- Low Loss Device
- Compact Design
- Low dark current
- Hermetically sealed

Specifications

Parameter	Min	Typical	Max	Unit
Operation Wavelength	300		2400	nm
Responsivity [1]	5	20	60	mA/W
Polarization Stability [2]	0.1	0.2	0.25	dB
Insertion Loss	0.2	0.6	0.8	dB
Polarization Dependent Loss [3]			0.01	dB
Extinction Ratio [4]	23			dB
Directivity [5]	25	28	40	dB
Return Loss		55		dB
Max Optical Power		500		W
Dark Current@-5V, 23C			1	nA
3dB bandwidth@-5V bias	10	200	2000	MHz
Capacitance			10	pF
Max. Forward Current		10		mA
Max. Reverse Current		5		mA
Max. Reverse Voltage		10		V
Operating Temperature	-10		80	°C
Storage Temperature	-40		85	°C

Notes:

[1]. It is tap ratio depended. 2% ~10mA/W, 5% ~20mA/W, 10% ~60mA/W. Responsivity > 7 mA/W for 1% tap power monitor.

[2]. PDR, responsivity variation with polarization, only for polarization independent version.

[3]. PDL for polarization independent version.

[4]. ER for polarization maintaining version.

[5]. The responsivity ratio between forward and backward directed light.

Warning: **The device is extremely ESD-sensitive. Its dark current increases by unprotected handling. It is recommended to be handled under a certified ion fan once the package is removed.**

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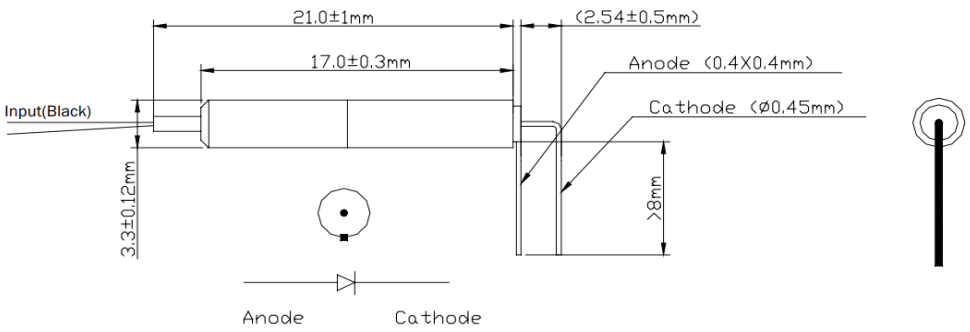
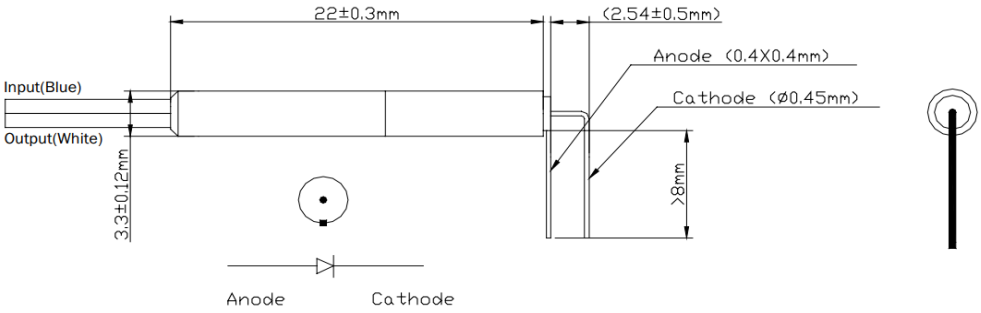
Mechanical Footprint Dimensions (mm)

Bare fiber:



Note:
Anode is connected to the metal housing.

Loose tube:



Note:
Anode is connected to the metal housing.

*Product dimensions may change without notice. This is sometimes required for non-standard specifications.

Ordering Information

	☐☐	☐	☐	☐	☐	☐	☐	☐
Prefix	**Tap Ratio**	**Wavelength**	**Bandwidth**	**Directivity**	**Package**	**Fiber Type**	**Fiber Length**	**Connector**
MOPM-	1% = 01 2% = 02 3% = 03 5% = 05 10% = 10 Special = 00	1260-1620 = 1 1310 = 3 1550 = 5 Special = 0	0.5G = 5 2.0G = 2	Yes = 1 No = 2	Bare fiber =1 Loose tube = 2 Special = 3	SMF-28 = 1 PM1550 = 2 Special = 0	0.25m = 1 0.5 m = 2 1.0 m = 3 Special = 0	None = 1 FC/PC = 2 FC/APC = 3 SC/PC = 4 SC/APC = 5 ST/PC = 6 LC/PC = 7 LC/APC = A LC/UPC = U Special = 0

NOTE:

- **PM1550** fiber works well for **1310nm**

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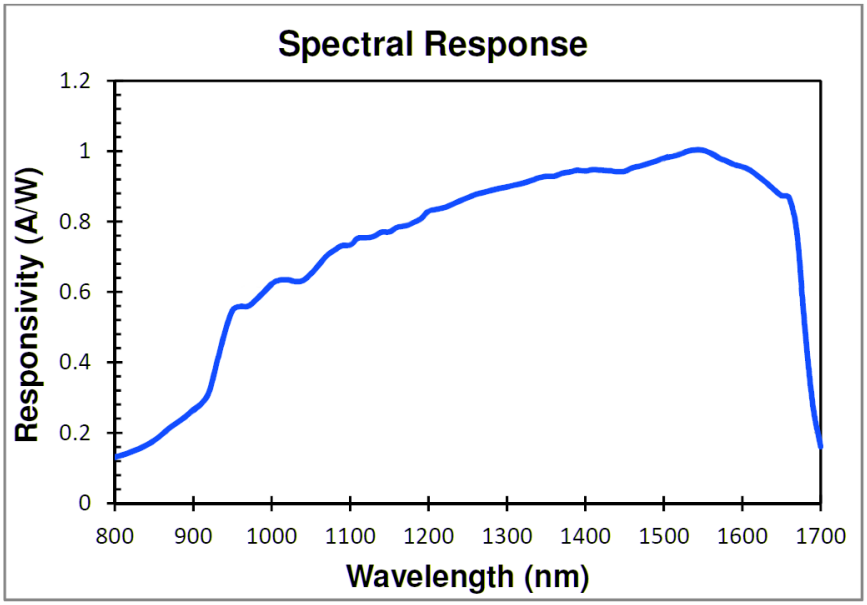
Spectral Response



Application Notes

Fiber Core Alignment
Note that the minimum attenuation for these devices depends on excellent core-to-core alignment when the connectors are mated. This is crucial for shorter wavelengths with smaller fiber core diameters that can increase the loss of many decibels above the specification if they are not perfectly aligned. Different vendors' connectors may not mate well with each other, especially for angled APC.

Fiber Cleanliness
Fibers with smaller core diameters (<5 μm) must be kept extremely clean, contamination at fiber-fiber interfaces, combined with the high optical power density, can lead to significant optical damage. This type of damage usually requires re-polishing or replacement of the connector.

Maximum Optical Input Power
Due to their small fiber core diameters for short wavelength and high photon energies, the damage thresholds for device is substantially reduced than the common 1550nm fiber. To avoid damage to the exposed fiber end faces and internal components, the optical input power should never exceed 20 mW for wavelengths shorter 650nm. We produce a special version to increase the how handling by expanding the core side at the fiber ends.

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Typical Temperature Dependence