Multimode Fiber Inline Tap Power Monitor

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Return to the Webpage

The Tap Optical Power Monitor is a hybrid fiber optical passive component that integrates a thin-film tap of flat spectral response with a Silicon photodiode for power monitoring applications near 850nm. The Silicon detector provides a low noise measurement while conventional InGaAs detectors are less sensitive at 850nm wavelength band. The Power Monitor minimizes component assembly costs and module footprint while increasing module design efficiency by facilitating fiber Management. This tap monitor is designed for low speed power monitor, not for high speed data processing.

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.

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
- Custom Tap Ratios Available
- Compact Design
- Low dark current
- Hermetically sealed

Specifications

Parameter		Min	Typical	Max	Unit
Operating Wavelength Range			770 ~ 860		nm
Insertion Loss [1]				0.8	dB
Return Loss [1]		30			dB
PD Responsivity (relative to 5% tap ratio)		15		36	mA/W
Dark Current	-5V bias, 23°C		0.05	2	nA
	-5V bias, 70°C			15	nA
3-dB Bandwidth	-5V bias, 50Ω load		10		MHz
Operating Temperature Range		0		70	°C
Storage Temperature Range		-40		85	°C
Fiber Type		Multi-mode 50µm or 62.5µm core			

Notes:

[1]. Excluding connectors

Note: The specifications provided are for general applications with a cost-effective approach. If you need to narrow or expand the tolerance, coverage, limit, or qualifications, please [click this link]:

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.**

Rev 12/18/24

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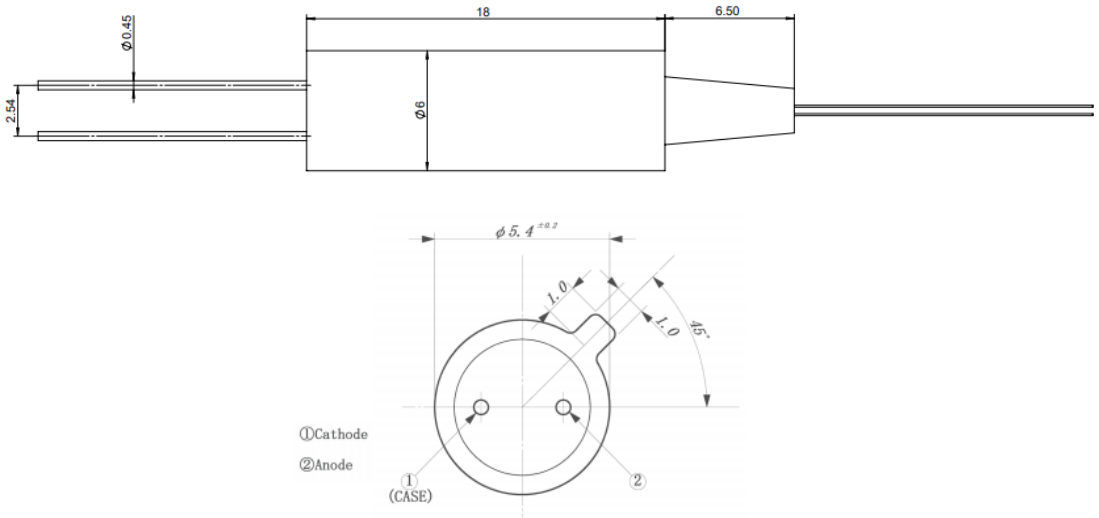
DATASHEET

Mechanical Footprint Dimensions (mm)



*Two fiber ports for input and output without directivity.
*Product dimensions may change without notice. This is sometimes required for non-standard specifications.

Ordering Information

	☐☐	☐	☐	☐	☐	☐	☐	☐
Prefix	**Tap Ratio**	**Wavelength**	**Directivity**	**Bandwidth**	**Fiber Type**	**Fiber Cover**	**Fiber Length**	**Connector**
MMPM-	2-5% * = 01 10% = 10 Special = 00	850nm = 8 Special = 0	Non = 0 Yes = 1	0.1G = 1	50/125um = 2 62.5/125um = 3 Special = 9	Bare fiber = 1 Loose tube = 2 Special = 3	0.25m = 1 0.5m = 2 1.0m = 3 Special = 0	None = 1 FC/PC = 2 FC/APC = 3 SC/PC = 4 SC/APC = 5 ST/PC = 6 LC/PC = 7 Duplex LC/PC = 8 MTP = 9 LC/APC = A LC/UPC = U Special = 0

* Multimode tap ratio is related to the laser mode field. We use CPR~14 to test

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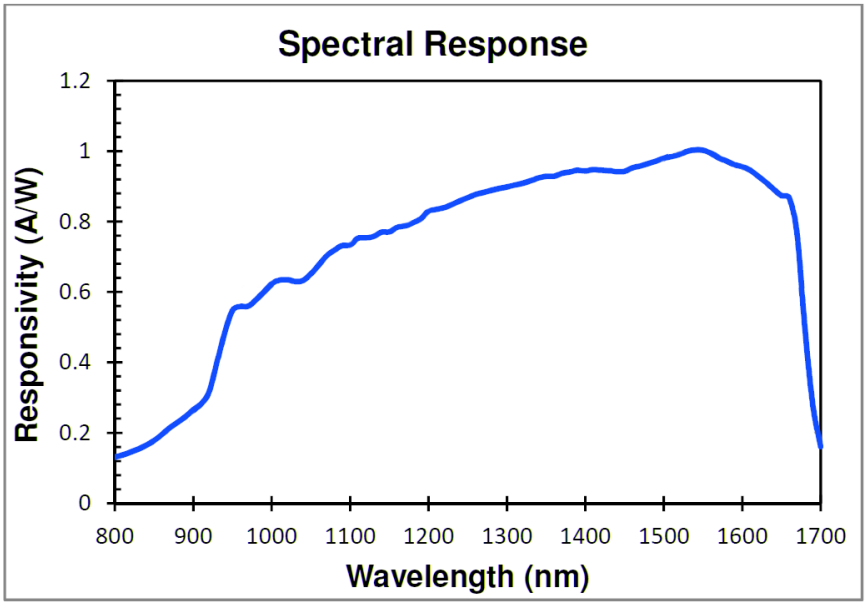
DATASHEET

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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DATASHEET

Caution Electrostatic Sensitivity

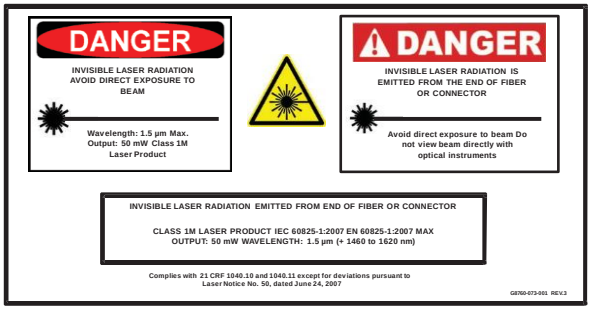
- Never touch laser diode and the module using hands
- Always use protections when handle a laser diode
- Recommend mounting the laser diode using an ionic gun and ESD finger cots

Laser Safety

This product meets the appropriate standard in Title 21 of the Code of Federal Regulations (CFR). FDA/CDRH Class 1M laser product. This device has been classified with the FDA/CDRH under accession number 0220191. All versions of this laser are Class 1M laser products, tested according to IEC 60825-1:2007 / EN 60825-1:2007. An additional warning for Class 1M laser products. For diverging beams, this warning shall state that viewing the laser output with certain optical instruments (for example eye loupes, magnifiers, and microscopes) within a distance of 100 mm may pose an eye hazard. For collimated beams, this warning shall state that viewing the laser output with certain instruments designed for use at a distance (for example telescopes and binoculars) may pose an eye hazard.

Wavelength = 1.3/1.5 µm.

Maximum power = 30 mW.



*Caution - Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.
*IEC is a registered trademark of the International Electrotechnical Commission.

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