

1310/1550 Single Mode Single Stage Optical Isolator



Ø=5.5/3.0mm, SM/PM, 35dB isolation, up to 5W

DATASHEET

BUY NOW



Features

- Low Insertion Loss
- High Isolation
- Low PDL
- High Reliability
- Low Cost

Applications

- Optical Fiber Amplifier
- Pump Laser Source
- Fiber Optic Sensor
- Instrumentation

The OISM Series 1310 and 1550 single stage optical Isolator is a passive device that guides light at 1310 or 1550 nm in the normal direction while minimizing back reflection and back scattering in the reverse direction for any state of polarization or polarized light. Employing Agiltron's proven advanced micro optics design, it features ultra low insertion loss, high isolation, compact structure, and high stability. These Telcordia qualified components have excellent characteristics, making them an ideal choice for application in fiber amplifier systems, pump laser diodes and optical fiber sensors. This version has two package sizes of diameter 5.5mm and 3.0mm and single mode and polarization maintaining configurations to select.

Specifications

Parameter	Min	Typical	Max	Unit
Operation Wavelength (λ_0)	1310	1310 \pm 15		nm
	C Band	1550 \pm 15		
	L Band	1585 \pm 15		
Insertion Loss (λ_c , 23°C, no connector)		\leq 0.3		dB
Insertion Loss (Over λ_0 , 23°C, no connector)			\leq 0.5	dB
Isolation (Over λ_0 , 23°C)	\geq 30			dB
Typical Peak Isolation (λ_c , 23°C)		\geq 41		dB
Polarization Dependent Loss		\leq 0.1		dB
Polarization Extinction Ratio (PM Fiber Only)	18	20	24	dB
Polarization Mode Dispersion ^[1]		\leq 0.2		ps
Return Loss (Input/Output)	\geq 60			dB
Operating Temperature	-5		+70	°C
Storage Temperature	-40		+85	°C
Optical Power Handling		\leq 400		mW

[1]. Special order for PMD \leq 0.05ps with compensator

Note: For a polarized input light version, the isolation is optimized to block the light reflection of the same polarization. Although lights of other polarizations may also be blocked, the extinction may be poor. PM isolators can be specially made to block backward propagating lights of all polarizations. PM isolators can also be made with a light polarizing function.

Warning: This is an OEM module designed for system integration. Do not touch the PCB by hand. The electrical static can kill the chips even without a power plug-in. Unpleasant electrical shock may also be felt. For laboratory use, please buy a Turnkey system.

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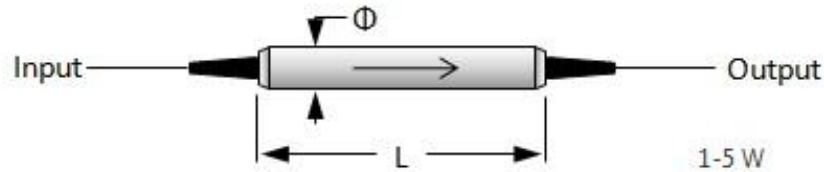
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Mechanical Dimensions (mm)



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

Ordering Information (Part Number)

Prefix	Type	Wavelength	Power	Package	Fiber Type	Fiber Cover	Fiber Length	Connector
OISM-	Single Stage = 10	1310 = 3 C Band = C L Band = L Special = 0	Standard = 1 1W = 2 5W = 5	ø5.5x34 = 1 ø3.0x25 = 2 Special = 0	SMF-28 = 1 PM 1550 = 5 PM1310 = 3 Special = 0	Bare Fiber = 1 Tight Buffer = 2 900µm Loose Tube = 3 3mm Cable = 4	0.25m = 1 0.5m = 2 1.0m = 3 1.5m = 4 2.0m = 5 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

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.

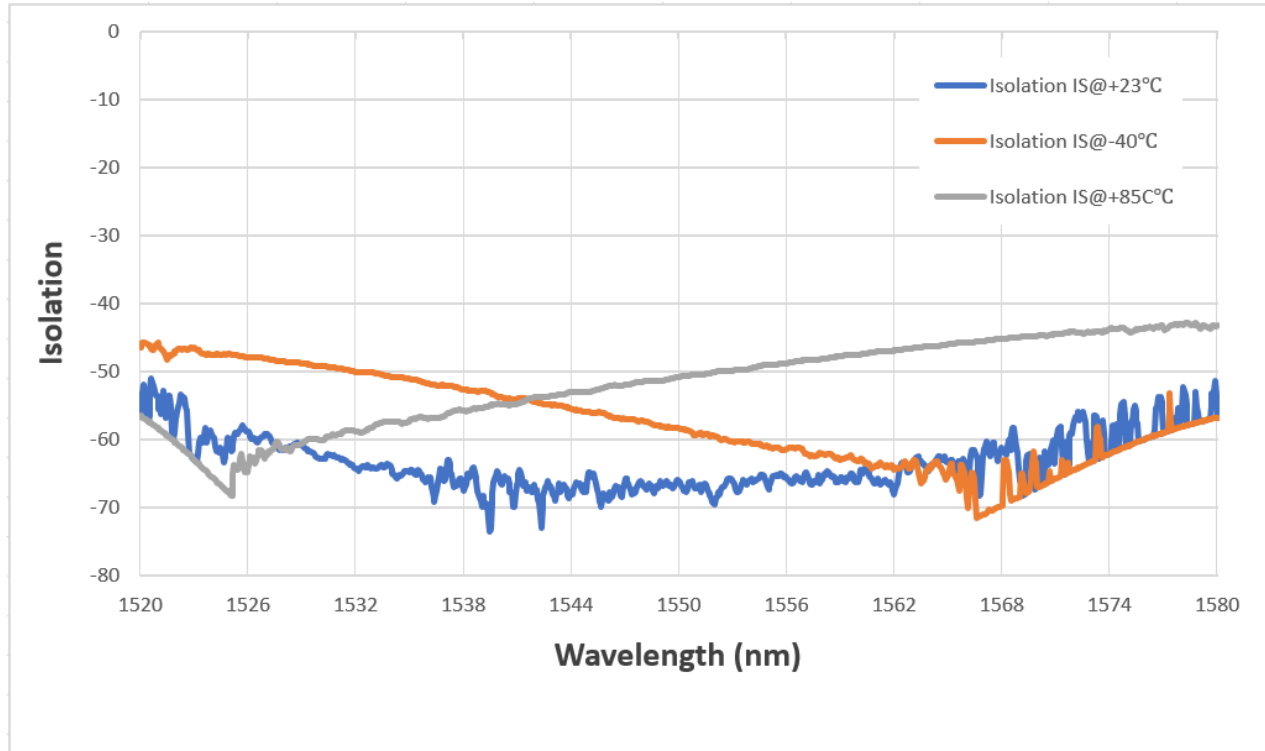
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Isolation vs Wavelength



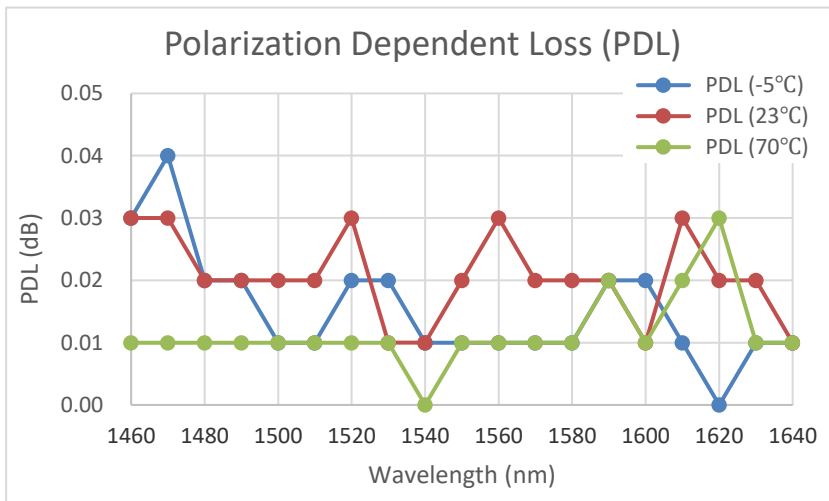
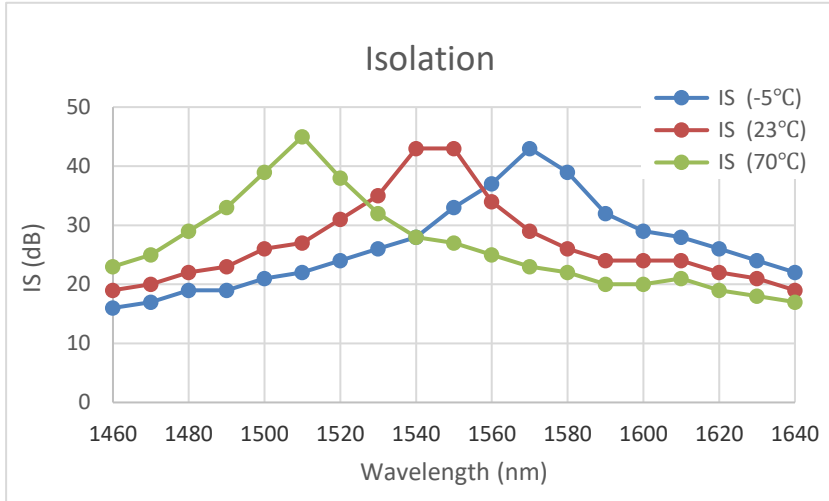
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Typical Wavelength Dependence for Single Stage



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Typical Wavelength Dependence for Dual Stage

