

# Mini 1310/1550 Single Mode Single Stage Optical Isolator



Ø = 1mm, SM, 35dB isolation

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## Features

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

## 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 compact size of 1mm in diameter, 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.

## Specifications

Parameter	Min	Typical	Max	Unit
Operation Wavelength ( $\lambda_o$ )	1310	1310 $\pm$ 15		nm
	C Band	1550 $\pm$ 15		
	L Band	1585 $\pm$ 15		
Insertion Loss ( $\lambda_c$ , 23°C, no connector)		$\leq$ 0.3		dB
Insertion Loss (Over $\lambda_o$ , 23°C, no connector)			$\leq$ 0.5	dB
Isolation (Over $\lambda_o$ , 23°C)	23			dB
Typical Peak Isolation ( $\lambda_c$ , 23°C)		35		dB
Polarization Dependent Loss		0.05	0.1	dB
Polarization Mode Dispersion <sup>[1]</sup>			0.2	ps
Return Loss (Input/Output)	55		60	dB
Operating Temperature	-5		+70	°C
Storage Temperature	-40		+85	°C
Optical Power Handling			500	mW
Dimension		$\phi$ 1.0xL22		mm

[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.

**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:** 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.

**Legal notices:** All product information is believed to be accurate and is subject to change without notice. Information contained herein shall legally bind Agiltron only if it is specifically incorporated into the terms and conditions of a sales agreement. Some specific combinations of options may not be available. The user assumes all risks and liability whatsoever in connection with the use of a product or its application.

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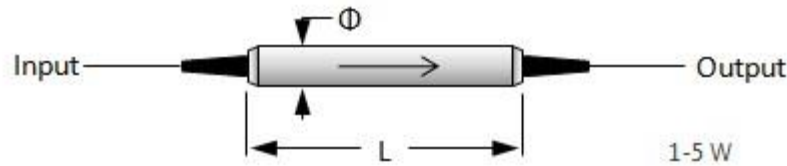
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### Mechanical Dimensions (mm)



Φ=1.0mm  
L=22mm

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

### Ordering Information

Prefix	Type	Wavelength	Power	Package	Fiber Type	Fiber Cover	Fiber Length	Connector
OISM-	1 M	1310 = 3 C Band = C L Band = L Special = 0	Standard = 1	Ø1 = 1 Special = 0	SMF-28 = 1 Special = 0	Bare Fiber = 1 Tight Buffer = 2 Special = 0	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.

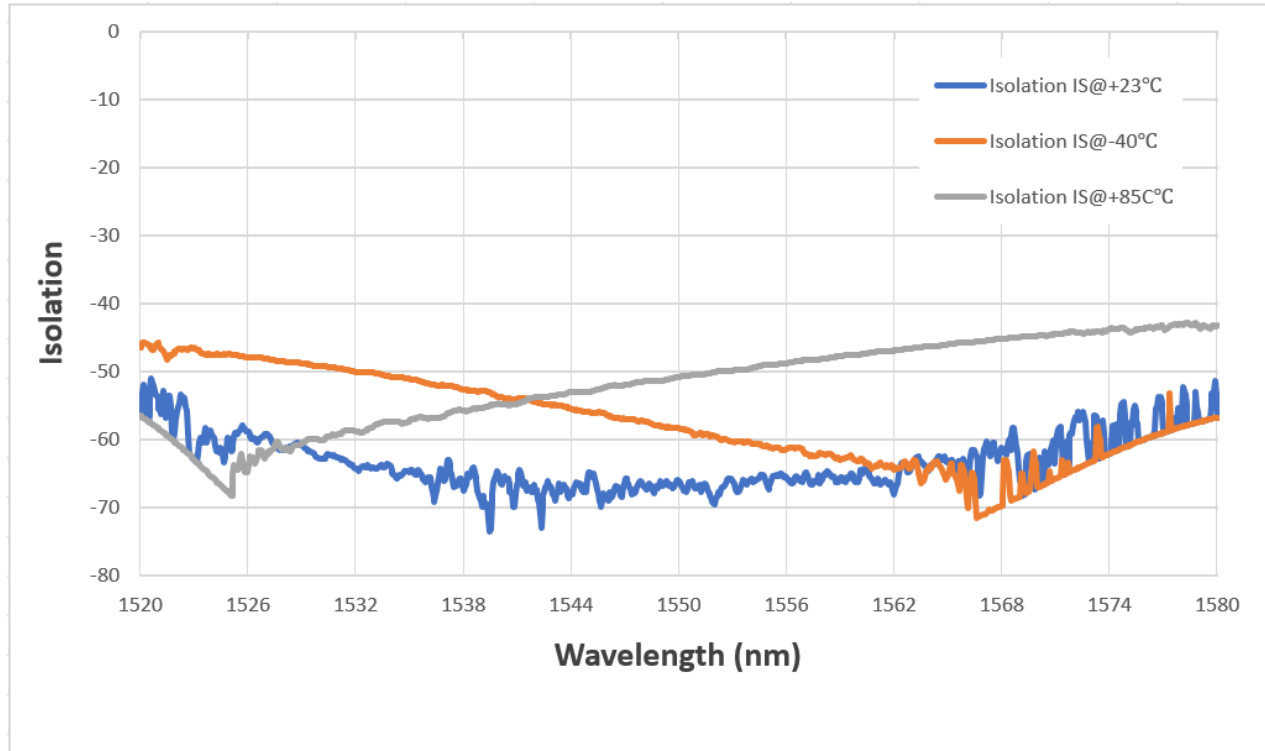
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### Isolation vs Wavelength



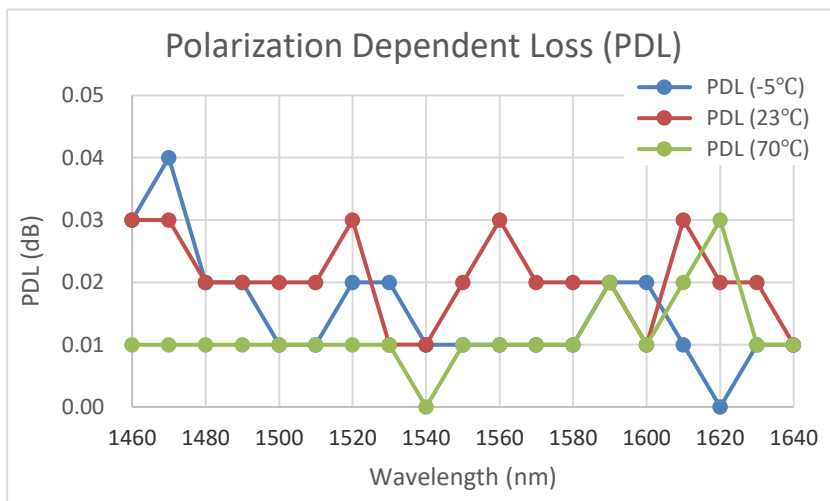
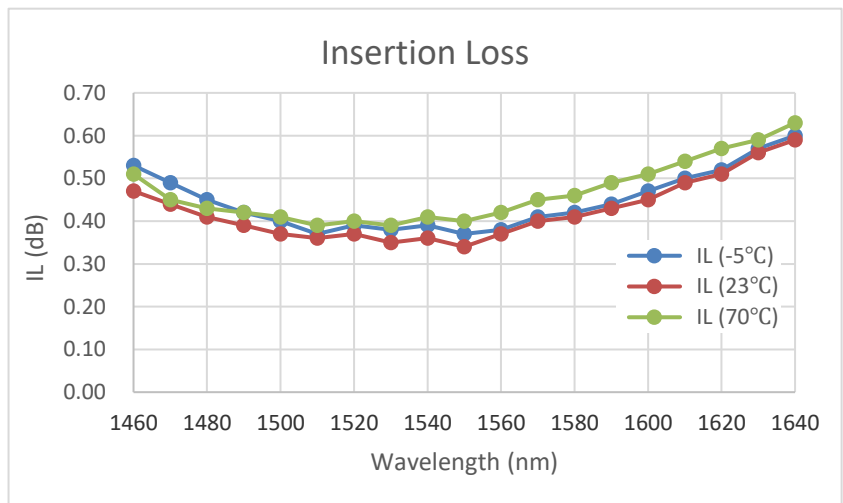
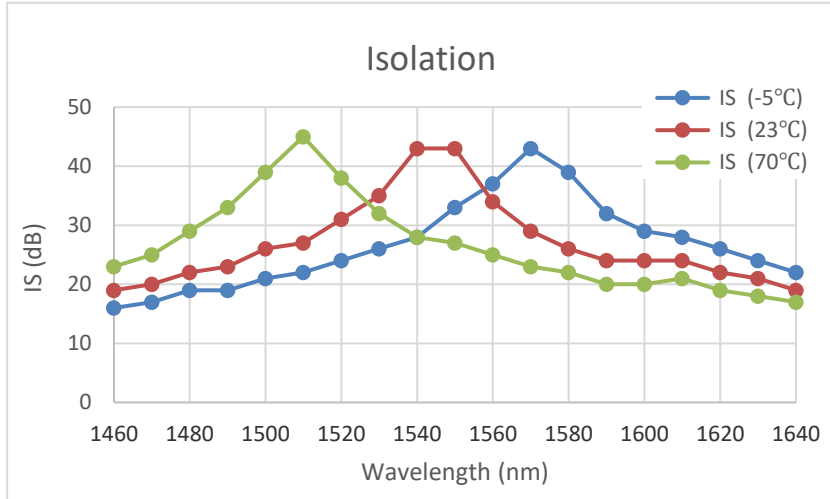
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### Typical Wavelength Dependence for Single Stage



# Mini 1310/1550 Single Mode Single Stage Optical Isolator



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### Typical Wavelength Dependence for Dual Stage

