Mini Fiber Optic Isolator 1030, 1040, 1050 nm 5.5 mm Diameter

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This series fiber optical isolator is a passive device that guides 1060 nm light in the forward direction from an input fiber to free space while blocking light propagating in the reverse direction. It is based on an efficient BIG material that provides a much smaller package size with slightly higher optical loss. Our proprietary magneto-optic technology and proven advanced micro-optics design, perfected over 25 years, provide low insertion loss, high isolation, compact size, high power handling, and excellent stability.The platform supports various fiber types, including polarization-independent single-mode, polarization-maintaining, multimode, and double-clad fibers. Available configurations support up to 1 W CW optical power.The excellent performance and compact size of this product make it an ideal choice for applications where space is limited. Customized designs are also available to meet specific application requirements.

Features

- Wide Operating Wavelength
- High Isolation & Low Insertion Loss
- Low PDL
- Telcordia GR-1221 Compliant
- Polarization Insensitive and Polarization Sensitive (Dependent)

Applications

- Fiber Amplifier
- Fiber Laser
- Gas Sensor
- Laser Cutting Machine

Specifications

Parameter		Min	Typical	Max	Unit
Center Wavelength			1030, 1040, 1050		nm
Peak isolation	Single Stage		29		dB
	Dual Stage		39		
Minimum Isolation[1]	Single Stage		25		dB
	Dual Stage		35		
Typical IL [1]	Single Stage		2.6		dB
	Dual Stage		3.5		
Insertion Loss [1]	Single Stage		≤ 2.9		dB
	Dual Stage		≤ 3.8		
Polarization Dependent Loss (PDL)	SM Singl Stage		≤ 0.15		dB
	SM Dual Stage		≤ 0.20		
	PM (PER)		≥ 20		
Polarization Mode Dispersion (PMD)	Single Stage		≤ 0.2		ps
	Dual Stage		≤ 0.05		
Return Loss (Input/Output) (RL)			≥ 50/50		dB
Fiber Type			HI1060, HI1060Flex		
Max Power Handling CW			50		mW
Operating Temperature		0		+50	°C
Storage Temperature		-40		+85	°C

[1] Test 5 ~ 50 °C , λ±5nm without connectors. With connectors, IL+0.3dB, RL-5dB.

RoHS COMPLIANT

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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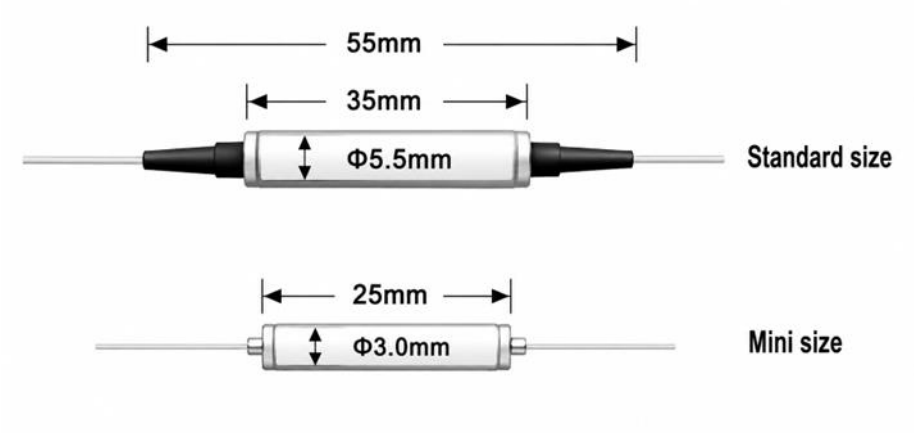
Mechanical Dimensions (mm)



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

Ordering Information (Part Number)

	☐	☐	☐	☐	☐	☐	☐	☐
Prefix	**Configuration**	**Wavelength**	**Grade**	**Power**	**Fiber Type**	**Fiber Cover**	**Fiber Length**	**Connector** [1]
OISB-	Polarization Independent = 1 Polarization Dependent = 2 Polarizing = 3 Multimode = 5	1030nm = 3 1040nm = 4 1050nm =5	Single Stage = 1 Dual Stage = 2	Regular = 1	HI1060 = 2 HI1060 Flex = 3 50/125 = 5 62.5/125 = 6 Special = 0	0.9mm tube = 3 Bare fiber = 1 Special = 0	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 LC/APC = A LC/UPC = U Special = 0

[1]. The default connector configuration uses fiber with 0.9 mm buffer protection. The connector cannot be installed directly onto bare fiber because the bare fiber is prone to damage during shipping. However, the connector can be assembled on bare fiber if a 3 cm protective loose tube is added for reinforcement. The customer may remove this protective tube after testing. The optical power handling of a standard connector is less than 0.5 W for SMF-28 fiber and decreases further for smaller-core fibers.

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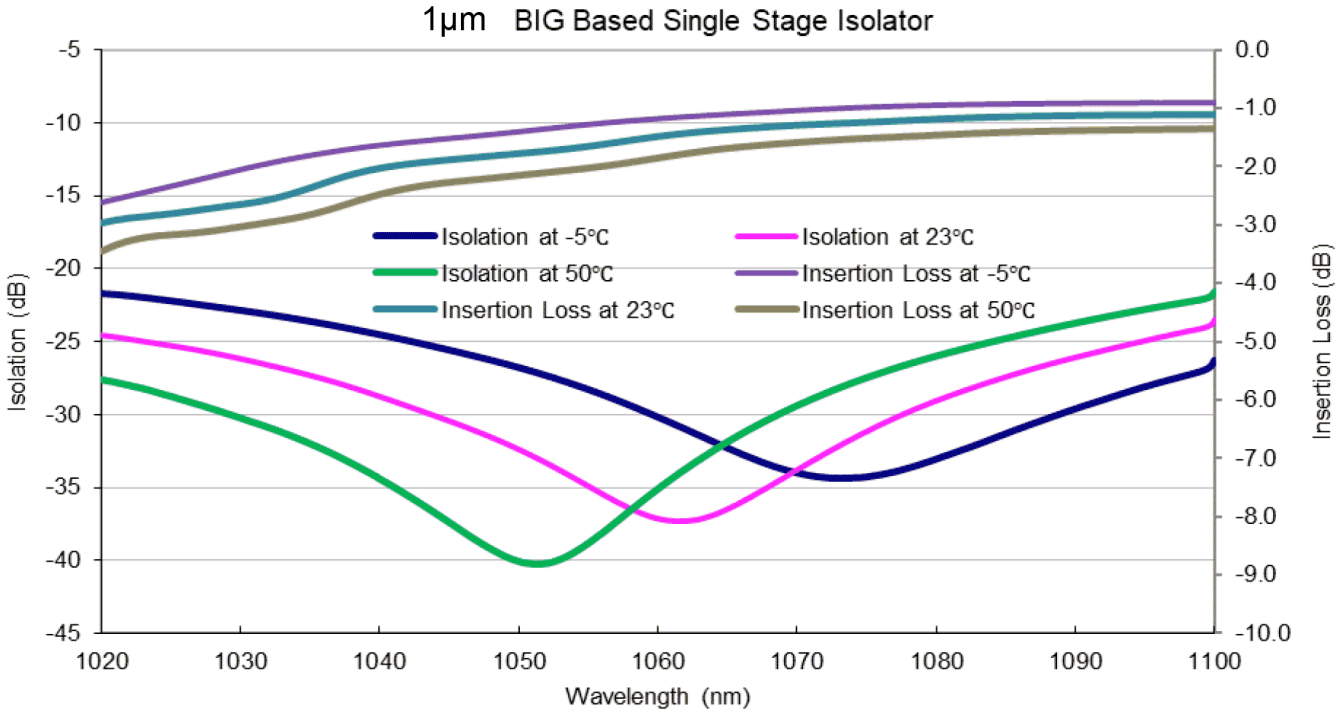
Typical Spectrum



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.