

Terbium Gallium Garnet Based Polarization Maintaining 850/980/1060 Optical Isolator



(patents pending)

DATASHEET

BUY NOW



The OIST Series fiber optical isolator is a passive device that guides lights at 850/980/1060 nm in the forward direction while blocking light propagating in the reverse direction. Our proprietary magnetic-optics technology and proven advanced micro optics design perfected over 25 years features low insertion loss, high isolation, compact structure, high power handling, and high stability. The platform can accommodate various fibers of polarization independence, polarization maintenance, multimode, double cladding. The available configurations include 5W CW optical power handling, dual-stage high isolation, and integrated output power monitoring tap. The excellent characteristics of this product make it an ideal choice for applications where a high-performance isolator is needed. We also provide customized designs to meet special applications.

Features

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

Applications

- Optical Fiber Amplifier
- Pump Laser Source
- Fiber Optic Sensor
- Test and Measurement
- Instrumentation

Specifications

Parameter		Min	Typical	Max	Unit
Operation Wavelength	850	840		860	nm
	980	970		990	
	1060	1050		1070	
Insertion Loss ^[1]			0.8	1.2	dB
Wavelength Dependent Loss				0.2	dB
Isolation	850	22	27		dB
	980/1060	25	30		
Extinction Ratio		20	25		dB
Return Loss		50			dB
Optical Power Handling			500		mW
Storage Temperature		-10		60	°C
Fiber Type		See order information			
Package Dimension	Standard 850	(L)61x(W)34x(H)33			mm
	Standard 980/1060	(L)83x(W)34x(H)33			
	Mini Size 980/1060	(L)61x(W)34x(H)33			

Notes:

[1]. Excluding connectors

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Rev 01/19/24

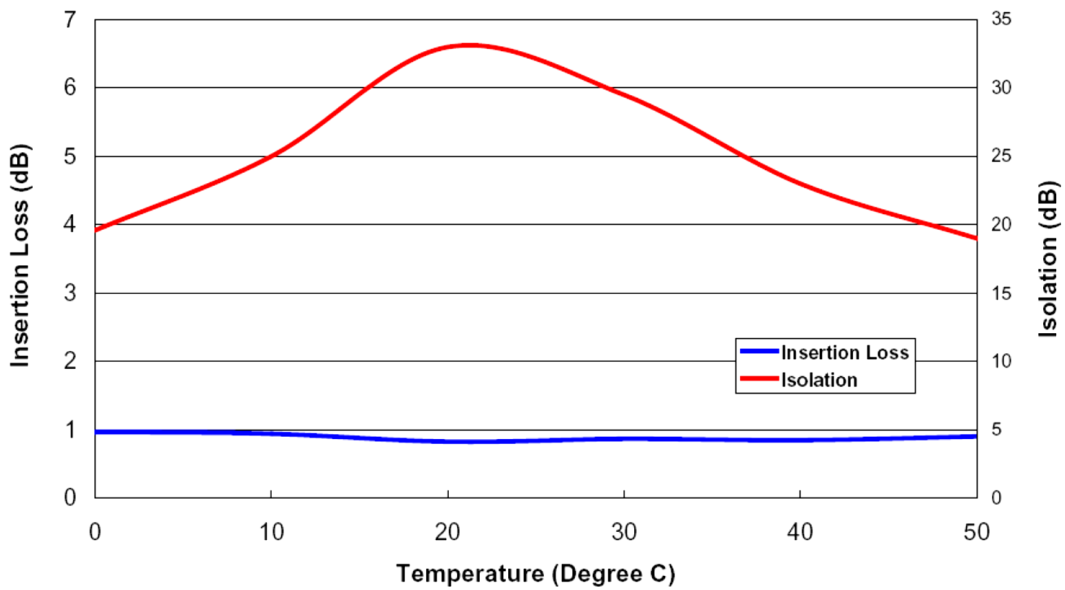
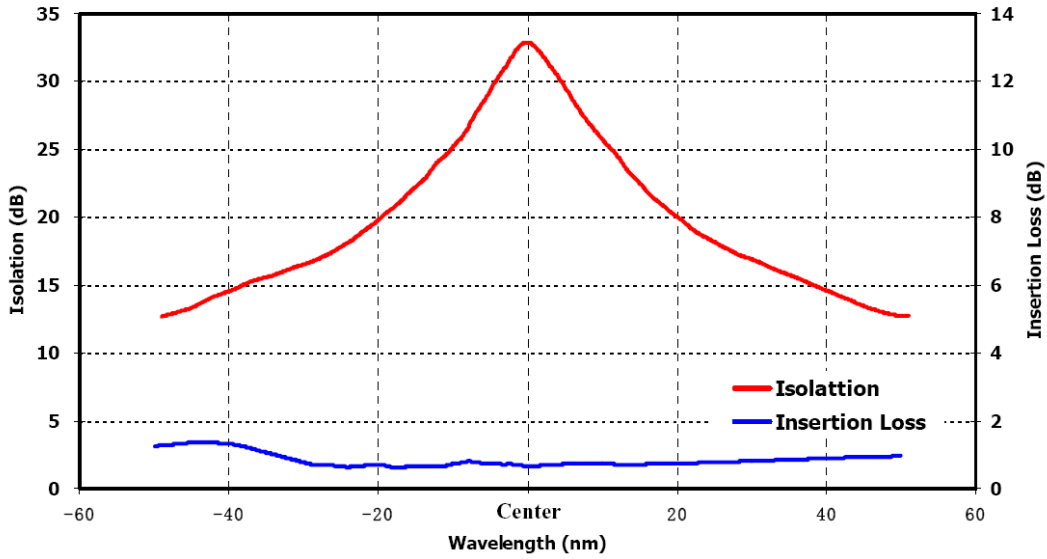
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Optical Performance



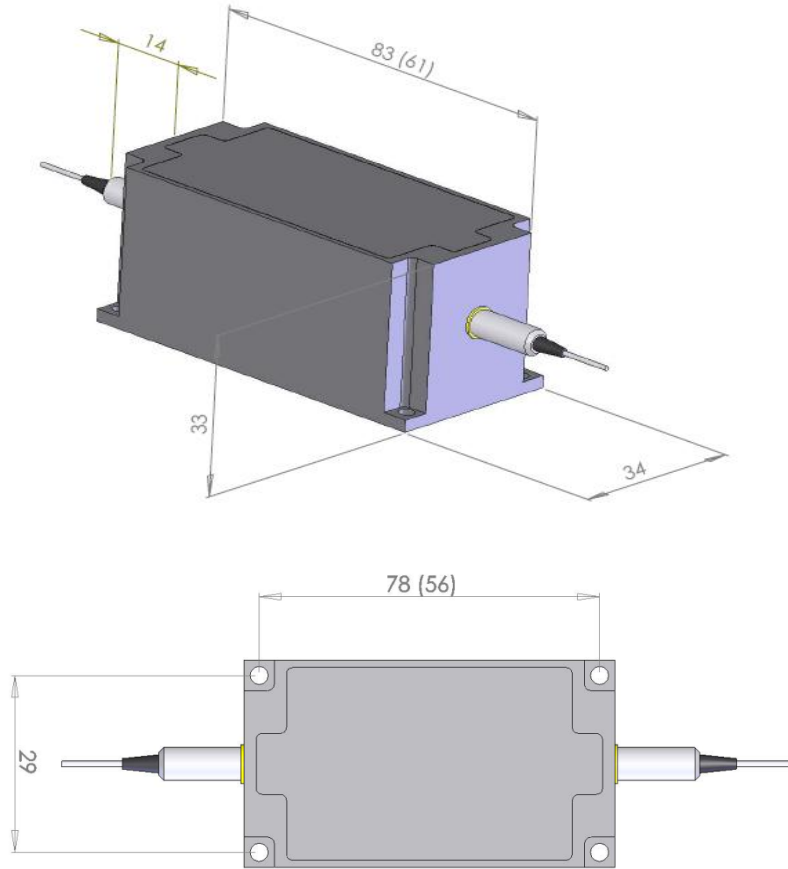
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Mechanical Dimensions: Standard (Mini/850) Unit: mm



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

Ordering Information (Part Number)

Prefix	Configuration	Wavelength	Grade	Package	Fiber Type	Fiber Cover	Fiber Length	Connector ^[1]
OIST-	Polarization Maintaining = 12 Special = 10	1060 = 1 850 = 8 980 = 9 Special = 0	Standard = 1 Special = 0	Standard = 1 Special = 0	PM850 = D PM980 = E 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 connector cannot be installed directly onto bare fiber, as it 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 can remove this protective tube after testing. The optical power handling of a standard connector is less than 0.5 W for SM28 fiber and decreases further with smaller core fibers.

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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 ($<5 \mu\text{m}$) 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 handling by expanding the core side at the fiber ends.