

Product Bulletin



IS3550 Series Polarization Independent Single-Stage Isolators

The IS3550 Series of miniature single-stage optical isolators are fully qualified, high-performance polarization insensitive components. They are designed to provide high isolation in combination with very low insertion loss, polarization dependent loss (PDL), and polarization mode dispersion (PMD) over full temperature and wavelength ranges. Their excellent characteristics make them highly suitable for field applications and laboratory use.

Isolators optimized for operation around 1310 nm, 1480 nm, L-band or pigtailed with polarization maintaining fiber are also available.

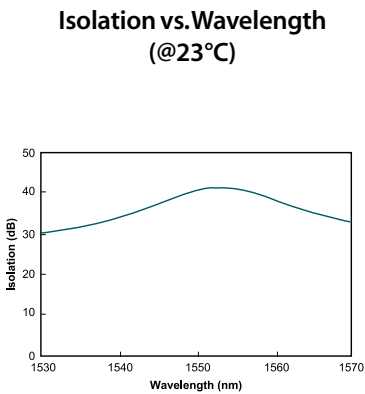
Key Features

- Compact size
- Very low insertion loss, PDL, and PMD over entire temperature and wavelength ranges
- High isolation and return loss
- Designed for stable and highly reliable performance

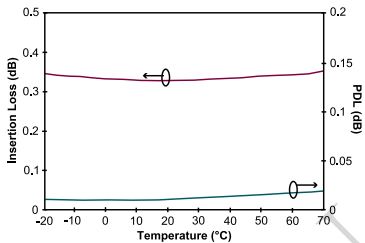
Applications

- Optical amplifiers
- Cable television systems
- Fiber ring lasers
- Testing of light sources and components

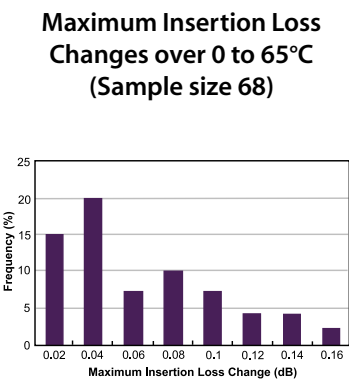
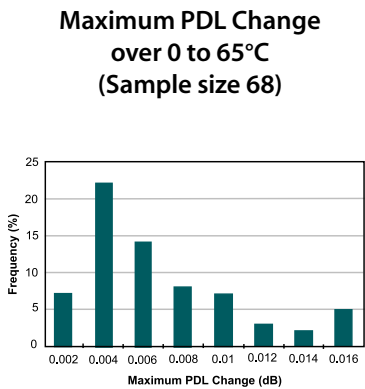
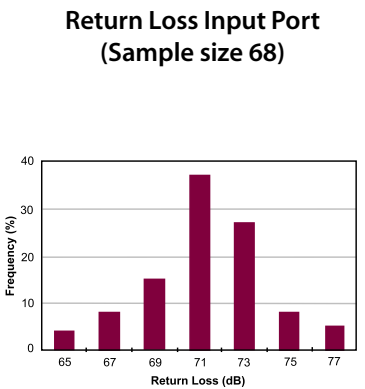
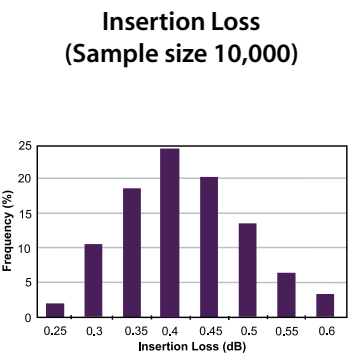
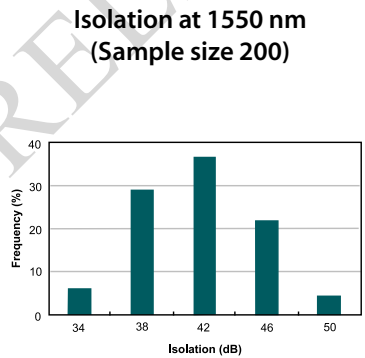
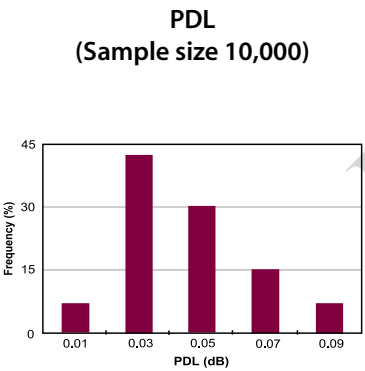
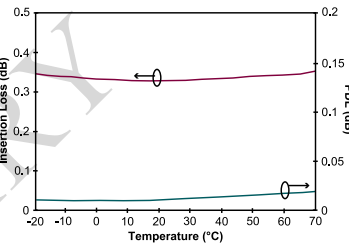
Typical Performance



Insertion Loss and Polarization
Dependent Loss
vs. Temperature (@1545 nm)



Insertion Loss vs. Wavelength
(@23°C)



Qualification and Reliability Tests

Type of Test	Conditions	Duration
Damp heat	85 °C and 85% RH	5000 hours
High temperature storage	85 °C	5000 hours
Low temperature storage	-40 °C	5000 hours
Temperature cycling	-40 to 75 °C	500 cycles
Temperature humidity cycling	-40 to 75 °C, 90% RH	5 cycles
Water immersion	43 °C	168 hours
Vibration	10-2000-10 Hz	12 cycles x 3 axis
Impact	500 G, 8 impacts x 3 axis	5 cycles
Cable retention	0.5 kg for 1 minute	3 pulls/fiber

Specifications

Parameter	Premium Grade	Standard Grade
Model	IS3550+1P	IS3550+1S
Operating wavelength (l)	1530 to 1570 nm	
Typical insertion loss ¹ over λ , @23 °C	0.3 dB	0.4 dB
Maximum insertion loss ¹ over λ , 0 to 60 °C over all states of polarization	≤0.5 dB	≤0.7 dB
Typical peak isolation	40 dB	35 dB
Minimum isolation over λ , @23 °C	≥30 dB ²	≥28 dB ²
Polarization dependent loss over λ , @23 °C	≤0.05 dB	≤0.1 dB
Polarization mode dispersion over λ , 0 to 60 °C	≤0.03 ps	≤0.03 ps
Return loss	≥55 dB	≥50 dB
Maximum optical power	300 mW	
Dimensions (cylindrical DxL)	5.5 x 34 mm	
Operating temperature	0 to 60 °C	
Storage temperature	-40 to 85 °C	

Isolators optimized for operation around 1310, 1480 nm, or L-band, or pigtailed with polarization maintaining fibers are also available.

1. Measured without connectors.

2. Detailed specifications of a two-stage isolator with minimum isolation of 45 dB over the entire wavelength range can be found in the separate datasheet on the IS3500 Series.

Ordering information

Indicate your requirements by selecting one option from each configuration table. Please print the corresponding codes in the available boxes to form your part number. For more information on this or other products and their availability, please contact your local JDS Uniphase sales representative or JDS Uniphase directly at 613 727-1303, or by fax 613 727-8284, or via email at sales@ca.jdsunph.com, or visit our Web site at www.jdsunph.com.

Sample: IS3550+1SA1.5NC

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JDS Uniphase Corporation
570 West Hunt Club Road
Nepean (Ottawa), Ontario
K2G 5W8 Canada

Tel 613 727-1303
Fax 613 727-8284
sales@ca.jdsunph.com
www.jdsunph.com

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