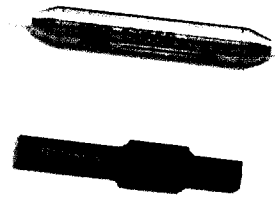


IS3550 Series Polarization Independent Single-Stage Isolators



Description

The IS3550 Series are miniature single-stage optical isolators. These fully qualified, high performance polarization insensitive components 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 range. Their excellent characteristics make them highly suitable for laboratory and field applications.

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

Key Features

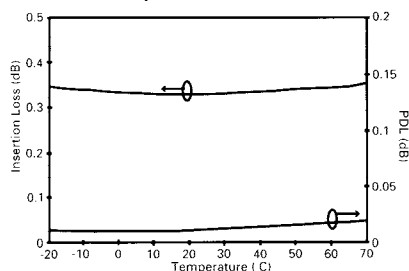
- Compact size
- Very low insertion loss, PDL and PMD over entire temperature and wavelength range
- High isolation and return loss
- Designed for stable and highly reliable performance

Applications

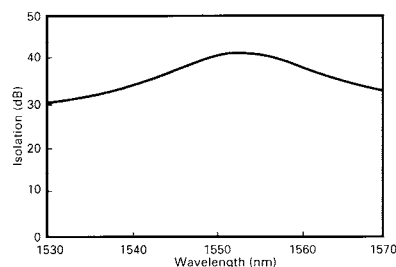
- Optical amplifiers
- CATV systems
- Fiber ring lasers
- Testing of light sources and components

Typical Performance

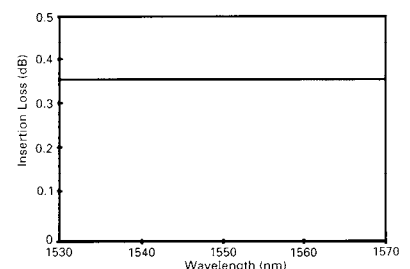
Insertion Loss and Polarization Dependent Loss vs. Temperature (@1545 nm)



Isolation vs. Wavelength (@23°C)



Insertion Loss vs. Wavelength (@23°C)



Qualification & Reliability Tests

Type of Test

Damp heat
High temperature storage
Low temperature storage
Temperature cycling
Temperature humidity cycling
Water immersion
Vibration
Impact
Cable retention

Conditions

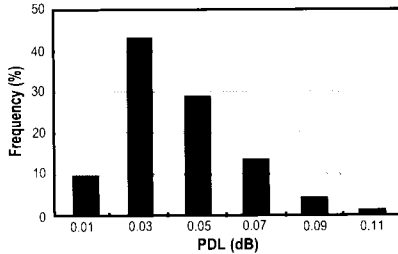
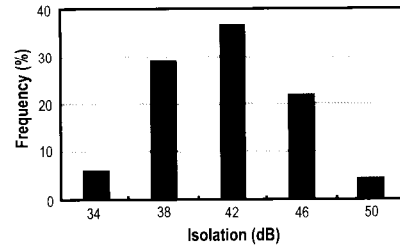
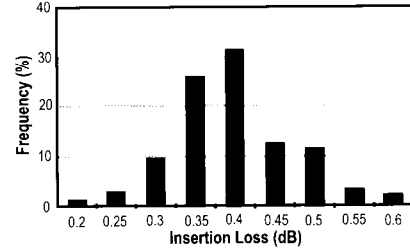
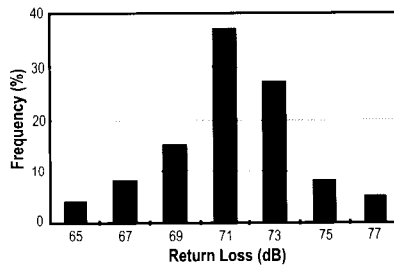
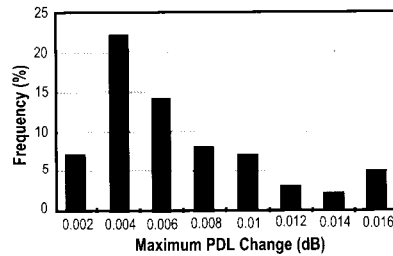
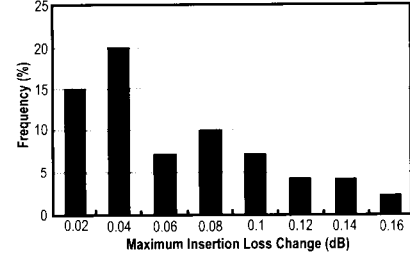
85°C and 85% RH
85°C
-40°C
-40°C to 75°C
-40°C to 75°C, 90% RH
43°C
10-2000-10 Hz
500 G, 8 impacts x 3 axis
0.45 kg-f for 1 min.

Duration

5000 hours
5000 hours
5000 hours
500 cycles
5 cycles
168 hours
12 cycles x 3 axis
5 cycles
3 pulls/fiber



Typical Performance

PDL (Sample size 200)

Isolation at 1550 nm (Sample size 200)

Insertion Loss (Sample size 200)

Return Loss Input Port (Sample size 68)

Maximum PDL Change over 0-65°C (Sample size 68)

Maximum Insertion Loss Change over 0-65°C (Sample size 68)


Specifications

Parameter	Premium Grade	Standard Grade
Model	IS3550-P	IS3550
Operating wavelength (λ)		1530-1570 nm
Typical insertion loss ¹	0.3 dB	0.4 dB
Maximum insertion loss ¹	≤ 0.5 dB	≤ 0.7 dB
Typical peak isolation	40 dB	35 dB
Minimum isolation	> 30 dB ²	> 28 dB ²
Polarization dependent loss	< 0.05 dB	< 0.1 dB
Polarization mode dispersion	< 0.03 ps	< 0.03 ps
Return loss	> 55 dB	> 50 dB
Maximum optical power		300 mW ³
Operating temperature range		0 to 60°C
Storage temperature range		-40 to 85°C
Fiber type	9/125/250 μ m, Corning SMF28	(900 μ m cylindrical package only)
Package dimensions - Rectangular (WxHxD)		6.35 x 6.15 x 29.5 mm
- Cylindrical (DxL)		5.5 x 34 mm

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

1. Measured without connectors
2. Detailed specifications of two-stage isolator with minimum isolation of 45 dB over the entire wavelength range can be found in separate datasheet entitled IS3500 Series.
3. High power version available

All information contained herein is believed to be accurate and is subject to change without notice. No responsibility is assumed for its use. JDS FIBER OPTICAL TECHNOLOGIES or manufacturer reserves the right to make changes, without notice, to product design, product components and product manufacturing methods.

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MKT-DS-0093 Rev. D 10/97 Printed in Canada