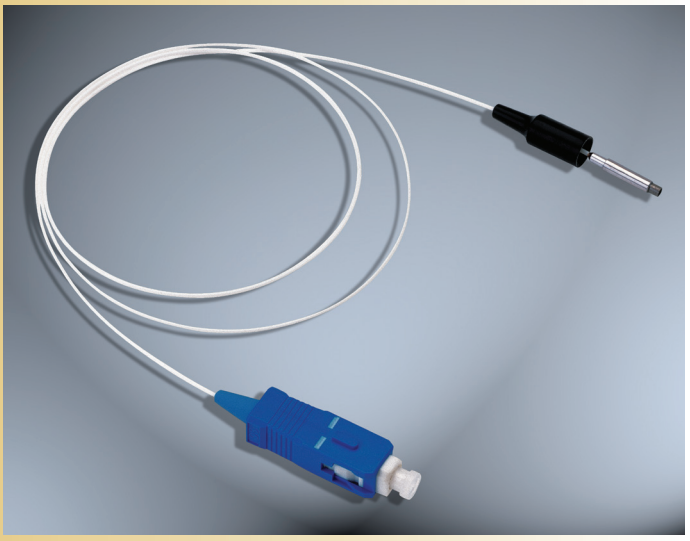
M-FP ISOLATOR PIGTAILS

Features:
- Ultra high isolation
- Minimum polarization dependent loss (PDL)
- Optical path epoxy free
- Low insertion loss
- Environmentally stable

Applications:
- Optical amplification
- Optical transmission
- CATV
- High-bit rate optical communications
- High speed analog optical systems



Performance Specifications:

ITEM	Isolator Pigtails	
Operating wavelength, nm	1310, 1550	
Stage	Single	Dual
Minimum Isolation, dB (over the center wavelength±15nm), (at 25°C, all SOP)	≥30	≥45
Typical Insertion Loss, dB (at 25°C, all SOP)	0.4	0.45
Maximum Insertion Loss, dB (over the operating range±20nm), (-20 ~ 60°C, all SOP)	0.5	0.7
Operating Temperature, °C	0 ~ +70	
Aperture Size, mm	0.8	
Storage Temperature, °C	-40 ~ +85	

Note: SOP = States of Polarization

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ISOLATOR PIGTAILS

Ordering Information:

M - FP - □ X - □□ - A □ - □□□□ - □□ / □□ - □

Stage Type

1	Single
2	Dual

Operating Wavelength

13	1310nm
14	1490nm
15	1550nm
XX	Others, please specify

Cable Type

T	Simplex, PVC tight buffer cable (0.9mm)
H	Simplex, Hytrel tight buffer cable (0.9mm)
X	Others, please specify

Pigtail Length

0001	1 meter	X050	0.5 meter
0002	2 meter	X150	1.5 meter
XXXX	Others, please specify		

Connector Type (isolator end/ the other end)

FC	FC type	AP	FC/APC type
SC	SC type	AS	SC/APC type
ST	ST type	MU	MU type
LC	LC type	NC	None
XX	Others, please specify		

Internal Code

M-II POLARIZATION INDEPENDENT ISOLATORS

Features:
- Ultra high isolation
- Minimum polarization dependent loss (PDL)
- Polarization mode dispersion (PMD) free
- Optical path epoxy free
- Low insertion loss
- Environmentally stable

Applications:
- Optical amplification
- Optical transmission
- CATV
- High-bit rate optical communications
- High speed analog optical systems

Performance Specifications:

ITEM	Polarization Independent Isolators			
Operating wavelength, nm	1310, 1550			
Stage	Single		Dual	
Grade	S	H	S	H
Minimum Isolation, dB (over the center wavelength±15nm), (at 25°C, all SOP)	30	29	45	43
Typical Insertion Loss, dB (at 25°C, all SOP)	0.4	0.5	0.5	0.7
Maximum Insertion Loss, dB (over the operating range±20nm), (0 ~ 70°C, all SOP)	0.5	0.7	0.7	0.9
Polarization dependent Loss, dB	≤0.1	≤0.15	≤0.1	≤0.15
Return Loss, dB (input/output)	60/55	55/50	60/55	55/50
Polarization Mode Dispersion, ps	≤0.25	≤0.25	≤0.05	≤0.7
Operating Temperature, °C	0 ~ +70			
Storage Temperature, °C	-40 ~ +85			
Maximum Output Power, mW	300			
Package Size, mm	E-type Ø5.5 x 34 mm for coated fiber (250μm) and for loose tube cable (900μm)			

Note: 1. SOP = States of Polarization
2. I.L.: Without Connector Loss.

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POLARIZATION INDEPENDENT ISOLATORS

Ordering Information:

M - II - □ - □□ - □ - □ - □ - □ - □ - □□ / □□

Stage Type

1	Single
2	Dual

Operating Wavelength

13	1310nm
15	1550nm
00	Others, please specify

Grade

S	Super
H	High

Pigtail Type (Input / Output)

C	Coated SMF fiber (250μm)
L	Loose tube cable (900μm)
Q	3.0mm cable
X	Others, please specify

Packaging Dimension

E	E type
X	Others, please specify

Pigtail Length (for each end)

1	1 meter	A	0.5 meter
2	2 meter	B	1.5 meter
X	Others, please specify		

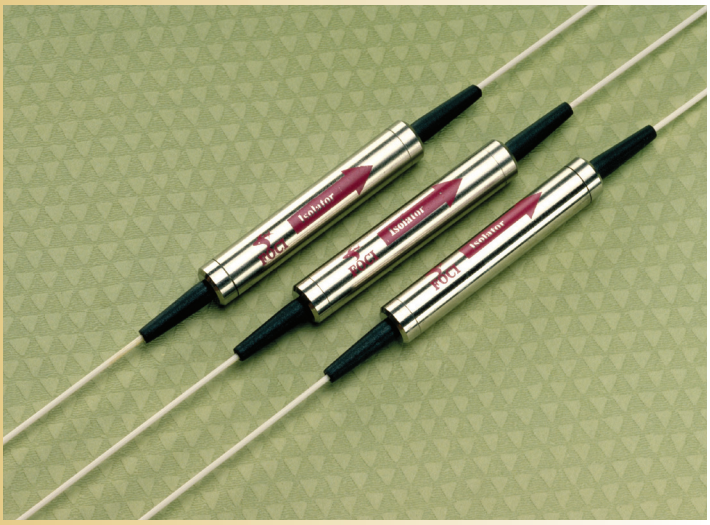
Connector Type (Input / Output)

FC	FC type	AP	FC/APC type
SC	SC type	AS	SC/APC type
ST	ST type	MU	MU type
LC	LC type	NC	None
XX	Others, please specify		

M-IS SUPPEME POLARIZATION INDEPENDENT ISOLATORS

Features:
- Ultra high isolation
- Minimum polarization dependent loss (PMD)
- Polarization mode dispersion (PMD) free
- Optical path epoxy free
- Low insertion loss
- Environmentally stable

Applications:
- Optical amplification
- Optical transmission
- CATV
- Fiber laser
- Testing equipment



Performance Specifications:

ITEM	Supreme Polarization Independent Isolators
Operating wavelength, nm	1310, 1550
Stage	Dual
Grade	High (H)
Peak Isolation, dB (typical)	≥60
Minimum Isolation, dB (over the center wavelength ± 20nm), (at 25°C, all SOP)	55
Typical Insertion Loss, dB (over the center wavelength ± 20nm), (at 25°C, all SOP)	0.9
Maximum Insertion Loss, dB (over the operating range ± 20nm), (0 ~ 70°C, all SOP)	1.3
Polarization dependent Loss, dB	≤0.15
Return Loss, dB (input/output)	≥60
Polarization Mode Dispersion, ps	≤0.10
Operating Temperature, °C	0 ~ +70
Storage Temperature, °C	-45 ~ +85
Maximum Output Power, mW	300
Package Size, mm	E-type Ø5.5 x 34 mm for coated fiber (250μm) and for loose tube cable (900μm)

Note: 1. SOP = States of Polarization
2. I.L.: Without Connector Loss.

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SUPREME POLARIZATION INDEPENDENT ISOLATORS

Ordering Information:

M - IS - 2 - □□ - □ - □ - □ - □ - □ - □□ / □□

Operating Wavelength

13	1310nm
15	1550nm
00	Others, please specify

Grade

H	High

Pigtail Type (Input / Output)

C	Coated fiber (250μm)
L	Loose tube (900μm)
X	Others, please specify

Packaging Dimension

E	E type
X	Others, please specify

Pigtail Length (for each end)

1	1 meter	A	0.5 meter
2	2 meter	B	1.5 meter
X	Others, please specify		

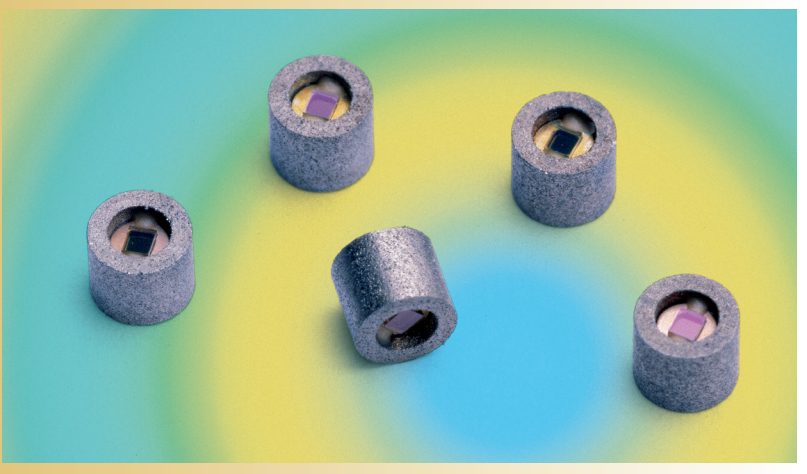
Connector Type (Input / Output)

FC	FC type	AP	FC/APC type
SC	SC type	AS	SC/APC type
ST	ST type	MU	MU type
LC	LC type	NC	None
XX	Others, please specify		

M-FD MINI FREE SPACE OPTICAL ISOLATORS

Features:
- Epoxy free
- Ultra high isolation
- High extinction ratio
- Low insertion loss
- Large aperture
- Small size

Applications:
- Coherent communications
- Optical transmissions
- CATV
- Laser diode packaging
- Optical sensor



Performance Specifications:

ITEM	Mini Free Space isolator	
Center wavelength, nm	1310, 1490, 1550	
Stage	Single	Dual
Minimum Isolation, dB (At the center wavelength, 25 °C)	30	45
Typical Insertion Loss, dB (Over the center wavelength ± 20nm, at 25 °C)	0.1	0.15
Maximum Insertion Loss, dB (Over the enter wavelength ± 20nm, -20 ~ 60 °C)	0.2	0.3
Operating Temperature, °C	0 ~ +70	
Aperture Size, mm	0.8	
Storage Temperature, °C	-40 ~ +85	

Note: SOP = States of Polarization

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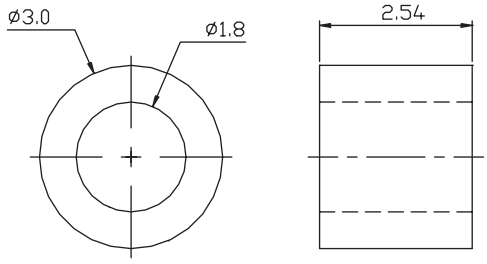
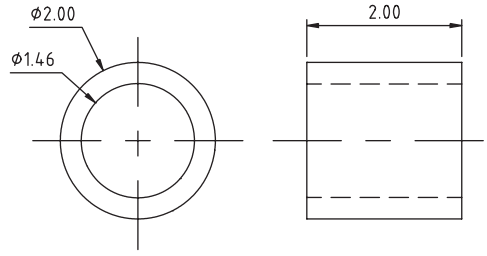
MINI FREE SPACE OPTICAL ISOLATORS

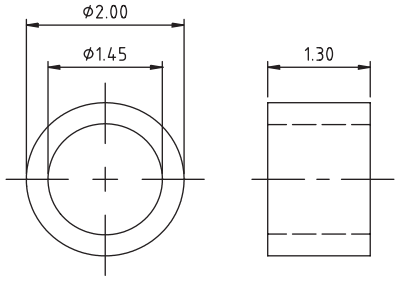
Packaging Dimension:



Type 1 (Ø 3 x 2.54mm)



Type 2 (Ø 2.0 x 2.0mm)



Type 3 (Ø 2 x 1.3mm)

Ordering Information:

M - FD - □ - □□ - □

Stage Type

1	Single
2	Dual

Operating Wavelength

13	1310nm
14	1490nm
15	1550nm
00	Others, please specify

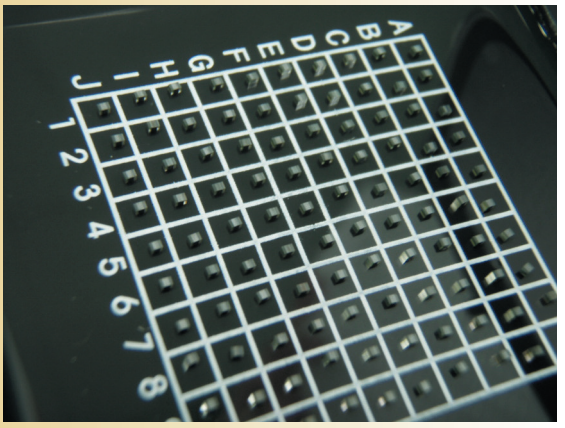
Package Type

1	Ø3.0 * 2.54
2	Ø2.0 * 2.0 (for single stage only)
3	Ø2.0 * 1.3 (for single stage only)
X	Others, please specify

M-SD-FD MINI FREE SPACE OPTICAL ISOLATORS

Features:
- Ultra high isolation
- Low insertion loss
- Different wavelength optimized housing design
- Castom available

Applications:
- Coherent communications
- Optical transmissions
- CATV
- Laser diode packaging
- Optical sensor



Performance Specifications:

ITEM	Mini Free Space Optical Isolator	
Center wavelength, nm	1270~1610	
Stage	Single	Dual
Minimum Isolation, dB (At the center wavelength, 25 °C)	30	45
Typical Insertion Loss, dB (Over the center wavelength ± 20nm, 25 °C)	0.15	0.2
Maximum Insertion Loss, dB (Over the enter wavelength ± 20nm, -20 ~ 60 °C)	0.3	0.4
Operating Temperature, °C	0 ~ +70	
Aperture Size, mm	0.4, 0.8, or Customer Specify	
Storage Temperature, °C	-40 ~ +85	

Note: SOP = States of Polarization

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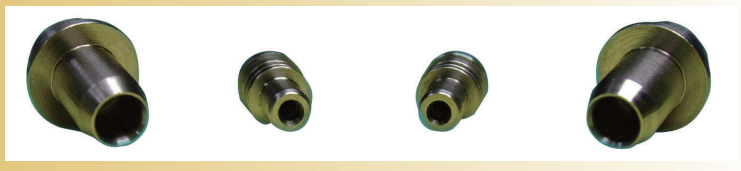
M-SD-FS RECEPTACLES WITH ISOLATORS

Features:

- Low IL and high isolation
- Different wavelengths optimized
- Custom housing design



Applications:

- Tramsmitter Optical Sub-assembly (TOSA)

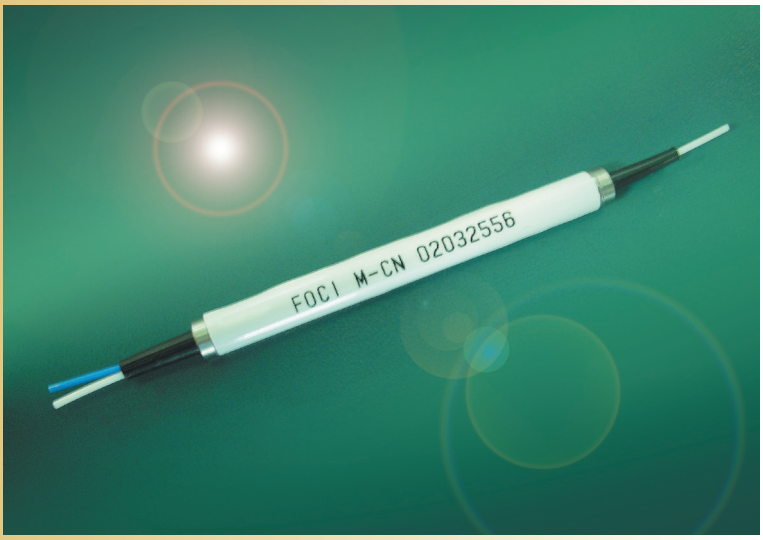
Performance Specifications:

ITEM	Recetpacles With Isolators
Mode Type	Singlemode
Diameter, mm	Ø1.25,Ø2.5,or custom design
Insertion Loss, dB	≤0.4
Center Wavelegth, nm	1270~1610
Isolation, dB @ 1310/1550 nm, 25℃	≥30dB
Effective Clear Apertare, nm	>/=0.4 (or Customer Specify)
Operating Temperature, ℃	0~+70
Storage Temperature, ℃	-40~85

M-CN POLARIZATION INDEPENDENT CIRCULATORS

Features:
- Extra high isolation
- Low PDL
- PMD free
- Low cross-talk
- Low insertion loss
- Environmentally stable
- Epoxy-free optical path

Applications:
- Optical amplifier
- Optical transmitter
- CATV
- Testing instruments
- Bi-directional transmission system
- Dense WDM
- Add/Drop Multiplexer (ADM)
- Dispersion compensation



Performance Specifications:

ITEM	Polarization Independent Circulators		
	Type A	Type B	Wideband (5W)
Configurations	Port 1→ 2→3		
Operating wavelength, nm	1310 or 1550 (±20)		1470 ~ 1610 nm
Minimum Isolation, dB (at 25°C, all SOP)	40	35	30 (1470~1610nm) 38 (1520~1580nm)
Maximum Insertion Loss, dB (at 0 ~ 70°C, all SOP)	0.8	1.0	1.4 (1470~1490nm) 1.3 (1490~1500nm) 1.1 (1500~1600nm) 1.4 (1600~1610nm)
Polarization dependent Loss, dB	≤0.15		≤ 0.20
Maximum Optical Power, mW	500		
Return Loss, dB (input/output)	≥50		
Polarization Mode Dispersion, ps	≤0.1		
Operating Temperature, °C	0 ~ +70		
Storage Temperature, °C	-40 ~ +85		
Dimension, mm	Ø 5.5 x 60		

Note: 1. SOP = States of Polarization
2. I.L.: Without Connector Loss.

POLARIZATION INDEPENDENT CIRCULATORS

Ordering Information:

M - CN - □□ - □ - E - □ - □□ / □□

Operating Wavelength

5A	1550nm+/-20nm (Type A)	3A	1310nm+/-20nm (Type A)
5B	1550nm+/-20nm (Type B)	3B	1310nm+/-20nm (Type B)
5W	1470nm-1610nm (Wideband)		
XX	Others, please specify		

Pigtail Type (for both ends)

C	Coated SM fiber (250μm)
L	Loose tube SM fiber (900μm)
X	Others, please specify

Pigtail Length (for each end)

1	1 meter	A	0.5 meter
2	2 meter	B	1.5 meter
X	Others, please specify		

Connector Type (port 1 / port 2 & port 3)

FC	FC type	AP	FC/APC type
SC	SC type	AS	SC/APC type
ST	ST type	MU	MU type
LC	LC type	NC	None
XX	Others, please specify		

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