DATASHEET

Fiber FBT Coupler Splitters

Make Highly stable optical signal distribution transmission

OMC INDUSTRY CO.LIMTED

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www.omcftth.com sales@omcftth.com 0086-755-29163551

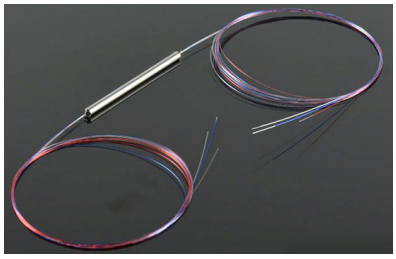
FBT Singlemode Fiber Coupler Splitter- Steel tube type

Description

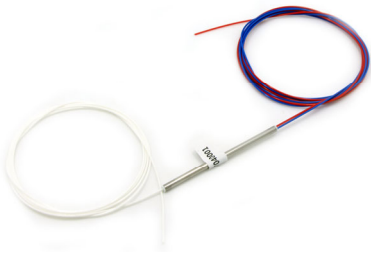
Fused Biconic Taper (FBT) coupler, also be called FBT splitter, based on the traditional technology, it is to bundle together two or more optical fibers, and then pull the cone machine melt stretching, and real-time monitoring the change of the ratio, spectral ratio requirements after melt stretching, one side retain a single fiber (the rest of the cut) as input, the other end is a multi-channel output.

As one of the key components for GPON FTTx networks, optical splitters can be placed in the Central Office or in one of the distribution points (outdoor or indoor) because the FBT coupler are highly stable for multiport optical signal splitting with low insertion loss. FBT couplers are designed for power splitting and tapping in telecommunication equipment, CATV network, and test equipment

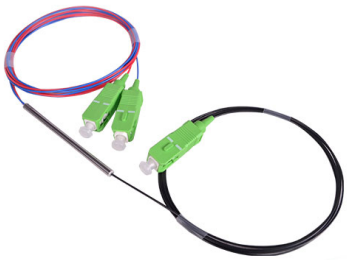
OMC's FBT Singlemode coupler 1X2 2X2 offer very low insertion loss, low polarization dependence and excellent environmental stability Accurate coupling ratio from 50/50 to 1/99 and fiber type 250um bare fiber, 3mm and 900um loose tube fiber are available with very tight uniformity. Singlemode standard coupler and wideband coupler components find extensive application to perform power splitting and monitoring functions in all kinds of optical communication.



FBT Coupler with Bare Fiber without connector



FBT Coupler with 900um cable without connector



FBT Coupler with 900um cable and connector

Key Features

Low insertion loss
Low polarization dependent loss
High Return Loss Optional
Split Ratio 20/80, 40/60. (50/50 as default.)
Compact for small application areas like in closure or splice trays
Wide Operating Temperature and Wavelength
Excellent Environmental & Mechanical Stability
Qualified under Telcordia GR-1221 and GR-1209 High Quality Plastic ABS Box

Applications

FTTX (FTTP, FTTH, FTTN, FTTC)
Passive Optical Networks (PON)
Local Area Networks (LAN)
CATV Systems Amplifying,
Monitoring System

Coupling Ratio/insertion Loss Conversion Chart

Coupling Ratio	Insertion Loss	
Quality Level	P Grade	A Grade
40/60	4.4/2.5	4.6/2.8
30/70	5.6/1.8	6.0/2.0
20/80	7.4/1.1	7.7/1.3
10/90	10.8/0.6	11.6/0.8
5/95	14.2/0.4	14.6/0.5
2/98	18.5/0.2	19.0/0.3
1/99	21.0/0.2	21.5/0.3

*Measured under the stable mode condition with LED light source.

FBT Singlemode Fiber Coupler Splitter- Steel tube type

Specification

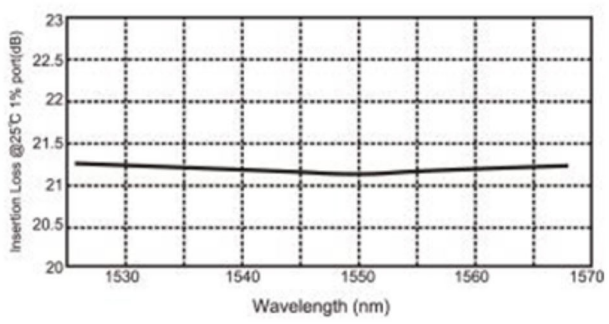
Single Standard Couplers		
Grade	P Grade	A Grade
Coupling Ratio （%）	50/50	50/50
Excess Loss (Typical)（dB）	0.07	0.1
Maximum insertion loss（dB）	3.4	3.5
Polarization Sensitivity (dB)	0.15	0.2
Operating Wavelength （nm）	1310,1480,1550 or custom wavelength	

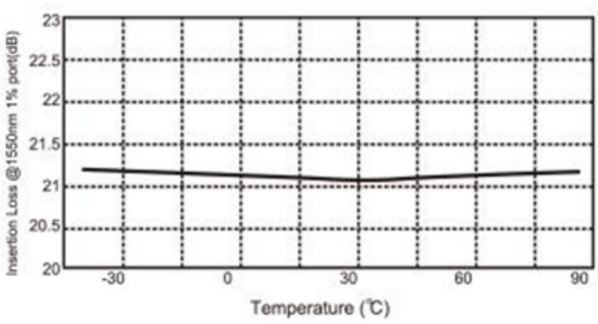
Single Wideband Couplers		
Grade	P Grade	A Grade
Coupling Ratio （%）	50/50	50/50
Excess Loss (Typical)（dB）	0.07	0.1
Maximum Insertion loss（dB）	3.4	3.6
Polarization Sensitivity (dB)	0.15	0.2
Operating Wavelength （nm）	1310±40,1550±40,or custom wavelength	
Coupling Ratio （%）	1~50	
Directivity (dB)	≥55	
Operating Temperature(℃)	-20~+80	
Storage Temperature(℃)	-40~+85	
Fiber Type	SMF-28	
Fiber Pigtail Length （m）	1	
Port Configuration	1×2 or 2×2	
Dimensions (mm)	Package D,E,F,G	

Package Dimensions & Pigtail Style

Package Dimensions:	
Package D:	3mm x 45mm stainless steel tube
Package E:	3mm x 54mm stainless steel tube
Package F:	3mm x 60mm stainless steel tube
Package G:	10mm x 20mm x 90mm ABS cassette
Package H:	10mm x 80mm x 100mm ABS cassette
Package I:	18mm x 80mm x 120mm ABS cassette
Package J:	18mm x 115mm x 140mm ABS cassette
Pigtail Style:	
Package D,E:	250um bare fiber
Package F	250um bare fiber or 900um loose tube
Package G,H,I,J:	2mm,3mm cable or 900um loose tube

The relation picture of Insertion Loss & Wavelength、Temperature





FBT Singlemode Fiber Coupler Splitters-ABS module type

Description

Fused Biconic Taper (FBT) coupler, also be called FBT splitter, based on the traditional technology, it is to bundle together two or more optical fibers, and then pull the cone machine melt stretching, and real-time monitoring the change of the ratio, spectral ratio requirements after melt stretching, one side retain a single fiber (the rest of the cut) as input, the other end is a multi-channel output.

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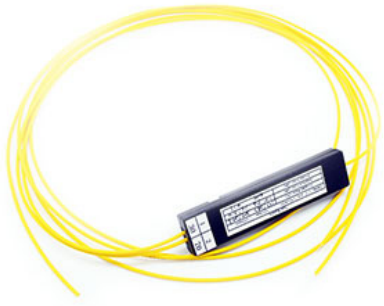
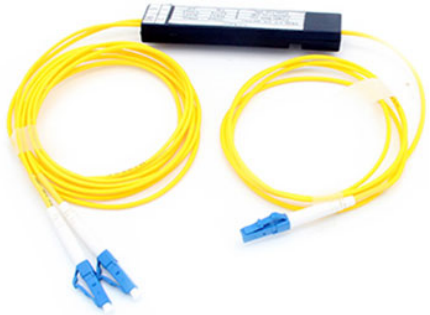
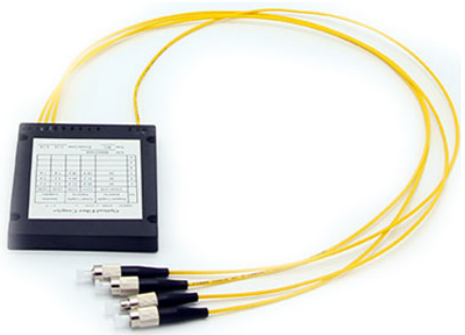
OMC's FBT Singlemode coupler 1X2 2X2 offer very low insertion loss, low polarization dependence and excellent environmental stability Accurate coupling ratio from 50/50 to 1/99 and fiber type 250um bare fiber, 3mm and 900um loose tube fiber are available with very tight uniformity. Singlemode standard coupler and wideband coupler components find extensive application to perform power splitting and monitoring functions in all kinds of optical communication.



1x2 with 2.0mm cable without connector



1x2 with 2.0mm cable with connector



1x3 with 2.0mm cable with connector

Coupling Ratio/insertion Loss Conversion Chart

Coupling Ratio	Insertion Loss	
	Premium Grade	A Grade
40/60	4.7/2.7	5.0/2.9
30/70	6.0/2.0	6.4/2.2
20/80	7.9/1.5	8.5/1.7
10/90	11.3/0.65	12.0/0.8
5/95	14.8/0.4	15.3/0.55
1/99	22.5/0.3	23.0/0.35
Coupling Ratio （%）	1~50	
Directivity (dB)	> 55	
Operating Temperature(℃)	-20~+80	
Storage Temperature(℃)	-40~+85	
Fiber Type	Corning single mode SMF-28	
Fiber Pigtail Length （m）	1	
Port Configuration	1×2 or 2×2	
Dimensions (mm)	Package D,E,F,G	

2x2 with 2.0mm cable with connector

1x10 with 2.0mm cable with connector

FBT Singlemode Fiber Coupler Splitters-ABS module type

Specification

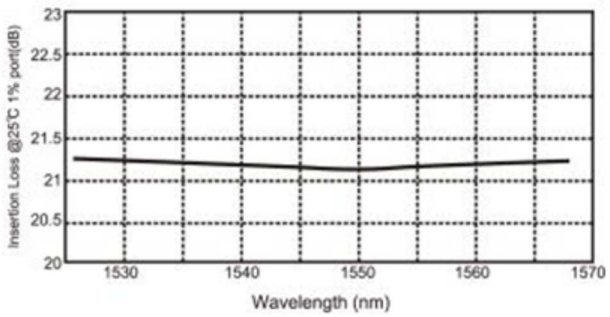
Single mode Dual Window Wideband Couplers		
Quality Grade	Premium Grade	A Grade
Coupling Ratio （%）	50/50	50/50
Excess Loss (Typical) （dB）	0.1	0.15
Maximum insertion loss （dB）	3.6	3.8
Uniformity (Max.) (dB)	0.7	1.0
Polarization Sensitivity (dB)	0.15	0.2
Operating Wavelength （nm）	1310/1550±40 or custom wavelength	

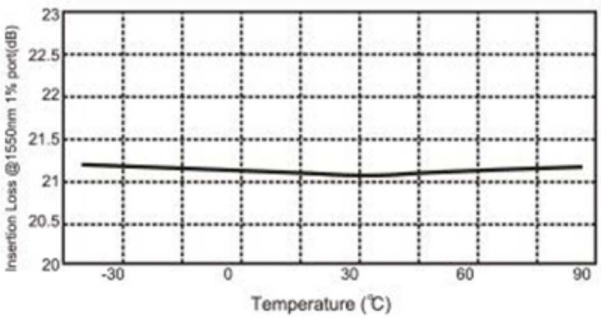
*Measured under the stable mode condition with LED light source.

Package Dimensions & Pigtail Style

Package Dimensions:	
Package D:	3mm x 45mm stainless steel tube
Package E:	3mm x 54mm stainless steel tube
Package F:	3mm x 60mm stainless steel tube
Package G:	10mm x 20mm x 90mm ABS cassette
Package H:	10mm x 80mm x 100mm ABS cassette
Package I:	18mm x 80mm x 120mm ABS cassette
Package J:	18mm x 115mm x 140mm ABS cassette
Pigtail Style:	
Package D,E:	250um bare fiber
Package F	250um bare fiber or 900um loose tube
Package G,H,I,J:	2mm,3mm cable or 900um loose tube

The relation picture of Insertion Loss & Wavelength、Temperature





Key Features

Low insertion loss
Low polarization dependent loss
High Return Loss Optional
Split Ratio 20/80, 40/60. (50/50 as default.)
Compact for small application areas like in closure or splice trays
Wide Operating Temperature and Wavelength
Excellent Environmental & Mechanical Stability
Qualified under Telcordia GR-1221 and GR-1209 High Quality Plastic ABS Box

Applications

FTTX (FTTP, FTTH, FTTN, FTTC)
Passive Optical Networks (PON)
Local Area Networks (LAN)
CATV Systems Amplifying,
Monitoring System

FBT Multimode Fiber Coupler Splitters-ABS module type

Description

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OMC's **Multimode Fiber Optic Coupler**(**MM FBT Coupler**) are fabricated from multimode fibers with core diameters of 50um ,62.5um or 100um. Standard multimode couplers are commonly used in short distance communications with LED sources operating at 1310nm or 850nm. Multimode couplers are wavelength independent over a broad range of wavelengths (600nm to 1610nm) with uniform modal power distribution launch condition, multimode tree/star couplers NX4(n=1,2,4) NX8(n=1,2,8) NX16(n=1,2,16) port ratios are available.

1x2 with 2.0mm cable without connector

1x2 with 2.0mm cable with connector

1x3 with 2.0mm cable with connector

Coupling Ratio/insertion Loss Conversion Chart

Coupling Ratio	Insertion Loss	
Coupling Ratio （%）	Premium Grade	A Grade
40/60	5.2/3.3	5.6/3.7
30/70	6.5/2.6	7.0/3.0
20/80	8.4/2.0	8.8/2.5
10/90	11.8/1.5	12.3/2.0

*Measured under the stable mode condition with LED light source.

Key Feature

Low Excess Loss
Uniform Power Splitting
Rugged Package Excellent
Environmental & Mechanical Stability

Applications

Long-haul Telecommunications
Digital, Hybrid and AM-Video Systems
CATV Systems
High Speed Local Area Networks
Fiber Sensors

FBT Multimode Fiber Coupler Splitters-ABS module type

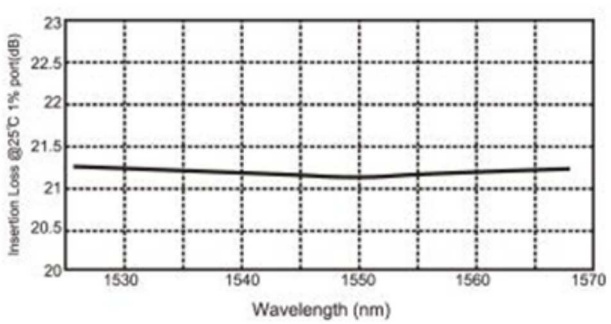
Specification

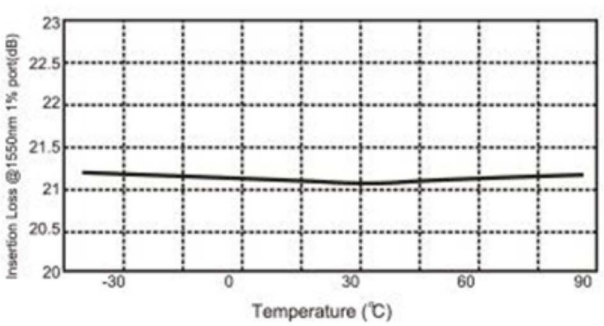
Parameter	Multimode Standard Fiber Couplers	
Coupling Ratio （%）	50/50	
Grade	P Grade	A Grade
Excess Loss (Typical) （dB）	0.7	1.0
Max.Insertion Loss （dB）	4.2	4.5
Uniformity (Max.)(dB)	0.6	0.8
Directivity(Min.)(dB)	35	
Operating Wavelength （nm）	800-1600	
Central Wavelength (nm)	850 or 1310 or 1550	
Operating Temperature(℃)	-20~+85	
Fiber Type	Corning multimode 50/125, 62.5/125	
Fiber Pigtail Length （m）	1 m or custom length	
Port Configuration	1×2 or 2×2	
Dimensions (mm)	Package D,E,G	

Package Dimensions & Pigtail Style

Package Dimensions:	
Package D:	3mm x 45mm stainless steel tube
Package E:	3mm x 54mm stainless steel tube
Package F:	3mm x 60mm stainless steel tube
Package G:	10mm x 20mm x 90mm ABS cassette
Package H:	10mm x 80mm x 100mm ABS cassette
Package I:	18mm x 80mm x 120mm ABS cassette
Package J:	18mm x 115mm x 140mm ABS cassette
Pigtail Style:	
Package D,E:	250um bare fiber
Package F	250um bare fiber or 900um loose tube
Package G,H,I,J:	2mm,3mm cable or 900um loose tube

The relation picture of Insertion Loss & Wavelength、Temperature





Fiber PLC Splitter

Order Index

Patch cord	Coupling	Wavelength	Pigtail Type	Input Connector	Input Cable Color	Output Connector	Output Cable Color	Fiber type	Package	Ratio
Z2-FBT Splitter	12-1 : 2	1-Single Window	1 - 250um Bare fiber	A LC UPC	A Blue	A LC UPC	A Blue	1 - G652D	D	1/99
	22-2 : 2	2-Dual Windows	2 - 900um loose tube	B SC UPC	B Orange	B SC UPC	B Orange	2 - G657A1	E	.
	13-1 : 3	3-3 windows	3 - 2mm	C FC UPC	C Green	C FC UPC	C Green	3 - G657A2/B2	F	.
	13-1 : 4	4-Wide Wavelength	4 - 3mm	D ST UPC	D Brown	D ST UPC	D Brown	4 - G657B3	G	.
				E LC APC	E Grey	E LC APC	E Grey	5 - OM1		.
				F SC APC	F White	F SC APC	F White	6 - OM2		.
				G FC APC	G Red	G FC APC	G Red	7 - OM3		.
				0 None	H Black	0 None	H Black	8 - OM4		50/50
					I Yellow		I Yellow	9 - OM5		
					J Purple		J Purple			
					K Pink		K Pink			
					L aqua		L aqua			
					M Magenta		M Magenta			
					X- other		X- other			

Wavelength

Single Window: 830nm,850nm,980nm,1310nm,1480nm,1550nm,1585nm

Dual Windows: 850nm/1310nm, 1310nm/1490nm, 1310nm/1550nm, 1310nm/1490nm

Three Windows: 1310nm+1490nm+1550nm

Wide wavelength: 1260nm to 1620nm

MM wavelength: 850nm