

Fused Coupler, Low Loss, C+L or S Band



Key Features

- Ultra low typical <0.05 dB excess loss
- Zero-slope design for low wavelength dependence
- Sub-miniature 28 mm length package option available
- Wide range of regular parts available
- 4 W power handling
- Proven reliability

Applications

- Signal monitoring in C+L band EDFA or RAMAN amplifier
- Network monitoring
- Network expansion
- Small form-factor modules (select housing option 1, 2 or 4)

The JDSU fused coupler, low loss, C+L or S band enables the accurate splitting and monitoring of optical signals in single-mode fiber. JDSU proprietary manufacturing technology provides uniquely low excess loss and wavelength dependence, along with low polarization and temperature dependence for both signal and tap ports.

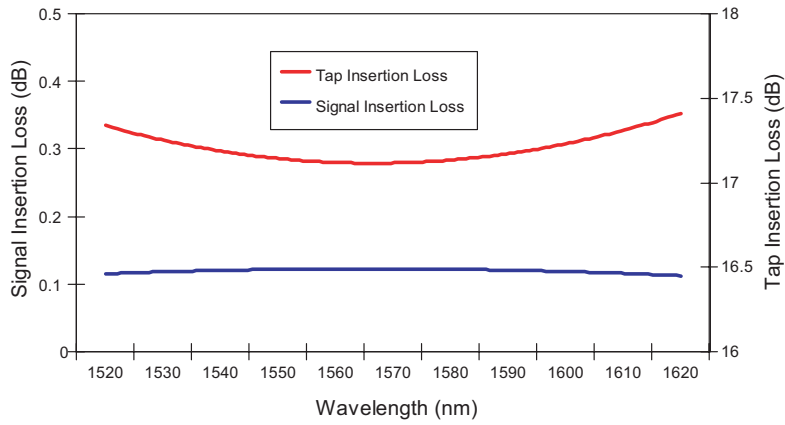
These high performance regular parts are available in a wide variety of tap ratios, wavelength ranges, housing and connector options and can therefore be readily specified in a wide variety of applications, enabling rapid design cycles and new project builds.

Compact housings such as the subminiature, miniature and the Ø 0.9 mm slim package enable reduced network (real-estate) costs by facilitating very small form-factor modules.

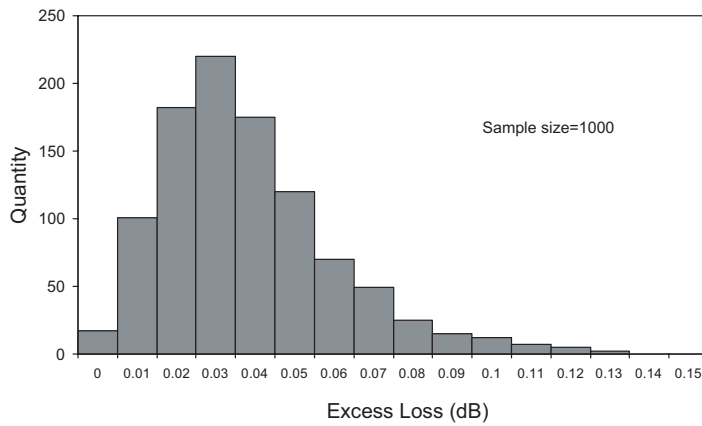
Reliability is assured through extensive Telcordia GR-1221 testing.

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2% Tap Coupler Insertion Loss

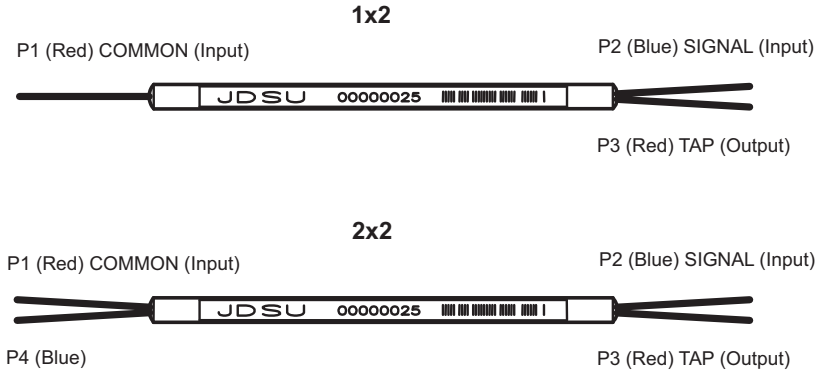


Excess Loss: Tap Coupler



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Configuration



Insertion Loss

Coupling Ratio	Grade	Available Housing Option	Insertion Loss ^{1,2} (Min./Max.)	Signal Path			Insertion Loss ^{1,2} (Min./Max.)	Tap Path		
				WDL ³ Max.	PDL ⁴ Max.	TDL ⁵ Max.		WDL ³ Max.	PDL ⁴ Max.	TDL ⁵ Max.
1%	P	2, 3, 4, 5, 6	NA/0.15 dB	0.04 dB	0.03 dB	0.02 dB	18.2/23.0 dB	0.90 dB	0.20 dB	0.20 dB
1%	A	1, 2, 3, 4, 5, 6	NA/0.18 dB	0.06 dB	0.05 dB	0.02 dB	17.4/23.0 dB	1.20 dB	0.25 dB	0.20 dB
2%	P	2, 3, 4, 5, 6	NA/0.18 dB	0.05 dB	0.03 dB	0.02 dB	16.0/18.6 dB	0.60 dB	0.15 dB	0.15 dB
2%	A	1, 2, 3, 4, 5, 6	NA/0.20 dB	0.07 dB	0.05 dB	0.02 dB	15.2/20.0 dB	1.00 dB	0.20 dB	0.15 dB
3%	P	2, 3, 4, 5, 6	NA/0.23 dB	0.05 dB	0.03 dB	0.04 dB	14.2/16.5 dB	0.50 dB	0.14 dB	0.15 dB
3%	A	1, 2, 3, 4, 5, 6	NA/0.28 dB	0.07 dB	0.05 dB	0.04 dB	13.7/17.4 dB	0.90 dB	0.20 dB	0.15 dB
5%	P	2, 3, 4, 5, 6	NA/0.32 dB	0.06 dB	0.03 dB	0.08 dB	12.1/14.3 dB	0.45 dB	0.12 dB	0.15 dB
5%	A	1, 2, 3, 4, 5, 6	NA/0.40 dB	0.08 dB	0.05 dB	0.08 dB	11.8/14.8 dB	0.80 dB	0.20 dB	0.15 dB
10%	P	2, 3, 4, 5, 6	NA/0.60 dB	0.07 dB	0.04 dB	0.08 dB	9.40/11.1 dB	0.40 dB	0.10 dB	0.13 dB
10%	A	1, 2, 3, 4, 5, 6	NA/0.70 dB	0.09 dB	0.06 dB	0.08 dB	9.00/11.4 dB	0.60 dB	0.15 dB	0.13 dB
20%	P	2, 3, 4, 5, 6	NA/1.15 dB	0.11 dB	0.05 dB	0.10 dB	6.30/7.90 dB	0.37 dB	0.10 dB	0.10 dB
20%	A	1, 2, 3, 4, 5, 6	NA/1.25 dB	0.15 dB	0.07 dB	0.10 dB	6.00/8.20 dB	0.55 dB	0.15 dB	0.10 dB
30%	P	2, 3, 4, 5, 6	NA/1.75 dB	0.15 dB	0.06 dB	0.10 dB	4.60/5.80 dB	0.35 dB	0.10 dB	0.10 dB
30%	A	1, 2, 3, 4, 5, 6	NA/1.85 dB	0.20 dB	0.08 dB	0.10 dB	4.50/6.00 dB	0.50 dB	0.15 dB	0.10 dB
40%	P	2, 3, 4, 5, 6	NA/2.50 dB	0.20 dB	0.07 dB	0.10 dB	3.85/4.40 dB	0.30 dB	0.09 dB	0.10 dB
40%	A	1, 2, 3, 4, 5, 6	NA/2.60 dB	0.30 dB	0.09 dB	0.10 dB	3.70/4.60 dB	0.45 dB	0.11 dB	0.10 dB
50%	P	2, 3, 4, 5, 6	2.7/3.30 dB ⁶	0.25 dB	0.08 dB	0.10 dB	2.70/3.30 dB ⁶	0.25 dB	0.08 dB	0.10 dB
50%	A	1, 2, 3, 4, 5, 6	2.6/3.50 dB	0.40 dB	0.10 dB	0.10 dB	2.60/3.50 dB	0.40 dB	0.10 dB	0.10 dB

1. Insertion loss over operating wavelength range (not including PDL and TDL).
 2. In 2x2 couplers with a coupling ratio of 20% or lower, insertion loss is not specified for launch through second input port (P4).
 3. Change in insertion loss over the operating wavelength range.
 4. Change in insertion loss over all input polarization states.
 5. Change in insertion loss from -5 to 75 °C.
 6. Insertion loss for housing option 4 is 3.4 dB (maximum).

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Housing Option

Housing Code	Description	1x2, 2x2 Dimensions (mm)	Pigtail
1	Subminiature	3.0 (Ø) x 28 (L)	Primary-coated fiber, 80 µm cladding
2	Miniature	3.0 (Ø) x 45 (L)	Primary-coated fiber
3	Regular	3.0 (Ø) x 50 (L)	Primary-coated fiber
4	Ø 0.9 mm slim	3.0 (Ø) x 60 (L)	Ø 0.9 mm loose-tube
5	Ø 0.9 mm semi-ruggedized	5.0 (Ø) x 75 (L)	Ø 0.9 mm loose-tube
6	Ø 3.0 mm fully ruggedized	80 (L) x 10 (W) x 8 (H)	Ø 3.0 mm fan-out sleeving

Specifications

Parameter	C+L band	S band
Operating wavelength range ¹	1528 to 1605 nm	1425 to 1500 nm
Return loss/Directivity	Minimum	55 dB
Pigtail tensile load	Maximum	5 N
Optical power handling ²	Maximum	4 W
Operating temperature range ³		-40 to 75 °C
Storage temperature range		-40 to 85 °C
Environmental qualification	Telcordia GR-1221	

- For wavelengths within ±5 nm of the specified range performance will be maintained for signal path insertion loss, PDL, TDL, directivity and return loss. The only parameters to increase will be tap insertion loss and WDL. Maximum values of increase are:
 Tap ratio=1%, maximum tap insertion loss and WDL increase=0.15 dB
 Tap ratio=2 to 9%, maximum tap insertion loss and WDL increase=0.10 dB
 Tap ratio=10 to 50%, maximum tap insertion loss and WDL increase=0.08 dB.
- For 1x2 and 2x2 configurations.
- TDL is specified from -5 to 75 °C.

Ordering Information

For more information on this or other products and their availability, please contact your local JDSU account manager or JDSU directly at 1-800-498-JDSU (5378) in North America and +800-5378-JDSU worldwide or via e-mail at customer.service@jdsu.com.

Sample: FFC-SK31PB110

Code	Passband Wavelength
1	C+L band
S	S band

Code	Coupling Ratio
1	1%
2	2%
3	3%
5	5%
A	10%
C	20%
E	30%
H	40%
K	50%

Code	Housing ¹
1	Subminiature
2	Miniature
3	Regular
4	Ø 0.9 mm slim
5	Ø 0.9 mm semi-ruggedized
6	Ø 3.0 mm fully ruggedized

Code	Configuration
1	1x2
2	2x2

Code	Grade ¹
A	Grade A
P	Premium

Code	Bandwidth
B	Broadband

Code	Fiber Type
1	Corning SMF-28 ²
3	Ø 80 µm cladding fiber ³
8	Ø 80 µm cladding High NA fiber ³

Code	Pigtail Length ⁴ (Minimum)
0	0.5 meter
1	1 meter

Code	Connectors
0	NONE
1	FC/PC
2	FC/SPC
3	FC/APC
4	SC/SPC
5	SC/APC
6	BICONIC
7	D4
8	ST
9	FC/UPC
A	SC/UPC
B	LC ⁵
C	MU
D	MPX
E	E2000
J	LC/UPC ⁵
K	LC/APC ⁵
L	E2000/APC

1. Refer to Insertion Loss table for options available.
2. Not available for housing option 1 (Subminiature).
3. Only available for housing option 1 (Subminiature).
4. Other pigtail lengths are available on request.
5. Not available for housing option 6.

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