

Fused Coupler, Two Window



Key Features

- Provides 1310 nm and 1550 nm wavelength coverage
- Broadband operation ± 40 nm
- High power handling
- Wide range of regular parts available "to go"
- Proven reliability

Applications

- Passive optical networks
- CATV
- Network expansion
- Fixed attenuation (select configuration option 0)

The two window fused coupler splits or combines light with high performance over two wavelength regions, maintaining a broad bandwidth in both. This component is manufactured with a highly automated process to achieve consistent quality and reliability.

Regular parts are available with a wide variety of tap ratios, housing and connector options and can therefore be readily specified in a wide variety of applications, enabling rapid design cycles and new project builds. Reliability is assured through qualification to Telcordia GR-1221.

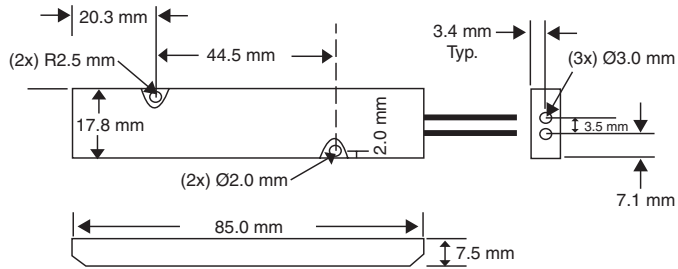
Compliance

- Telcordia GR-1221

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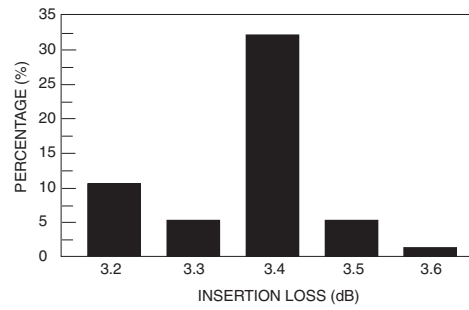
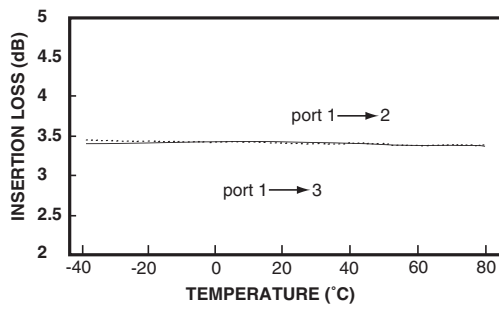
Dimensions Diagram: 1x2 Model, H-Package

(Specifications in mm unless otherwise noted. 3mm cable shown.)



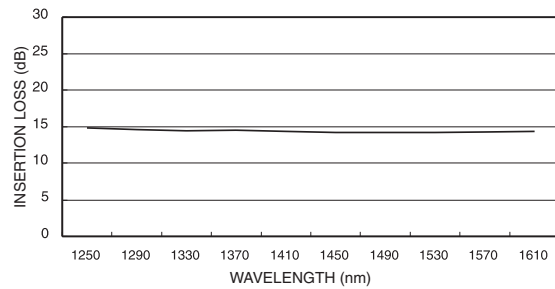
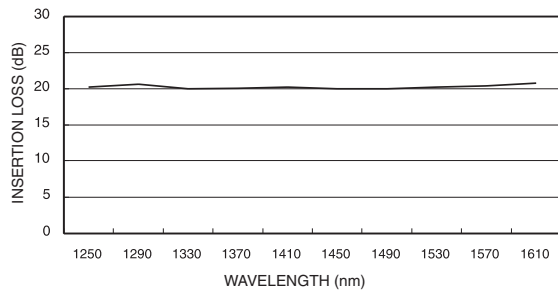
50/50 Temperature Stability

50/50 Insertion Loss



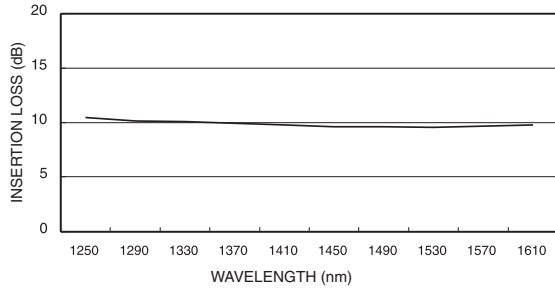
Wavelength Stability: 1310 and 1550 nm 1/99 Port 2 (1%)

Wavelength Stability: 1310 and 1550 nm 5/95 Port 2 (5%)

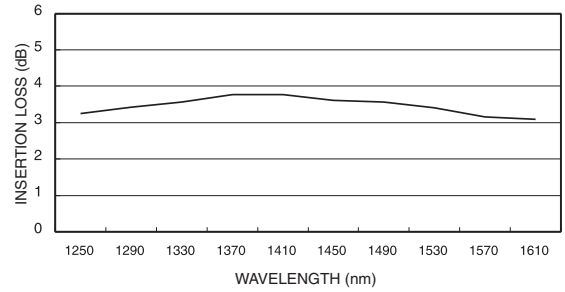


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Wavelength Stability: 1310 and 1550 nm 10/90 Port 2 (10%)



Wavelength Stability: 1310 and 1550 nm 50/50 Port 2 (50%)



Coupling Ratio/PDL Conversion Chart

Coupling Ratio	PDL Grade 1 (Tap Port Only)	PDL Grade 2 (Tap Port Only)
40 ~ 50 %	0.15 dB	0.20 dB
30 ~ 39 %	0.20 dB	0.20 dB
10 ~ 29 %	0.30 dB	0.30 dB
1 ~ 9 %	0.35 dB	0.35 dB

Qualification and Reliability Tests

Parameter	Specification
High temperature storage test	85 °C for 2,000 hours
Damp heat test	50 °C/90% RH for 2,000 hours
Water immersion test	43±2 °C, pH of 5.5±0.5 for 7 days
Vibration test	10 to 2,000 Hz, 20 g's, 3 axes
Shock test	3 axes, 40 g's, 11 ms, 5 blows each direction
Fiber torsion test	180° twist, 5 times both directions, 5 N force
Fiber pulling test	5 N for 1 minute

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Insertion Loss

Coupling Ratio	Attenuation	Grade	Signal Path Insertion Loss (Min./Max.)	Tap Path (or Attenuator Path) Insertion Loss (Min./Max.)
1%	20 dB	1	NA/0.3 dB	15.5/23.5 dB
1%	20 dB	2	NA/0.4 dB	14.8/24.1 dB
2%	17 dB	1	NA/0.3 dB	14.0/19.8 dB
2%	17 dB	2	NA/0.4 dB	13.8/21.0 dB
3%	15 dB	1	NA/0.4 dB	12.8/18.2 dB
3%	15 dB	2	NA/0.4 dB	12.8/19.5 dB
5%	13 dB	1	NA/0.4 dB	11.8/14.6 dB
5%	13 dB	2	NA/0.5 dB	10.6/18.9 dB
10%	10 dB	1	0.3/0.6 dB	9.6/11.3 dB
10%	10 dB	2	0.2/0.8 dB	8.3/12.7 dB
20%	7 dB	1	0.8/1.2 dB	6.5/7.9 dB
20%	7 dB	2	0.7/1.4 dB	5.9/8.5 dB
30%	5.2 dB	1	1.3/1.9 dB	4.7/6.0 dB
30%	5.2 dB	2	1.2/2.1 dB	4.3/6.4 dB
33%	4.8 dB	1	1.4/2.1 dB	4.2/5.6 dB
33%	4.8 dB	2	1.3/2.3 dB	3.9/5.9 dB
40%	4 dB	1	1.8/2.7 dB	3.5/4.7 dB
40%	4 dB	2	1.7/2.9 dB	3.2/5.0 dB
50%	3 dB	1	2.6/3.6 dB	2.6/3.6 dB
50%	3 dB	2	2.3/3.9 dB	2.3/3.9 dB

Specifications

Parameter (50/50 coupling ratio)

		Grade 1	Grade 2
Center wavelength		1310, 1550 nm	1310, 1550 nm
Insertion loss (without connectors)	Maximum	3.6 dB	3.9 dB
Excess loss (without connectors)	Typical	0.1 dB	0.3 dB
Uniformity	Maximum	0.8 dB	1.1 dB
Polarization dependent loss	Maximum	0.15 dB	0.2 dB
Optical return loss	Minimum	50 dB	50 dB
Directivity	Minimum	55 dB	55 dB
Temperature coefficient	Typical	0.002 dB/°C	0.002 dB/°C
Package dimensions			
S package (D x L)		3.0 x 54 mm	3.0 x 54 mm
L package (D x L)		3.6 x 70 mm	3.6 x 70 mm
H package (L x W x H)		85 x 17.8 x 7.5 mm	85 x 17.8 x 7.5 mm
Operating temperature ¹		-40 to 85 °C	-40 to 85 °C
Storage temperature ¹		-50 to 85 °C	-50 to 85 °C

1. -20 to 70 °C for 3.0 mm cable.

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-AKS11B110

FFC- A					B	1			
Code	Passband Wavelength	Code	Housing	Code	Grade	Code	Fiber Type	Code	Connectors
A	1310/1550 nm±40 nm	H	Ø 3.0 mm cable	1	Grade 1	1	Corning SMF-28	0	NONE
		L	Ø 900 µm fiber	2	Grade 2			1	FC/PC
		S	Ø 250 µm fiber					2	FC/SPC
Code	Coupling Ratio	Code	Configuration	Code	Bandwidth	Code	Pigtail Length	3	FC/APC
1	1%	0	1x1 (attenuator)	B	Broadband	0	0.5 meter	4	SC/SPC
2	2%	1	1x2			1	1 meter	5	SC/APC
3	3%	2	2x2			2	2 meters	6	BICONIC
5	5%					3	3 meters	7	D4
A	10%					4	4 meters	8	ST
C	20%					5	5 meters	9	FC/UPC
E	30%					6	6 meters	A	SC/UPC
F	33%					7	7 meters	B	LC
H	40%					8	8 meters	C	MU
K	50%					9	9 meters		
						A	10 meters		

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