

Amplifier Hybrid with Thin Film Coupler and Isolator

AHC Series



Key Features

- Multifunction device: isolation, pump multiplexing and/or tap
- Wide wavelength flatness over signal/pump wavelength range
- High power handling
- · High reliability
- Compact design
- High WDM/isolator isolation

Applications

- EDFA
- · Raman amplifiers
- Other custom configurations (integrated modules) such as optical supervisory channel (OSC) at 1510 nm and 1625 nm

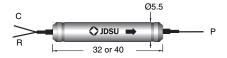
This device is a combination of a polarization independent optical isolator, and either a WDM filter or tap coupler. These devices are ideal for high power applications.

The AHC Series Integrated Component has extremely low polarization sensitivity, low insertion loss and high isolation for both WDM filter and isolators. Designed for compact and easy installation, it eliminates splices, requires less fiber routing and reduces losses when compared to discrete components.

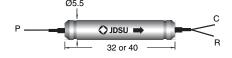
Its high performance provides exceptionally stable signal isolation and wavelength division multiplexing over wide wavelength/temperature ranges and all polarization states. It is ideal for fiber amplifier and WDM network applications.

Dimensions Diagram

(Specifications in mm unless otherwise noted.)

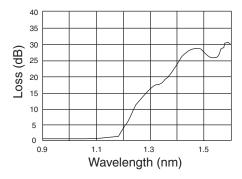


Backward Pump/Tap

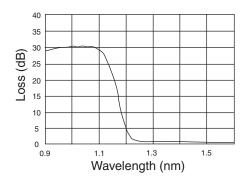


Forward Pump

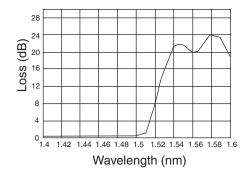
980/1550 nm Model: 980 Channel



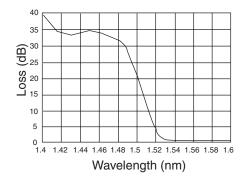
980/1550 nm Model: 1550 Channel



1480/1550 nm Model: 1480 Channel



1480/1550 nm Model: 1550 Channel



Tap Ratio and Insertion Loss Table

Code	Tap Ratio	One-Stage Isolator C to P Insertion Loss	One-Stage Isolator C to R Insertion Loss	Two-Stage Isolator C to P Insertion Loss	Two-Stage Isolator C to R Insertion Loss
1	1%	0.6 dB Max.	20±1 dB	0.7 dB Max.	20±1 dB
2	2%	0.6 dB Max.	17±1 dB	0.7 dB Max.	17±1 dB
3	3%	0.7 dB Max.	15±1 dB	0.8 dB Max.	15±1 dB
4	4%	0.7 dB Max.	14±1 dB	0.8 dB Max.	14±1 dB
5	5%	0.8 dB Max.	13±1 dB	0.9 dB Max.	13±1 dB
A	1.8%	0.6 dB Max.	17.5±1 dB	0.7 dB Max.	17.5±1 dB
T	10%	1.0 dB Max.	10±1 dB	1.1 dB Max.	10±1 dB

Specifications

		l						
Parameter		Tap and One-Stage	Tap and Two-Stage	1480 WDM and One-Stage	1480 WDM and Two-Stage	980 WDM and One-Stage	980 WDM and Two-Stage	
		Isolator	Isolator	Isolator	Isolator	Isolator	Isolator	
Signal central wavelength,	λο	C, L or S	C, L or S	C, L or 1	C,L or 1	C, L or 1	C.Lor1	
oighar central wavelength,	700	(C=1550 nm, L=1590 nm, 1=1570 nm, S=1510 nm)						
Signal wavelength range, λ	LS	C, L or S	C, L or S	C, L or 1	C, L or 1	C, L or 1	C, L or 1	
		(C=1	530 to 1580 nm, L	=1590±20 nm, 1=C	C+L=1530 to 1610nr	n, S=1490 to 1530 n	m)	
Pump channel wavelength range, λρ		N/A	N/A	1465 to 1495 nm	1465 to 1495 nm	950 to 1010 nm	950 to 1010 nm	
Port configuration		Backward	Backward	Forward or	Forward or	Forward or	Forward or	
		(note ¹)	(note1)	backward	backward	backward	backward	
				(note ²)	(note ²)	(note ²)	(note ²)	
Insertion loss at λs (note ³)	Max.	See table on page 2	See table on page 2	0.5 dB	0.6 dB	0.6 dB	0.7 dB	
Wavelength dependent	Max.	0.2 dB	0.2 dB	0.15 dB	0.2 dB	0.15 dB	0.2 dB	
variation at λs and								
C, L, or S bands (note ³)								
Wavelength dependent	Max.	NA	NA	0.25 dB	0.3 dB	0.25 dB	0.3 dB	
variation at λs and								
C+L band (note ³)								
PDL at λs (note ³)	Max.	0.1 dB	0.2 dB	0.06 dB	0.08 dB	0.06 dB	0.08 dB	
PMD at λs (note ³)	Max.	0.05 ps	0.05 ps	0.05 ps	0.05 ps	0.05 ps	0.05 ps	
Isolation of isolator	Min.	30 dB	42 dB	30 dB	45 dB	30 dB	45 dB	
$at \lambda s (note^4)$								
Isolation of WDM	Min.	N/A	N/A	30 dB	30 dB	30 dB	30 dB	
$at \lambda_P \text{ (note}^5)$								
Insertion loss (C to R) at λ _P	Max.	See table on page 2	See table on page 2	0.4 dB	0.4 dB	0.6 dB	0.6 dB	
$PDL (C \text{ to } R) \text{ at } \lambda_P$	Max.	0.05 dB	0.05 dB	0.05 dB	0.05 dB	0.1 dB	0.1 dB	
Directivity (P to R) at λs	Min.	60 dB	60 dB	60 dB	60 dB	60 dB	60 dB	
Directivity (R to P) at λ _P Min		N/A	N/A	60 dB	60 dB	60 dB	60 dB	
Optical return loss Min		50 dB	50 dB	50 dB	50 dB	50 dB	50 dB	
Maximum optical		500 mW	500 mW	500 mW	500 mW	150 mW	150 mW	
power (standard)								
Maximum optical power		2000 mW	2000 mW	2000 mW	2000 mW	450 mW	450 mW	
(high power option)								
Tensile load Max.		5 N	5 N	5 N	5 N	5 N	5 N	
Operating temperature		-5 to 70 °C						
Storage temperature		-40 to 85 °C						
Package dimensions (D	0 x L)	5.5 mm x 32 mm for bare fiber and 5.5 mm x 40 mm for bare fiber or loose tube						
Fiber type	C1 \	PureMode Hi 1060 for ports transmitting 980 nm (standard), SMF-28 for all others (standard)						
Pigtail color code (bare		Black (C port); Clear (R & P ports) Red (C port); Blue (R & P ports)						
Pigtail color code (loos	e tube)		IDCIT 1					
Device marking			JDSU logo, JDSU model name and device serial number					

Note: Parameters are specified for the signal wavelength range and/or pump wavelength range, all polarization states and operating temperature range without connector.

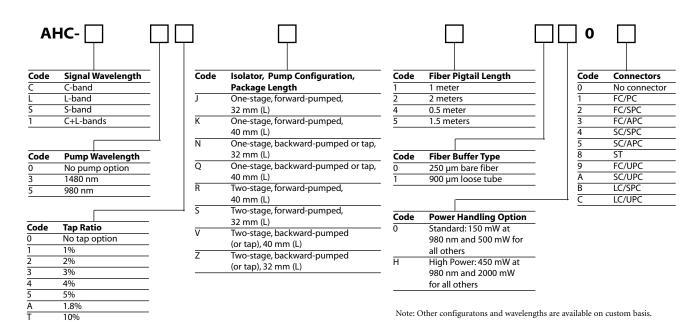
- 1 Backward tap: C (input), R (tap) and P (output).
- 2. Backward pumped: C (\(\lambda\)s input and \(\lambda\)p output), R (\(\lambda\)p input) and P (\(\lambda\)s input). Forward pumped: C (\(\lambda\)s input), R (\(\lambda\)p input) and P (\(\lambda\)s input).
- Forward: P to C and Backward: C to P.
 Forward: C to P and Backward: P to C. The isolation data are specified at 23 °C. The isolation range is λc ± 12 nm or λc ± 30 nm for one-stage or two-stage isolator, respectively.
 Isolation of WDM is given for both C to P and P to C directions.



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: AHC-C30R10000



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