

## Multi-Channel Mux/Demux Module 100 GHz Spacing



### Key Features

- Low insertion loss
- Exceptional reliability and environmental stability
- Low polarization dependent loss (PDL)
- Flat and wide passband
- High demux channel isolation
- Customizable with tap and multi-channel or band capabilities

### Applications

- Access/enterprise networks
- Metro networks
- Long haul networks
- Denser channel plans (50 GHz when used in conjunction with an optical frequency interleaver)
- Test bench/systems

### Compliance

- Telcordia GR-1221

JDSU multi-channel multiplexer/demultiplexer (mux/demux) modules are available on ITU channel spacings of 200, 100, and 50 GHz, as well as on bands of ITU channels.

Manufactured using laser welding technology, the integrated mux/demux module components exceed Telcordia GR-1221 requirements. The modules, themselves, demonstrate low loss, temperature insensitivity, and reliable performance in any system application.

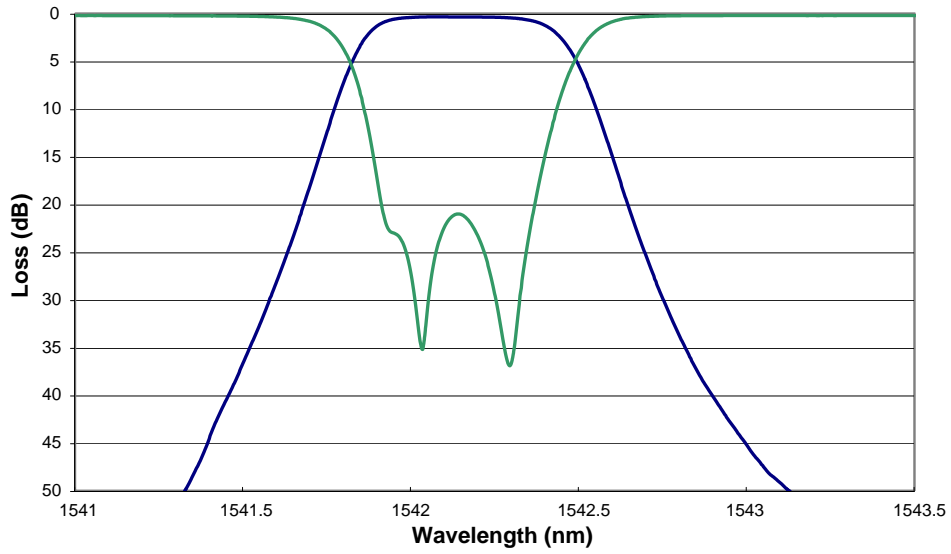
Fixed mux/demux modules offer low-cost wavelength management solutions that are suitable for long haul, metro, and access applications. Easily customizable, these devices are configured by number of channels for any customer-specific channel plan.

Packaging options include fiber type, connectors, footprint, and integration of taps and detectors for a complete dense wavelength division multiplexing (DWDM) solution.

Established volume capability and proven experience in customizing fiberoptic components and modules make JDSU the supplier of choice.

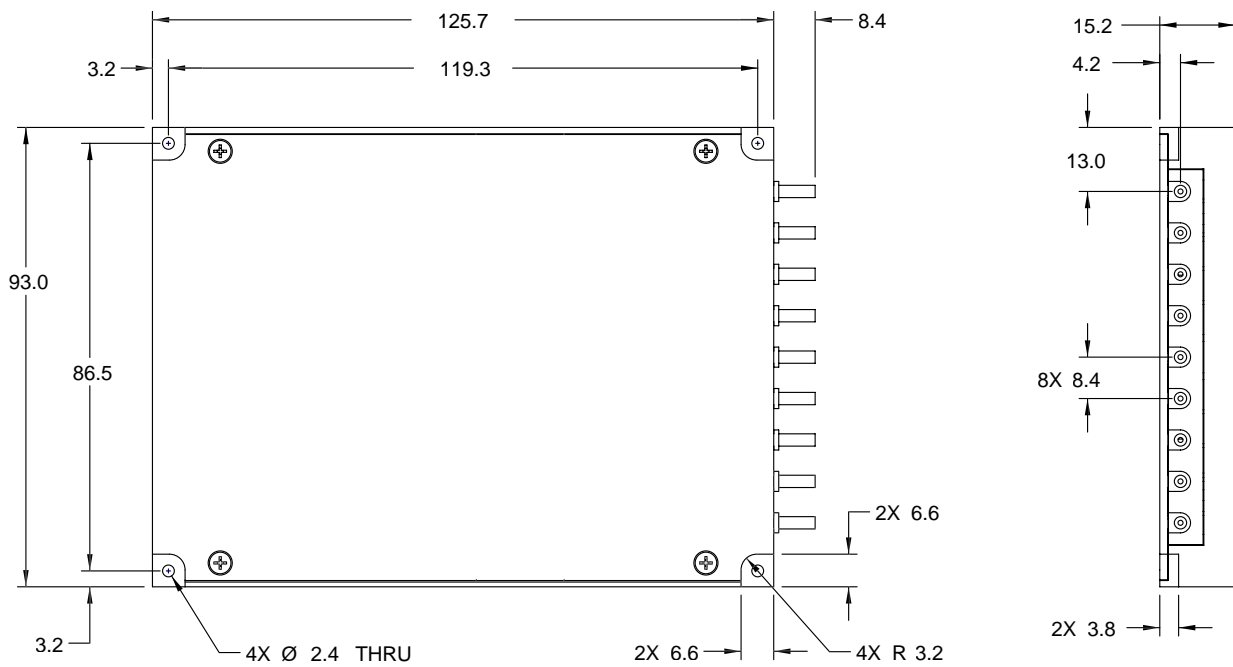
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100 GHz Coupler Spectral Plot



Dimensions Diagram

(Specifications in mm unless otherwise noted.)



### 3

#### Specifications

Parameter		4 Ch	8 Ch	16 Ch
Wavelength range		C or L band ITU channels 186.6 to 196.1 THz		
Passband	Minimum	12.5 GHz ( $\approx \pm 0.10$ nm)		
Passband ripple	Maximum	0.35 dB	0.35 dB	0.35 dB
Insertion loss <sup>1,2</sup>	Maximum	2.0 dB	3.2 dB	4.4 dB
Isolation (adjacent channel) <sup>3</sup>	Minimum	25 dB	25 dB	25 dB
Isolation (non-adjacent channel) <sup>3</sup>	Minimum	50 dB	50 dB	50 dB
Return loss	Minimum	45 dB	45 dB	45 dB
Directivity	Minimum	50 dB	50 dB	50 dB
Polarization dependent loss	Maximum	0.2 dB	0.2 dB	0.2 dB
Polarization mode dispersion	Maximum	0.15 ps	0.15 ps	0.15 ps
Optical power handling	Maximum	1 W	1 W	1 W
Operating temperature range		0 to 70 °C		
Storage temperature range		-40 to 85 °C		
Fiber type		9/125/900 $\mu$ m fiber		
Pigtail length		1.0 $\pm$ 0.1 m		
Package size (L x W x H)		125.7 x 93.0 x 9.9 mm	125.7 x 93.0 x 9.9 mm	125.7 x 93.0 x 15.2 mm

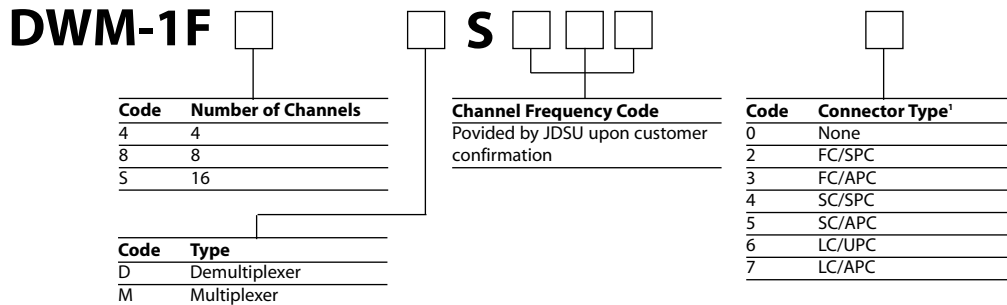
1. Losses include one connector.

2. Losses are for demultiplexers; multiplexer losses are 0.3 dB lower (i.e. 4 Ch Mux loss is 2.3 dB). If no connector option is selected, the maximum loss should be 0.2 dB lower.

3. Isolation values stated are for demultiplexers only.

**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](mailto:customer.service@jdsu.com).

**Sample: DWM-1F4DS2724**


1. Other connectors available upon request.

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Part Number: WD1504D2A-SM2  
 Serial Number: ~~HD173443~~  
 Temperature: 23.0 °C  
 Fiber: SMF-28  
 Connectors: SC/PC

03-02-2000

### Optical Performance

Channel	Nominal Center (nm)	Actual Center (nm)	Loss* Over Guardband (dB)	Ripple Over Guardband (dB)	Adjacent Isolation (dB)	Non-Adj. Isolation (dB)
CH 1 ( $\lambda_1$ )	1530.33	1530.346	2.27	0.33	25.5	60.0
CH 2 ( $\lambda_2$ )	1531.90	1531.943	2.43	0.44	34.2	59.2
CH 3 ( $\lambda_3$ )	1533.47	1533.458	2.54	0.48	26.9	60.0
CH 4 ( $\lambda_4$ )	1535.04	1535.031	2.63	0.14	44.9	60.0

Differential Channel Loss (dB) = 0.55

\* All loss measurements include one connector loss

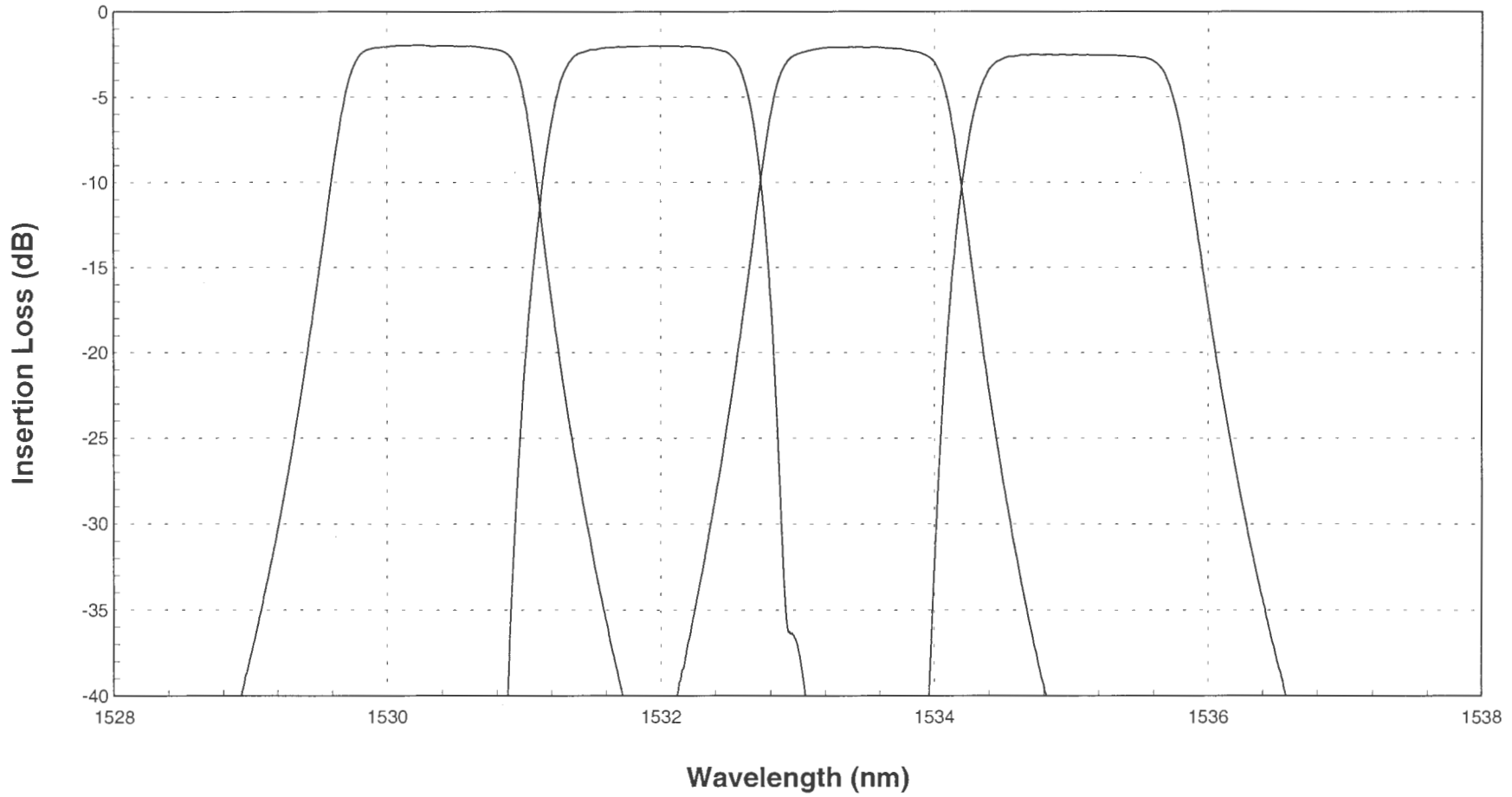
### Design Parameters

Operating Temperature (°C)
0 to 70

Part Number: WD1504D2A-SM2  
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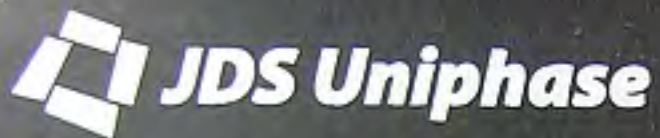
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**SPECTRAL PLOT**



Test Inspector *[Signature]*

Date *March 3/00*



WD1504D2A-SM2

4 Channel WDM Demultiplexer  
Band A

S/N HD173443

COMMON IN

1530.33nm

1531.90nm

1533.47nm

1535.04nm