100 GHz Wavelength Division Multiplexer/Demultiplexer (WDM) Filter

Key Features

- Low insertion loss
- Low polarization dependent loss
- Wide and flat passband
- Exceptional reliability and environmental stability
- Excellent temperature stability

Applications

- Long-haul networks
- Metro networks
- Denser channel plan (used in conjunction with an optical interleaver)
- Test bench/system

The JDSU 100 GHz multichannel mux/demux modules, based on thin-film filter (TFF) technology, provide extremely high performance. With low insertion loss, low polarization sensitivity, and high temperature stability, these modules are well suited to DWDM network applications.

These fixed mux/demux modules offer low-cost wavelength management solutions for long-haul and metro applications. In addition, they are easily customizable, and can be configured based on customer-specific channel plan, packaging type, and connector type.

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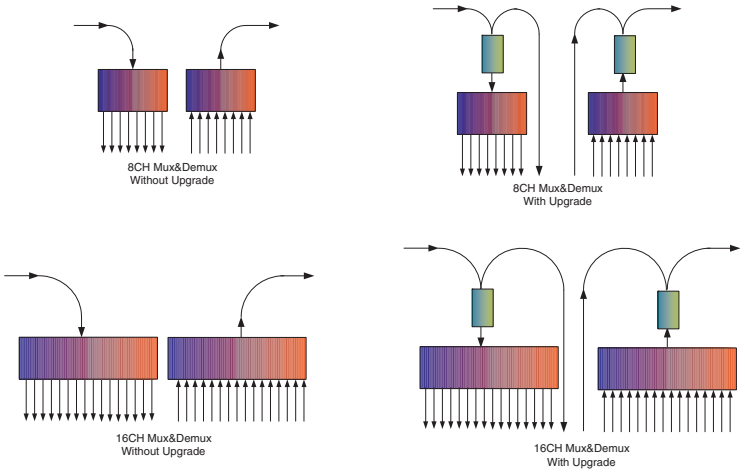
Functional Diagram



Specifications

Parameter		Without Upgrade Port		With Upgrade Ports	
		8 Ch	16 Ch	8 Ch	16 Ch
Operating frequency range	Minimum	186.6 – 196.1 THz			
Passband width	Minimum	±12.5 GHz			
Insertion loss[1]					
Mux	Maximum	3.0 dB	4.2 dB	3.5 dB	4.7 dB
Demux	Maximum	3.2 dB	4.4 dB	3.7 dB	4.9 dB
Upgrade[2]	Maximum	N/A	N/A	0.8 dB	0.8 dB
Pair insertion loss for each channel	Maximum	4.0 dB	6.0 dB	4.4 dB	6.4 dB
Pair insertion loss uniformity	Maximum	1.5 dB	2.0 dB	1.5 dB	2.0 dB
Passband ripple	Maximum	0.4 dB	0.5 dB	0.4 dB	0.5 dB
Mux isolation					
Adjacent channel	Minimum	15 dB			
Non-adjacent channel	Minimum	15 dB			
Demux isolation					
Adjacent channel	Minimum	25 dB			
Non-adjacent channel	Minimum	50 dB			
Upgrade isolatioin	Minimum	N/A	N/A	15 dB	15 dB
Polarization dependent loss	Maximum	0.2 dB			
Polarization mode dispersion	Maximum	0.2 ps			
Return loss	Minimum	45 dB			
Directivity	Minimum	50 dB			
Optical power	Maximum	500 mW			
Operating temperature range		-5 – 70°C			
Storage temperature range		-40 – 85°C			
Operating humidity		5 – 85%			

1. Including connectors' loss. The IL increase from low frequency channel to high frequency channel for Demux; it reverse for Mux.
2. For 8 Ch: It skips 2 channels from the edge channel of Mux/Demux for the wavelength range of upgrade port.
   For 16 Ch: It skips 2 channels from the edge channel of Mux/Demux for the wavelength range of upgrade port.

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JDSU ITU Channel Specification

Freq. (THz)	λ (nm)	Ch. #	Freq. (THz)	λ (nm)	Ch. #	Freq. (THz)	λ (nm)	Ch. #
196.20	1527.994	256	192.90	1554.134	388	189.65	1580.767	518
196.15	1528.384	258	192.85	1554.537	390	189.60	1581.184	520
196.10	1528.773	260	192.80	1554.940	392	189.55	1581.601	522
196.05	1529.163	262	192.75	1555.343	394	189.50	1582.018	524
196.00	1529.553	264	192.70	1555.747	396	189.45	1582.436	526
195.95	1529.944	266	192.65	1556.151	398	189.40	1582.854	528
195.90	1530.334	268	192.60	1556.555	400	189.35	1583.272	530
195.85	1530.725	270	192.55	1556.959	402	189.30	1583.690	532
195.80	1531.116	272	192.50	1557.363	404	189.25	1584.108	534
195.75	1531.507	274	192.45	1557.768	406	189.20	1584.527	536
195.70	1531.898	276	192.40	1558.173	408	189.15	1584.946	538
195.65	1532.290	278	192.35	1558.578	410	189.10	1585.365	540
195.60	1532.681	280	192.30	1558.983	412	189.05	1585.784	542
195.55	1533.073	282	192.25	1559.389	414	189.00	1586.203	544
195.50	1533.465	284	192.20	1559.794	416	188.95	1586.623	546
195.45	1533.858	286	192.15	1560.200	418	188.90	1587.043	548
195.40	1534.250	288	192.10	1560.606	420	188.85	1587.463	550
195.35	1534.643	290	192.05	1561.013	422	188.80	1587.884	552
195.30	1535.036	292	192.00	1561.419	424	188.75	1588.304	554
195.25	1535.429	294	191.95	1561.826	426	188.70	1588.725	556
195.20	1535.822	296	191.90	1562.233	428	188.65	1589.146	558
195.15	1536.216	298	191.85	1562.640	430	188.60	1589.568	560
195.10	1536.609	300	191.80	1563.047	432	188.55	1589.989	562
195.05	1537.003	302	191.75	1563.455	434	188.50	1590.411	564
195.00	1537.397	304	191.70	1563.863	436	188.45	1590.833	566
194.95	1537.792	306	191.65	1564.271	438	188.40	1591.255	568
194.90	1538.186	308	191.60	1564.679	440	188.35	1591.678	570
194.85	1538.581	310	191.55	1565.087	442	188.30	1592.100	572
194.80	1538.976	312	191.50	1565.496	444	188.25	1592.523	574
194.75	1539.371	314	191.45	1565.905	446	188.20	1592.946	576
194.70	1539.766	316	191.40	1566.314	448	188.15	1593.369	578
194.65	1540.162	318	191.35	1566.723	450	188.10	1593.793	580
194.60	1540.557	320	191.30	1567.133	452	188.05	1594.217	582
194.55	1540.953	322	191.25	1567.542	454	188.00	1594.641	584
194.50	1541.349	324	191.20	1567.952	456	187.95	1595.065	586
194.45	1541.746	326	191.15	1568.362	458	187.90	1595.489	588
194.40	1542.142	328	191.10	1568.773	460	187.85	1595.914	590
194.35	1542.539	330	191.05	1569.183	462	187.80	1596.339	592
194.30	1542.936	332	191.00	1569.594	464	187.75	1596.764	594
194.25	1543.333	334	190.95	1570.005	466	187.70	1597.189	596
194.20	1543.730	336	190.90	1570.416	468	187.65	1597.615	598
194.15	1544.128	338	190.85	1570.828	470	187.60	1598.041	600
194.10	1544.526	340	190.80	1571.239	472	187.55	1598.467	602
194.05	1544.924	342	190.75	1571.651	474	187.50	1598.893	604
194.00	1545.322	344	190.70	1572.063	476	187.45	1599.320	606
193.95	1545.720	346	190.65	1572.476	478	187.40	1599.746	608
193.90	1546.119	348	190.60	1572.888	480	187.35	1600.173	610
193.85	1546.518	350	190.55	1573.301	482	187.30	1600.600	612
193.80	1546.917	352	190.50	1573.714	484	187.25	1601.028	614
193.75	1547.316	354	190.45	1574.127	486	187.20	1601.455	616
193.70	1547.715	356	190.40	1574.540	488	187.15	1601.883	618
193.65	1548.115	358	190.35	1574.954	490	187.10	1602.311	620
193.60	1548.515	360	190.30	1575.368	492	187.05	1602.740	622
193.55	1548.915	362	190.25	1575.782	494	187.00	1603.168	624
193.50	1549.315	364	190.20	1576.196	496	186.95	1603.597	626
193.45	1549.715	366	190.15	1576.610	498	186.90	1604.026	628
193.40	1550.116	368	190.10	1577.025	500	186.85	1604.455	630
193.35	1550.517	370	190.05	1577.440	502	186.80	1604.885	632
193.30	1550.918	372	190.00	1577.855	504	186.75	1605.314	634
193.25	1551.319	374	189.95	1578.270	506	186.70	1605.744	636
193.20	1551.721	376	189.90	1578.686	508	186.65	1606.174	638
193.15	1552.122	378	189.85	1579.102	510	186.60	1606.605	640
193.10	1552.524	380	189.80	1579.518	512	186.55	1607.035	642
193.05	1552.926	382	189.75	1579.934	514	186.50	1607.466	644
193.00	1553.329	384	189.70	1580.350	516	186.45	1607.897	646
192.95	1553.731	386						

Note: Indication for variant determining: The channel # to use is the lowest one that fits in the customer wavelength's plan.

Example: 4 channel which covers 196.1, 196.0, 195.9 and 195.8 THz will have a variant number of 260 (196.1 THz).

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: WDM-1MDxxxxxx

WDM-1MD □ □□□ □ □

Code	Number of Channels
8	8 without upgrade
E	8 with upgrade
S	16 without upgrade
D	16 with upgrade

Channel Frequency Code
Refer to the JDSU channel specification table on page 3

Code	Packaging
0	LGX[1]
1	1U 19-inch rack[1]
2	1U 23-inch rack[1]

Code	Connector Type
1	SC/UPC
2	SC/APC
3	Duplex LC/UPC
4	Duplex LC/APC
5	LC/UPC
6	LC/APC

1. Detailed package drawings are available upon request.