

100 GHz Dense Wavelength Division Multiplexer (DWDM) Add/Drop Filter



Key Features

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

Applications

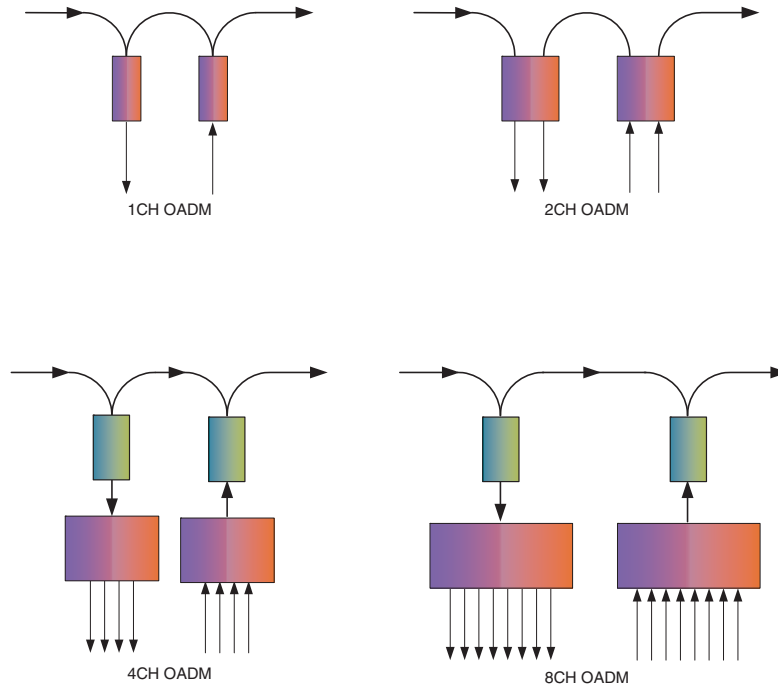
- Add/drop node in long-haul network
- Add/drop node in metro network

The JDSU 100 GHz add/drop 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 add/drop 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.

2

Functional Diagram



Specifications

| Parameter | | 1 Ch | 2 Ch | 4 Ch | 8 Ch |
|---|---------|-------------------|--------|--------|--------|
| Operating frequency range | Minimum | 186.6 – 196.1 THz | | | |
| Passband width | Minimum | ±12.5 GHz | | | |
| Add/drop insertion loss ¹ | Maximum | 1.2 dB | 2.1 dB | 2.7 dB | 3.9 dB |
| Insertion loss uniformity among add/drop channels | Maximum | N/A | 1.0 dB | 1.0 dB | 1.0 dB |
| Express insertion loss ¹ | Maximum | 1.5 dB | 2.0 dB | 1.5 dB | 1.5 dB |
| Passband ripple | Maximum | 0.4 dB | 0.4 dB | 0.5 dB | 0.5 dB |
| Add/drop isolation | | | | | |
| Adjacent channel | Minimum | 25 dB | | | |
| Non-adjacent channel | Minimum | 50 dB | | | |
| Express isolation | Minimum | 30 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

3

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.

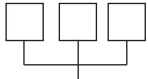
Example: 4 channel which covers 196.1, 196.0, 195.9 and 195.8 THz will have a variant number of 260 (196.1 THz).

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-1AD125601
WDM-1AD



| Code | Number of Channels |
|------|--------------------|
| 1 | 1 |
| 2 | 2 |
| 4 | 4 (4S0 based) |
| 5 | 4 (4S1 based) |
| 8 | 8 (8S2 based) |



| 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.