



Trans Max™

Trans Max4100 Field Optical Amplifier

Technical Specifications

Characteristics	OM4-EDFA-				
	17-1-S-N	21-1-S-N	19-2-S-N	20-1-S-H	23-1-S-H
Optical Input Power					
Constant Gain Mode, dBm ¹	-10 to 12	-10 to 12	NA	0 to 14.5	2 to 15
Constant Power Mode, dBm ²	-3 to 12	-3 to 12	-3 to 12	NA	NA
Wavelength Range, nm	1530 - 1562	1530 - 1562	1530 - 1562	1527 - 1562	1527 - 1562
Optical Output Power					
Minimum Output Power per Port, dBm	17.0	21.0	19.0	20.5	23.5
Number of Output Ports	1	1	2	1	1
Maximum Output Power Variation, dB ³				± 0.5	
Maximum Gain Variation, dB ⁴				± 0.5	
Power per Port Tolerance, dB	NA	NA	+0.5 / -0.0	NA	NA
Residual Pump Power, dBm				-35	
ASE Noise Figure					
-10dBm to 0dBm in 1550 ± 5 nm, dB (Typ/Max)	4.5/4.8	4.5/4.8	4.5/4.8 ⁵	NA	NA
-10dBm to 0dBm in 1530-1562 nm, dB (Max)	5.5	5.5	5.5 ⁵	NA	NA
> 6 dBm in 1550 ± 5 nm, dB (Typ/Max)	5.5/6	5.5/6	5.5/6	NA	NA
> 6 dBm in 1530-1562 nm, dB (Max)	8.0	8.0	8.0	NA	NA
2dBm to 13.5 dBm in 1540-1562nm, dB (Typ/Max)	NA	NA	NA	5/5.5	5/5.5
2dBm to 13.5 dBm in 1528-1562nm, dB (Typ/Max)	NA	NA	NA	6/6.5	6/6.5
Gain Flatness					
Optimum Gain, dB	11.0	14.0	NA	8.0	10.0
Minimum Settable Gain, dB	7.0	10.0	NA	6.0	8.5
Maximum Settable Gain, dB	15.0	18.0	NA	10.0	11.5
1535-1560nm, dB	± 1.5	± 1.5	NA	NA	NA
1525-1562nm, dB	± 3.0	± 3.0	NA	1.5 (pk-pk)	3.5 (pk-pk)
1540-1562nm, dB	NA	NA	NA	1.2 (pk-pk)	1.1 (pk-pk)
Dynamic Gain Tilt from 1540-1562 nm, dB	NA	NA	NA	0.5	0.3
Dynamic Gain Tilt from 1525-1562 nm, dB	NA	NA	NA	0.9	1.0
Environmental					
EDFA Operating Temperature Range, °C ⁶	-30 to 75 (-22 to 167°F)				
EDFA Storage Temperature Range, °C	-40 to 85 (-40 to 185°F)				

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Specifications

General Specifications

Number of AC Powering Ports	2
Number of Optical Ports	4
Operating Temperature Range, °C	-40 to 60 (-40 to 140 °F)

Powering Specifications

AC Current Passing, A	15
Input Voltage Range, VAC	45 to 90

Bi-directional Optical Passive Module

Channel Optical Performance

Central Wavelength, nm	1550
Bandwidth, nm	1550 ± 25
Insertion Loss, Port 1 to Port 2/Port 3 to Port 4, dB max. ^{7,8}	0.90
Insertion Loss, Port 2 to Port 3, dB max. ^{7,8}	1.80
Isolation, Port 2 to Port 1/Port 4 to Port 3, dB min. ⁹	40
Isolation, Port 3 to Port 2, dB min. ⁹	60
Temperature Dependent Loss, Port 1 to Port 2/Port 3 to Port 4, dB max.	0.3
Temperature Dependent Loss, Port 2 to Port 3, dB max.	0.6

General Optical Performance

Directivity, Port 1 to Port 3/Port 2 to Port 4, dB min.	50
Return Loss, dB min.	45
Polarization Dependent Loss, dB min.	0.4
Polarization Mode Dispersion, ps max.	0.3
Power Handling, mW max.	300
Operating Temperature, °C	-40 to 85 (-40 to 185 °F)
Storage Temperature, °C	-40 to 85 (-40 to 185 °F)
Connector Type	SC/APC

Notes:

1. When operating in Constant Gain Mode, the sum of the input power and the gain set-point should not exceed the nominal output power or the high output power shutdown may be triggered.
2. EDFA's operating in Constant Power Mode will meet output power specifications with input power levels >-3 dBm. At input power levels between -10 and -3 dBm, the EDFA will attempt to maintain the set point output power but it may be less than specifications.
3. Variation of optical power over specified temperature, wavelength, and all polarization states.
4. Gain will not vary more than ± 0.5 dB when adding or subtracting wavelengths in AGC mode.
5. ASE Noise Figure specified for an input level of -3 to 0 dBm.
6. Representative of the Trans Max4100 internal temperature range when the unit is operating in an external temperature range of -40 °C to 60 °C.
7. Insertion loss excluding connector (pair of connector loss is 0.5 dB max., 0.3 dB typ.).
8. Specifications at center wavelength ± 25nm and temperature range of -40 to 85 °C.
9. Specifications at center wavelength ± 25nm and temperature of 23 °C.

Specifications are subject to change without notice.

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