W2 Wave Technologies,Inc.

40-Channel 100GHz VMUX

Part Number: VMUX-1-F-40-C60-05-05-LC

Issue Date: June 28, 2010 **Revision:** 1.0

1. Product Overview

VMUX (Reconfigurable Optical Add/Drop Multiplexer) is designed for DWDM system, reconfigurable optical add/drop multiplexer (ROADM) system. It has functions of Multiplexer and preequalize of optical power in different channels.

The VMUX is available in various configurations of 8-48 channels and is offered in both Gaussian and wide-band passband versions.

The thermal AWG module includes an integrated thermal control circuit with the host board providing the power supply and communication interface.

The VOA array is based on silicon photonic waveguide technology that provides current controlled optical attenuation and enables ultra-fast power management in optical network. It delivers 15dB of dynamic attenuation range.

DEVMUX (Reconfigurable Optical Add/Drop Multiplexer and Demux) is also available designed for DWDM system, reconfigurable optical add/drop multiplexer (ROADM) system. It has functions of Mux/Demux and preequalize of optical power in different channels.

Applications:
DWDM system; ROADM system

label is only for spec review and can be no label or customer label on the device on delivered samples and products

2. Environmental Conditions:

Parameters	Notes	Specifications			Units
		Min	Typ	Max	
Operating Temperature		-5		+65	°C
Storage Temperature		-40		+85	°C
Relative Humidity		5		95	%
Power level				24	dBm

3. Optical Specifications:

Parameters	Notes	Specifications			Unit
		Min	Typ	Max	
Channels			40/48		Ch
Channel Spacing			100		GHz
Reference Pass Band	Relative to ITU Grid	± 0.1			nm
ITU Frequency	See Table 1	ITU Frequency			
ITU Wavelength	See Table 1	ITU Wavelength			
Center Wavelength Accuracy	Maximum of the absolute deviation of the 3 dB center wavelength from ITU grid over all channels			± 0.05	nm
0.5 dB Bandwidth	0.5 dB from min Insertion Loss, full width, worst case polarization	0.2			nm
1dB Bandwidth	1dB from min Insertion Loss, full width, worst case polarization	0.4			nm
3dB Bandwidth	3 dB from min Insertion Loss, full width, worst case polarization	0.6			nm
20 dB bandwidth	20 dB from min Insertion Loss, full width, worst case polarization			1.2	nm
Insertion Loss	Maximum of the insertion loss across the ITU pass band over all channels, including connector at 0dB attenuation			7.0	dB
Ripple	Maximum of the loss variance across the ITU pass band over all channels at 0dB attenuation			0.75	dB
Insertion Loss Uniformity	Maximum insertion loss variance across all channels			1.0	dB
Adjacent Channel Isolation	Ratio of peak transmission to the maximum transmission over both adjacent pass bands at 0dB attenuation	25			dB
Non-Adjacent Channel Isolation	Ratio of peak transmission in channel pass bands to maximum transmission over all non-adjacent pass bands at 0dB attenuation	30			dB
Total Crosstalk	Ratio of power in channel to power in all other pass bands at 0dB attenuation	22			dB
Polarization Dependent Loss (PDL)	Maximum ratio of transmissions over all polarization states, over the ITU pass band at 0~10dB attenuation			0.8	dB
	Maximum ratio of transmissions over all polarization states, over the ITU pass band at 10~15dB attenuation			1.0	dB
Polarization Mode Delay (PMD)	In Reference Pass band over all channels over 0~15dB attenuation range			0.5	ps
Chromatic Dispersion	In Reference Pass band over all channels over 0~15dB attenuation range	-20		20	ps/nm
Return Loss	At all optical ports	40			dB
Directivity	At all optical ports	45			dB

VOA Specification

Parameters	Notes	Specifications			Unit
		Min	Typ	Max	
Attenuation Range		0		10/15	dB
Attenuation Resolution				0.2	dB
Attenuation Accuracy	Over 0~10dB attenuation range			0.5	dB
	Over 10~15dB attenuation range			0.8	dB
VOA Response Time				1	us
VOA Shutdown status	Excluding AWG insertion loss	15			dB
VOA power off status	Attenuation value while no voltage is applied to the module, excluding AWG insertion loss	15			dB

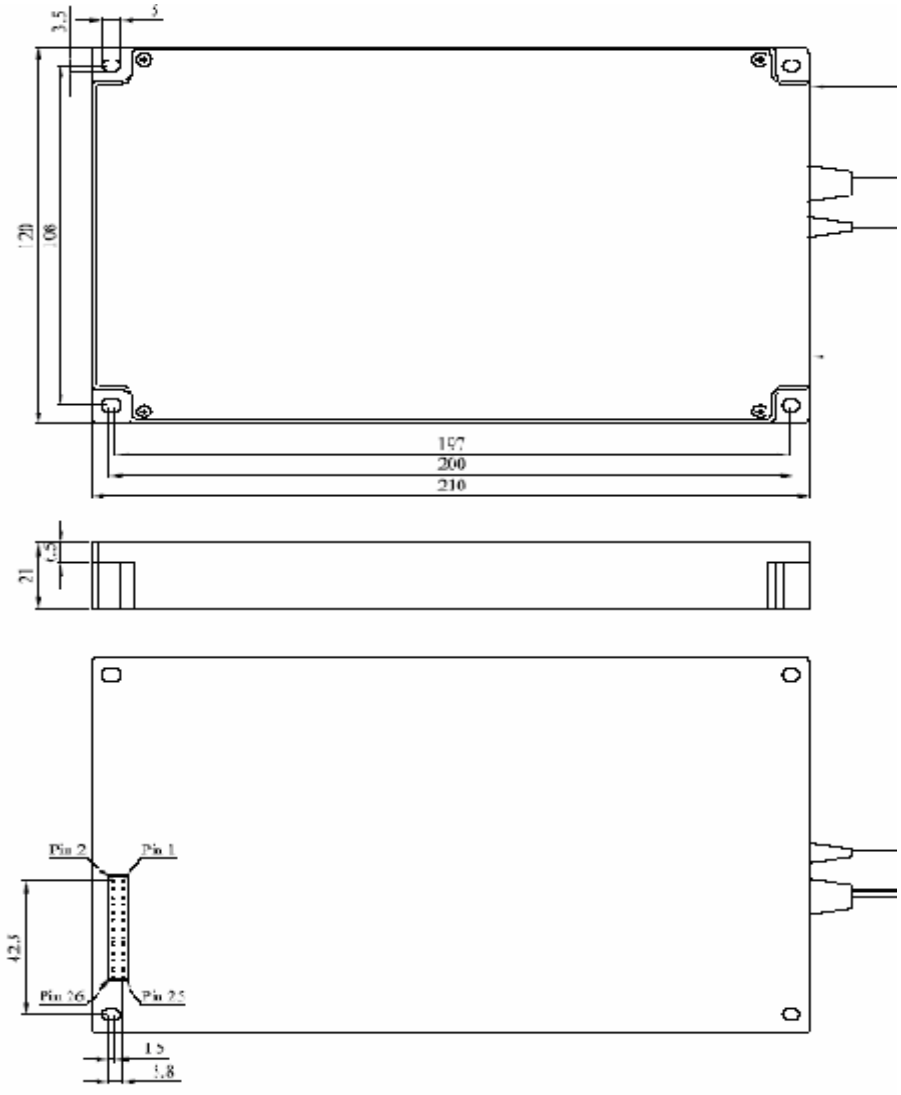
4. Electrical Spec and Interface Definition:

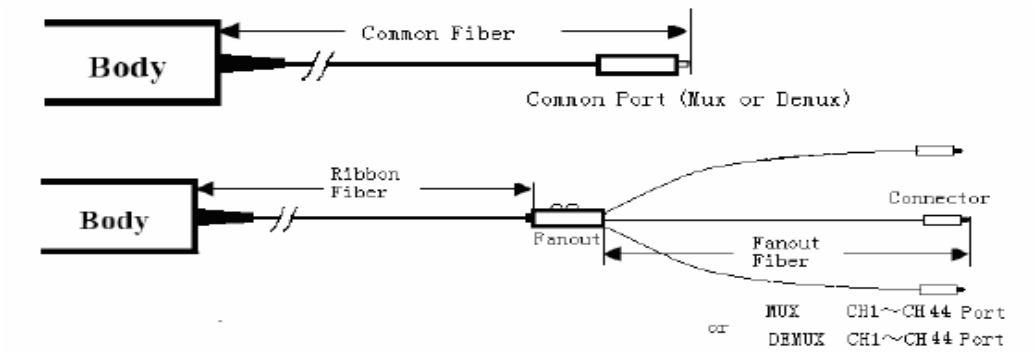
Parameters	Notes	Specifications			Unit
		Min	Typ	Max	
Set-Point temperature of AWG	Optimum operating temperature section	68		85	°C
Set-Point temperature stability	Over entire operating temperature range			±0.2	°C
AWG Temperature Ramp-up Time （Set Temperature +/-0.2°C)	From room temperature			5	min
	Over entire operating temperature range			8	
Wavelength Stabilizing Time (ITUT +/-6GHz)	From room temperature			3	min
	Over entire operating temperature range			5	
Power Source	15V (for AWG)			1	A
	5V (for VOA and communication)			1.5	A
Power Consumption				25	W

pin#	Signal Name	Type	Direction	Descriptions
1	GND（+5V Return）			Ground
2	GND（+5V Return）			Ground
3	GND（+5V Return）			Ground
4	GND（+5V Return）			Ground
5	+5V	Power		Power supply
6	+5V	Power		Power supply
7	+5V	Power		Power supply
8	+5V	Power		Power supply
9	GND（+15V Return）			Ground
10	GND（+15V Return）			Ground
11	GND（+15V Return）			Ground
12	GND（+15V Return）			Ground
13	+15V	Power		Power supply
14	+15V	Power		Power supply
15	+15V	Power		Power supply
16	+15V	Power		Power supply
17	Reserved			
18	Reserved			
19	TX (3.3 V logic)			Not available
20	RX (3.3 V logic)			Not available
21	GND			Ground
22	RS232 sel(active low)			Not available
23	RS232-TX	RS232	O	RS232 serial transmit signal to host
24	RS232-RX	RS232	I	RS232 serial received signal to host
25	Reset (active low)	3.3 V TTL	I	
26	Soft Reset (active low)	3.3 V TTL	I	

I2C interface is also available.

5. Mechanical Schematic and Dimensions: 210x120x21mm.





6. Shipment Packaging

Our standard shipment packaging will be employed for the discrete devices in addition to the external packaging.

Ordering Part Code Sequence