WBA4100-FM02 (70×90×15mm)

C-Band DWDM Full Function Booster EDFA Module

PRODUCT DESCRIPTION

WBA4100-FM02 series used 70 x 90 x 15mm MSA compact package, is a digital control circuit of DWDM power amplifier function module. Products using the most excellent optical properties, electronic control technology and complete software function is most advanced, wide wavelength range, low noise, excellent gain flatness characteristics and transient characteristics. Application for C-Band 44 wave or the 88 wave of DWDM system.

WBA4100-FM02 has two kinds of function versions are available:

1. Standard version: provides a fixed gain control mode (FGA), the pump current control mode (ACC)

2. Enhanced version: In addition to the standard version with the control functions, increasing the variable gain control mode (VGA, AGC), Variable output power control mode (VPA, APC).

WBA4100-FM02 enhanced version, for DWDM systems, providing a flexible, high-performance, low-cost networking applications.

PRODUCT FEATURES

- ▶With Digital Control Electronics (Full Function)
- ▶Wide working wavelength: 1529.16~1563.86nm
- ▶Accord with the communication technology requirements of 44 channels DWDM system
- ▶Excellent gain flatness feature (GF<1.0dB)
- ▶Excellent Transient feature
- ▶Low noise figure.
- ▶Standard RS232 communication interface.
- ▶MSA compact package (70×90×15mm)
- ▶Low power consumption,Wide operating temperature range
- ▶Excellent P/P ratio in area.

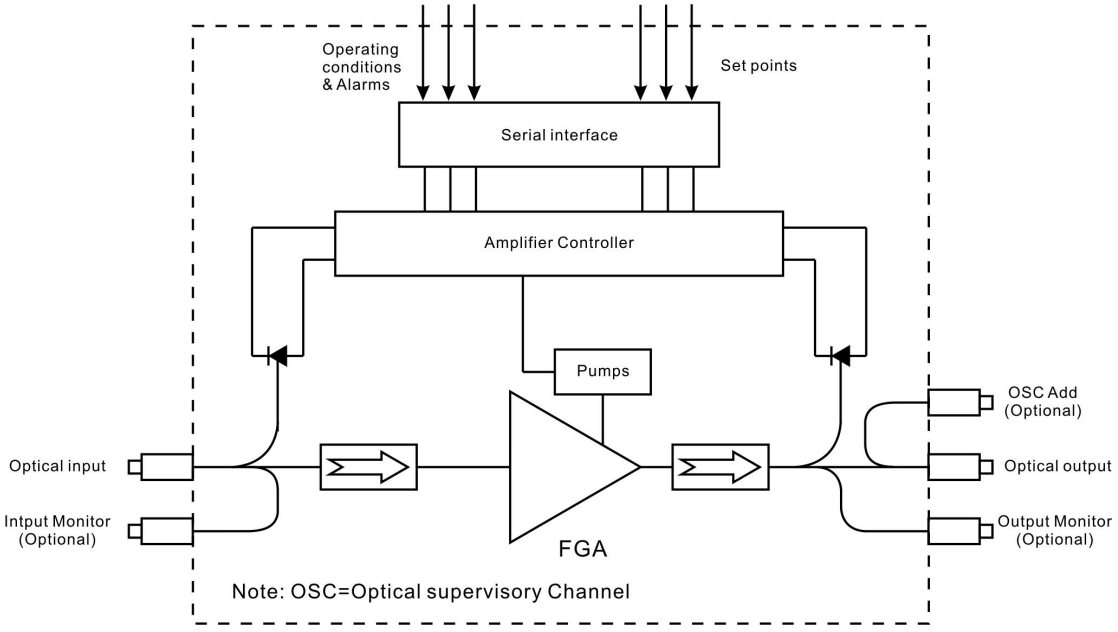
MAIN APPLICATION

- ▶44 channels DWDM system
- ▶Long distance trunk network
- ▶MAN or access network
- ▶All kinds of SDH/PDH transmission system
- ▶FTTx PON

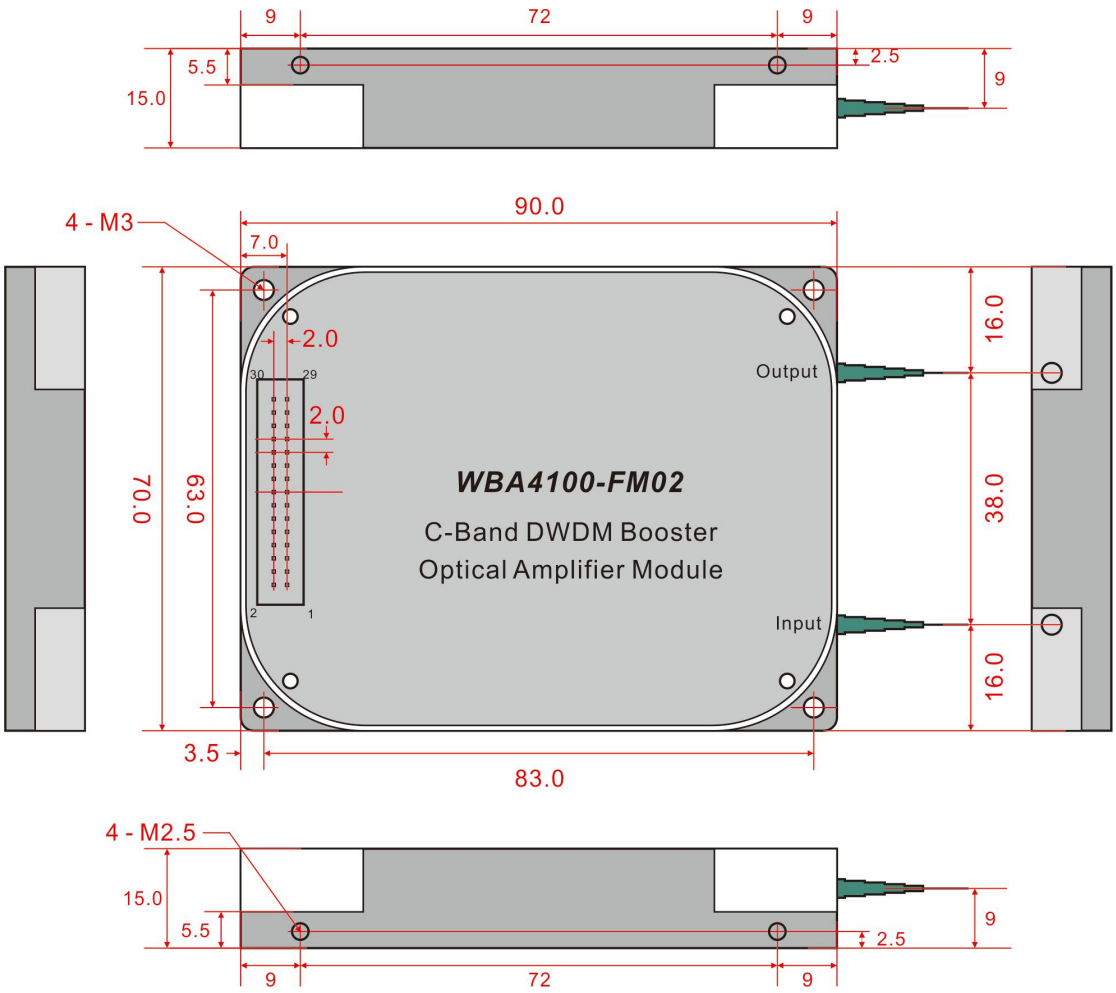
SOFTWARE FUNCTION MONITORING AND ALARM

Function, Monitoring, Alarm		Standard version	Enhanced version
Functions	In-Service Firmware Upgrades	√	√
	Auto Shut Down	√	√
	Fixed Gain Mode (FGA)	√	√
	Variable Gain Control Mode (VGA, AGC)	×	√
	Variable output power control mode (VPA, APC)	×	√
	Pump Current Control Mode (ACC)	√	√
	Pump Maximum Working Current limit Protection	√	√
Monitors	Total Input Power	√	√
	Total Output Power	√	√
	Pump Status	√	√
	Chassis Temperature	√	√
Alarms	Loss-of-Signal Alarm	√	√
	Chassis Temperature Alarm	√	√
	Pump Temperature Alarm	√	√
	Pump Bias Alarm	√	√

OPTO-ELECTRICAL DIAGRAM



DIMENSIONS


9
72
9
5.5
15.0
2.5
9
4 - M3
90.0
7.0
2.0
30
29
2.0
2
1
Output
Input
WBA4100-FM02
C-Band DWDM Booster
Optical Amplifier Module
70.0
63.0
16.0
38.0
16.0
3.5
83.0
4 - M2.5
15.0
5.5
2.5
9
9
72
9

TECHNICAL INDEX

Performace			Index			Supplement
			Min.	Typ.	Max.	
Optical feature	Working wavelength range (λ)	(nm)	1529.16		1563.86	ITU 88CH
	No. of working channel	(CH)	1	44		
	Input Optical Power (Pi)	(dBm)	-10		+6	
	Saturation output power(Po)	(dBm)	14		22	
	Variable output power range	(dB)	-6		0	Enhanced version
	Signal gain	(dB)	13		27	Customer selection
	Variable gain range	(dB)	-12		0	Enhanced version
	Gain flatness	(dB)		0.7	1.0	Peak to Peak
	Noise figure	(dB)		5.0		Max output, max gain
	Polarization dependence Gain (PDG)	(dB)			0.3	
	Polarization mode dispersion (PMD)	(ps)			0.3	
	Polarization dependence loss (PDL)	(dB)			0.3	
	Input/Output optic isolatioin	(dB)	30			
	Pump leakage power	(dB)			-30	
	Echo loss	(dB)	45			UPC
			55			APC
	Optical Supervisory Channel Wavelength	(nm)	1500	1510	1520	
Transient feature	Transient setting time	(μs)			700	16dB Add/Drop
	Transient Overshoot	(dB)	-1.5		+1.0	16dB Add/Drop
	Transient gain changes	(dB)	-0.5		+0.5	
General feature	Communication interface		RS232			
	Fiber type		Coming SMF-28™ or equivalent			
	Pigtail buffer diameter	(μm)		900		
	Pigtail length	(mm)		1000		
	Power supply	(V)	3.1	3.3	3.5	

	Power consumption	(W)		2.0	10	
	Working temp.	(°C)	-5		+70	
	Storage temp.	(°C)	-40		+85	
	Working relative humidity	(%)	+5		+95	
	Size (W)×(D)×(H)	(mm)	70×90×15			

ELECTRICAL 30-PIN ASSIGNMENTS

Pin	Definition	Pin	Definition
1	+3.3V	2	+3.3V
3	NC	4	NC
5	GND	6	GND
7	Upper computer receive	8	Upper computer transmit
9	GND	10	GND
11	NC	12	NC
13	Amplifier switch (enable) input, (low level enable)	14	NC
15	NC	16	NC
17	NC	18	NC
19	NC	20	NC
21	GND	22	GND
23	NC	24	NC
25	GND	26	GND
27	NC	28	NC
29	+3.3V	30	+3.3V

Note: 30-Pin type: HIROSE DF11-30DP-2DSA

PRODUCT SERIES

Model	Stauration power (dBm)	Signal gain (dB)	Gain flatness (dB)	The Function Version	Monitor optical port mode	OSC Optical port mode
WBA4114-G □□ -FM02	14	14, 17, 20, 22, 24, 27 Optional	<1.0	1, FG: Standard version (FGA) 2, VG: Enhanced Version (VGA)	1, M00: Without monitor 2, MO: With output monitor 3, MI: With input monitor 4, MIO: With input and output monitor	1, O00: Without OSC 2, OD: OSC / Add
WBA4118-G □□ -FM02	18					
WBA4120-G □□ -FM02	20					
WBA4122-G □□ -FM02	22					

MODEL EXPLANATION

WBA 4 1 □□ – G□□ – FM 02 – □□ – □□ / □□ – M□□ – O□□

DWDM Booster EDFA Moduel	Operation wavelength		Product type		Stauration power		Gain		Module type		Module size number		The Function Version		Connncrtor		Connncrtor		Monitor options		OSC options	
	4	C-Band 44 or 88 CH	1	BA	14	14dBm	14	14dB	FM	Full Function Module	02	70×90×15mm	FG	Standard Version FGA	SP	SC/UPC	05	0.5m	M00	Without monitor	O00	Without OSC
					18	18dBm	17	17dB							SA	SC/APC	08	0.8m				
					20	20dBm	20	20dB			04	100×130×22mm	VG	Enhanced Version VGA	LP	LC/UPC	10	1.0m	MO	With output monitor	OA	OSC/Add
					22	22dBm	22	22dB							LA	LC/APC						
							24	24dB			05	125×150×22mm			FP	FC/UPC			MI	With intput monitor		
							27	27dB							FA	FC/APC			MIO	With input & output monitor		