

VGA4500-FM05 (125×150×20mm)

PRODUCT DESCRIPTION

VGA4500-FM05 series is a next generation variable gain optical amplifier module, which with the most excellent performance and most complete functions in the market. It adopts nowadays most excellent optical performance, most advanced electronic technology and most complete software functions. Remarkable transient suppression control technology and heat management control technology let many complicated optical functions achieved. It is the most versatile multifunction optical amplifier in the market.

This next generation variable gain amplifier module is composed with two stages amplifier: variable gain pre-amplifier (PA) and

variable gain booster amplifier (BA). The gain of these two stages amplifier can be independently set in a certain range. There is a connector between the two stages amplifier, which used for mid-stage access, such as optical Add-Drop module (OADM), dispersion compensation module (DCM) and others optical modules.

VGA4500-FM05 adopts 125×150×20mm ultra-thin appearance; signal unit +5VDC power supply, low consumption.

VGA4500-FM05 is a device without Mid-stage Access, which according with various communication technology requirements of C-Band 44 or 88 channels DWDM system, widely used in long distance and ultra-long distance transmission network. Since its complete functions, it can be used as line amplifier, pre-amplifier, booster amplifier.



PRODUCT FEATURES

- ▶ Nest-generation Variable Gain Amplifies Module
- ▶ Without Mid-stage Access Version
- ▶ Accord with the various communication technology requirements of C-Band 44 or 88 channels DWDM system
- ▶ Adopt latest total integration electronic transient control technology
- ▶ Adopt digital control technology which can adapt to heat management
- ▶ Saturation large output power optional: 18dBm, 20dBm, 23dBm, 24dBm
- ▶ AGC, APC, ACC working mode
- ▶ Optical monitoring channels optional: OSC Add/Drop
- ▶ Carrier-class security and reliability
- ▶ Ultra-thin appearance 125×150×20mm
- ▶ Low power consumption
- ▶ Excellent cost performance in area

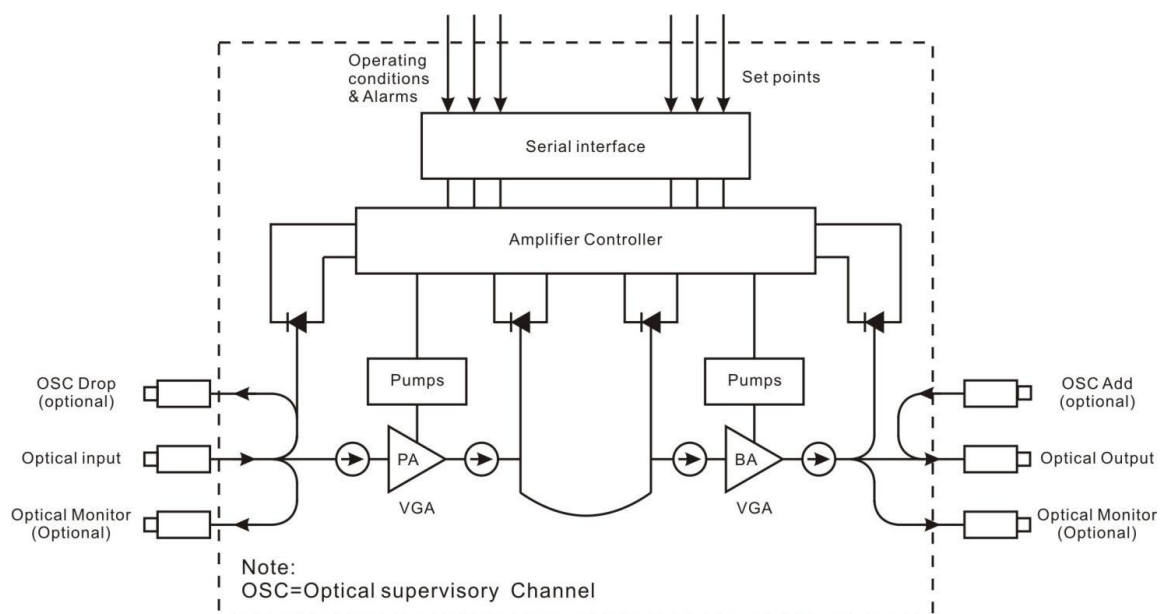
MAIN APPLICATION

- ▶ Long distance and Ultra-long distance network among the cities
- ▶ Line amplifier, pre-amplifier, booster amplifier

TECHNICAL INDEX

Performance			Index			Supplement
			Min.	Typ.	Max.	
Optical feature	Working wavelength range (λ)	(nm)	1529.16		1563.86	ITU 88CH
	Input power range	(dBm)	-33		+7	
	Gain range	(dB)	13		25	G25 Typ
	Max. output power ¹	(dBm)			23	
	Gain flatness	(dB)			1.5	Peak-to-peak
	Noise figure	(dB)		5.0	5.9	Max gain
	Polarization dependence loss (PDL)	(dB)			0.3	
	Polarization dependence Gain (PDG)	(dB)			0.3	
	Polarization mode dispersion (PMD)	(ps)			0.3	
	Pump leakage power	(dBm)			-30	
	Wavelength range of optic management channel	(nm)	1500	1510	1520	
Transient feature	Transient setting time	(μ s)			500	16dB Add/Drop
	Transient Overshoot	(dB)	1.0		1.5	16dB Add/Drop
	Transient gain changes	(dB)			0.5	
General feature	Communication interface		RS232			
	Fiber type		Coming SMF-28™ or equivalent			
	Pigtail buffer diameter	(μ m)		900		
	Pigtail length	(mm)		1000		
	Power supply	(V)	+4.75	+5	+5.25	
	Power consumption	(W)			20	
	Working temp.	(°C)	0		+70	
	Storage temp.	(°C)	-40		+85	
	Working relative humidity	(%)	5		95	
	Size (W)×(D)×(H)	(mm)	125× 150 × 20			(W)×(D)×(H)

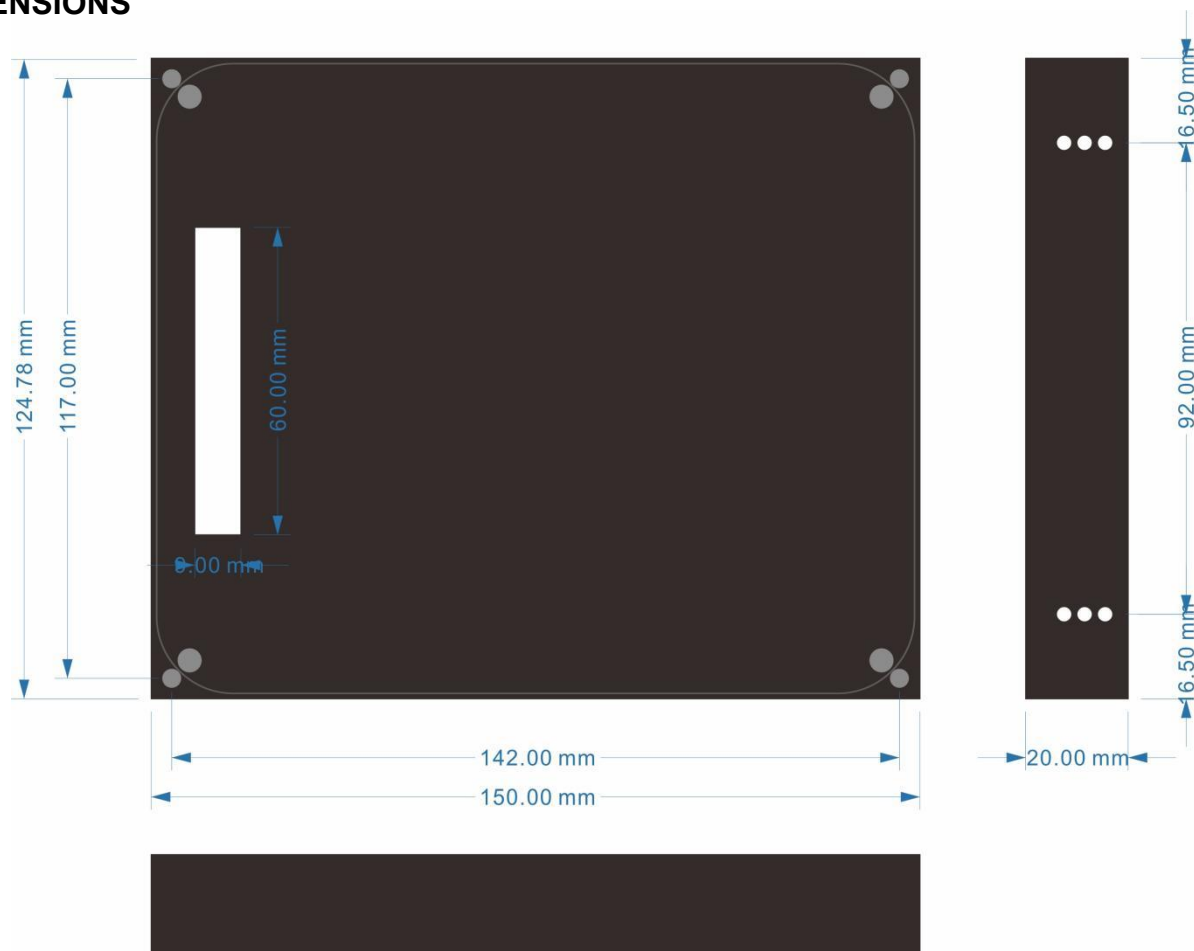
OPTO-ELECTRICAL DIAGRAM



SOFTWARE FUNCTION MONITORING AND ALARM

Functions	In-Service Firm ware Upgrades
	Auto Shut Down
	Gain Control Mode with Automatic Power limiting (VGA)
	Independent Stage Mode (on variants with Mid-Sage Access)
	Output Power Control Mode
	Pump Current Control Mode
Monitors	Total Input Power
	Total Output Power
	Pump Status
	Module Temperature
Alarms	Loss-of-Signal Alarm
	Low Output Power Alarm
	Module Temperature Alarm
	Pump Temperature Alarm
	Pump Bias Alarm

DIMENSIONS



50 PIN DEFINATION

Pins	Description	Pins	Description
1	Power supply	2	Power supply
3	Power supply	4	Power supply
5	Power supply	6	Power supply
7	Ground	8	Ground
9	Ground	10	Ground
11	NC	12	NC
13	Ground	14	NC
15	TTL RxD	16	TTL TxD
17	Pump current alarm	18	NC
19	Ground	20	Ground
21	NC	22	Ground
23	Ground	24	NC
25	Ground	26	Ground
27	Input LOS alarm	28	Ground
29	Output/Gain alarm	30	Ground
31	Ground	32	Ground
33	Case temperature alarm	34	NC
35	Pump temperature alarm	36	NC
37	Eyesafe mode	38	Amplifier disable input
39	Common alarm	40	NC
41	Ground	42	Ground
43	Ground	44	Ground
45	Power supply	46	Power supply
47	Power supply	48	Power supply
49	Power supply	50	Power supply

MODEL EXPLANATION

VGA 4 5 □□ - FM 05 - □□ - M□□ - O□□

NGB Variable Gain EDFA Module	Wavelength		Product type		Saturation power supply		Module type		Module size		Connector		Optical port Monitoring optional		OSC Optical port optional	
	4	C-Band (1528~1564)	5	VGA without MSA	19	19dBm	FM	Full function module	05	125×150 ×20mm	SP	SC/UPC	M00	Without optical port monitoring	O00	Without OSC
					20	20dBm					SA	SC/APC			OD	OSC/Drop
			7	VGA with MSA	23	23dBm					LP	LC/UPC	MO	With output optical port monitoring	OA	OSC/Add
											LA	LC/APC			ODA	OSC/Drop & Add
											FP	FC/UPC	MI	With input optical port monitoring		
											FA	FC/APC				
													MIO	With input, output optical port monitoring		