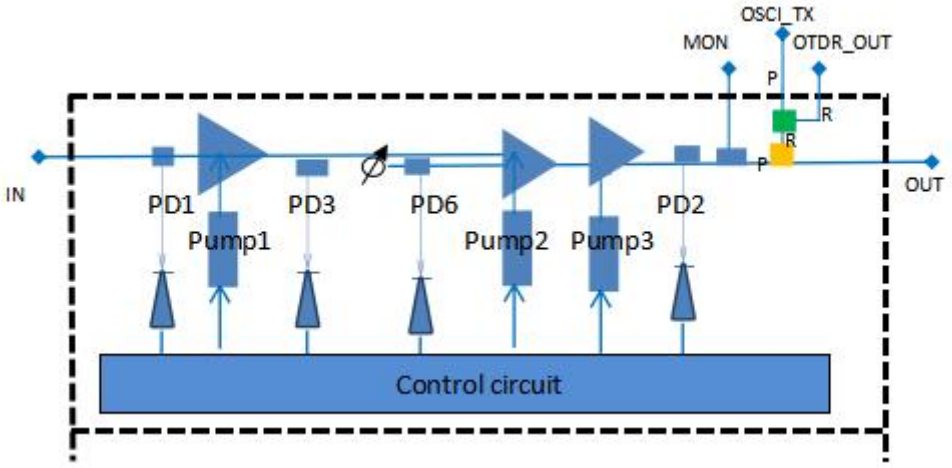
Product Introduction

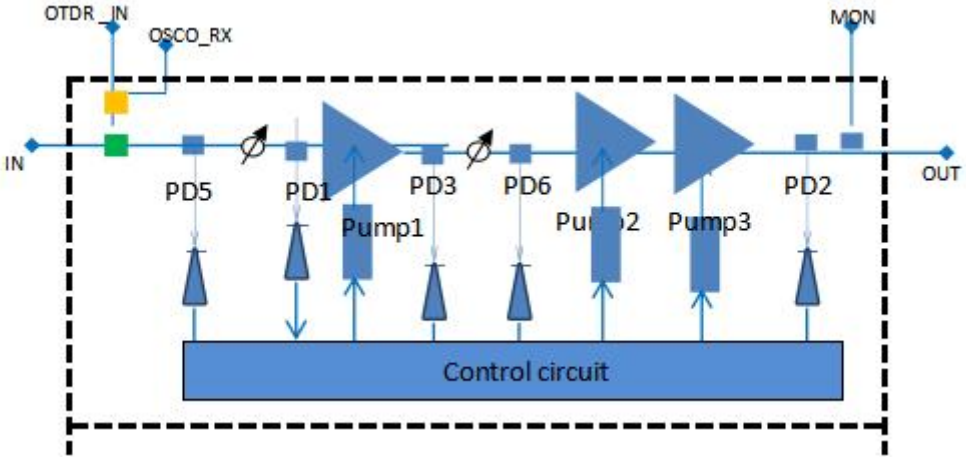
This document specifies the requirements of a DWDM C-band amplifier. The amplifier modules include one gain unit which can be operated at constant gain (Automatic Gain Control AGC) or constant output power (Automatic Power Control, APC). There are isolators at input and output port. Integrated VOA can be closed control for accurate attenuation, in order to achieve smooth gain spectrum for different target gain.

Amplifier diagram as below

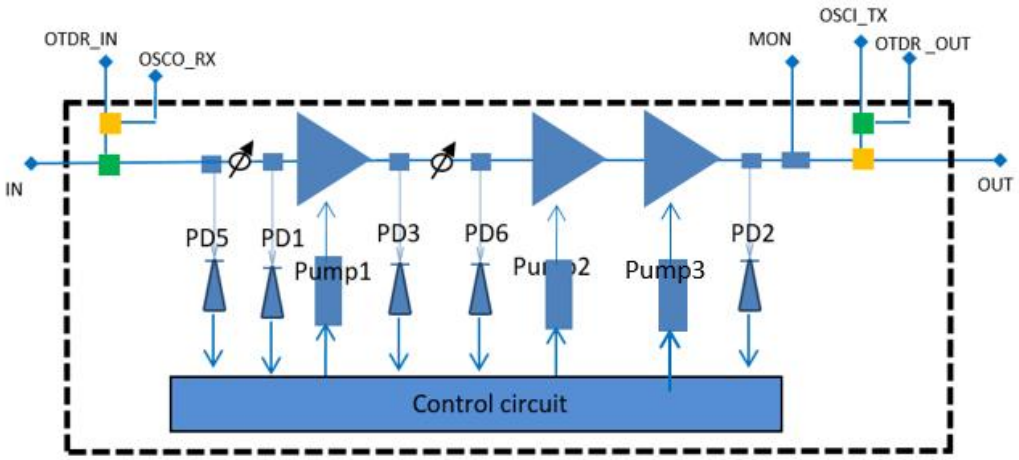
1) BA



2) PA



3）LA



Performance

Absolute maximum ratings

Parameter	Min	Max	Unit
Operating case temperature	-5	55	°C
Operating relative humidity	5	95	%
Storage Temperature	-40	75	°C
Storage relative humidity	5	95	%
Power consumption		30	W

Optical characters

Parameter	Units	BA	PA/LA	Notes
		24G20V	24G20VV	
Operation wavelength	nm	1524~1572.3	1524~1572.3	
Gain range	dB	15 ~ 25	15 ~ 25	
Max. total output power	dBm	≥ + 24	≥ + 24	
NF	dB	G=15, ≤11	G=15 ,≤11.5	Include WDM and VOA loss
		G=20, ≤7.8	G=20, ≤8.3	
		G=25, ≤6	G=25, ≤6.5	
Gain flatness @GT=0	dB	< 1.5	< 1.5	@25℃
		< 2	< 2	@-5~55℃
Gain tilt /48nm	dB	-3 ~ 0	-3 ~ 0	0.2dB step
PDG	dB	< 0.5	< 0.5	
Input monitor range	dBm	-25 ~ 9	-25 ~ 9	
Input alarm threshold	dBm	-26	-26	
Output monitor range	dBm	-5~24.5	-5~24.5	
stability	dB	±0.5	±0.5	
In/out monitor accuracy	dB	±0.5	±0.5	
Output stable time @pump on	ms	<100	<100	
Transient time @Add/drop channels	ms	<1	<1	
Gain overshoot or under shoot @Add/drop channels	dB	-2 ~ 2	-2 ~ 2	@15 dB A/D

General specification

Item	Min.	Typ.	Max.	UNITS	Note
Input/Output Return loss	45			dB	
Pass Wavelength of OSC	1507		1514	nm	
Pass Wavelength of OTDR	1600		1650	dB	
Isolation for OSC to 1550	30			dB	
Isolation for 1550 to OSC	28			dB	
Isolation for 1550 to OTDR	45			dB	
IL for IN and OSCO			1.1	dB	
IL for OUT and OSCI			1.1	dB	
IL for OTDR path			1.3	dB	
PMD			0.5	Ps	
PDG			0.5	dB	
MON Coupling ratio	19		21.5	dB	1%

VOA specification

Item	Min.	Typ.	Max.	UNITS	Note
Wavelength Range	1524		1572.3	nm	
Type		Bright			
Insertion loss @home		0.5	1	dB	
Attenuation range			15	dB	
Attenuation accuracy			0.1	dB	
VOA WDL @0~8dB			0.5	dB	
VOA WDL @8~15dB			1	dB	
Return loss	40			dB	
PDL			0.5	dB	
VOA Response Time			200	ms	

Pigtail

Function	connector	Length(cm)	description
TBD	LC/UPC	TBD±2	900um,tight,white

Electrical interface

EDFA module electrical connector is 50 pin male,2.00 mm Pitch

PIN	Description	PIN	Description
1	+5VDC	2	+5VDC
3	+5VDC	4	+5VDC
5	+5VDC	6	+5VDC
7	GND	8	GND
9	GND	10	GND
11	Reserve	12	Reserve
13	GND	14	Reset Input
15	Serial Input (TTL)	16	Serial Output (TTL)
17	Pump Current Alarm(Active High)	18	Stage1 Input Los Alarm(Active High)
19	GND	20	GND
21	Reserve	22	INT(Active Low)
23	Reserve	24	Reserve
25	GND	26	Reserve
27	Stage2 Input Los Alarm(Active High)	28	GND
29	Stage2 Output/Gain Alarm(Active High)	30	GND
31	GND	32	GND
33	Case Temperature Alarm(Active High)	34	Stage1 Output/Gain Alarm(Active High)
35	Pump Temperature Alarm(Active High)	36	Reserve
37	NC	38	NC
39	Reserve	40	Reserve
41	GND	42	GND
43	GND	44	GND
45	+5VDC	46	+5VDC
47	+5VDC	48	+5VDC
49	+5VDC	50	+5VDC

Note：Alarm active is high 3.3V

Dimension(unit:mm)

Type A：130X80X15mm　(mark: M55)