SPA4300-GM01 (40×70×12mm)

Single Channel Small Form Factor Gain Block Pre-Amplifier EDFA Module

PRODUCT DESCRIPTION

SPA4300-GM01 is a single channel Gain Block Pre-Amplifier EDFA module , adopts subminiature 40 × 70 × 12mm compact package, combined with artistic package and best optic performance, creating the best flexible and variable low-cost amplifier in the market. This module is suitable for multiple network application, especially the application that requires 40GB/S transmission speed.

SPA4300-GM01 single channel Gain Block Pre-Amplifier EDFA module, uses high performance non-cooling pump laser, adopts the standard version of single channel and narrow bandwidth. A standard 6-PIN(Optional 14-Pin) electric connector allows the simple electric connection.

SPA4300-GM01 single channel Gain Block Pre-Amplifier EDFA module, main installed before the receiver to improve receiver sensitivity and extend signal transmission distance

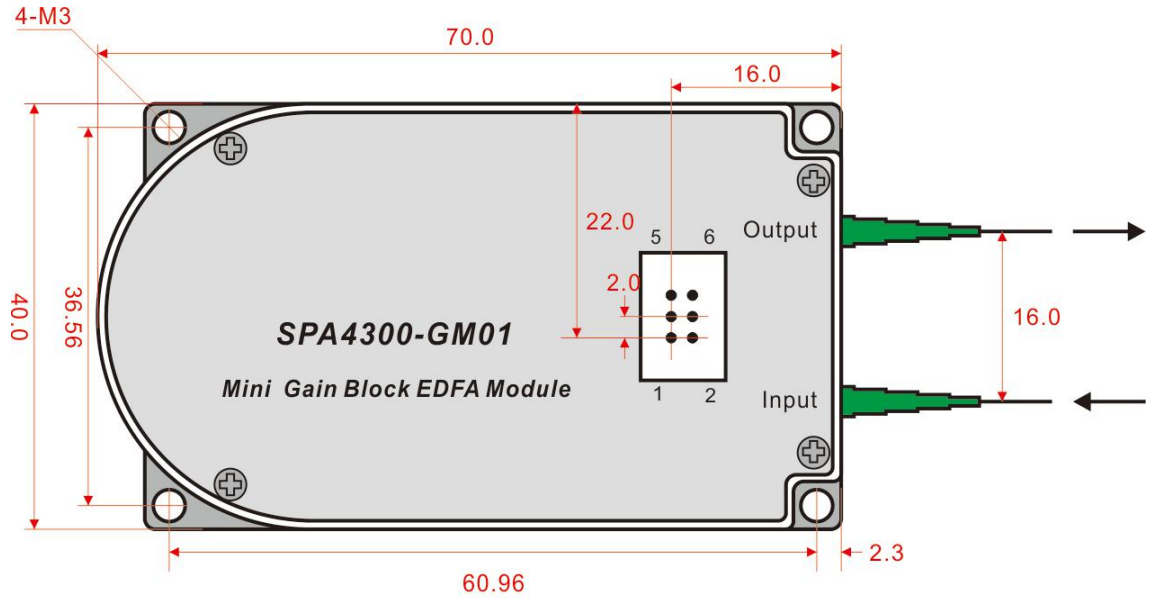
PRODUCT FEATURES

- ▶Gain block
- ▶Wide operating temperature range
- ▶15dB, 20dB, 25dB, 30dB, Gain optional
- ▶Small form factor package (40×70×12mm)
- ▶Low power consumption
- ▶Low cost

MAIN APPLICATION

- ▶Metropolitan and access networks
- ▶CATV
- ▶Single-channel or DWDM sub-systems
- ▶Optical Add/Drop and Cross-Connects
- ▶Transmitter and Receiver Amplification
- ▶Power equalization and flexible pre-emphasis

DIMENSIONS



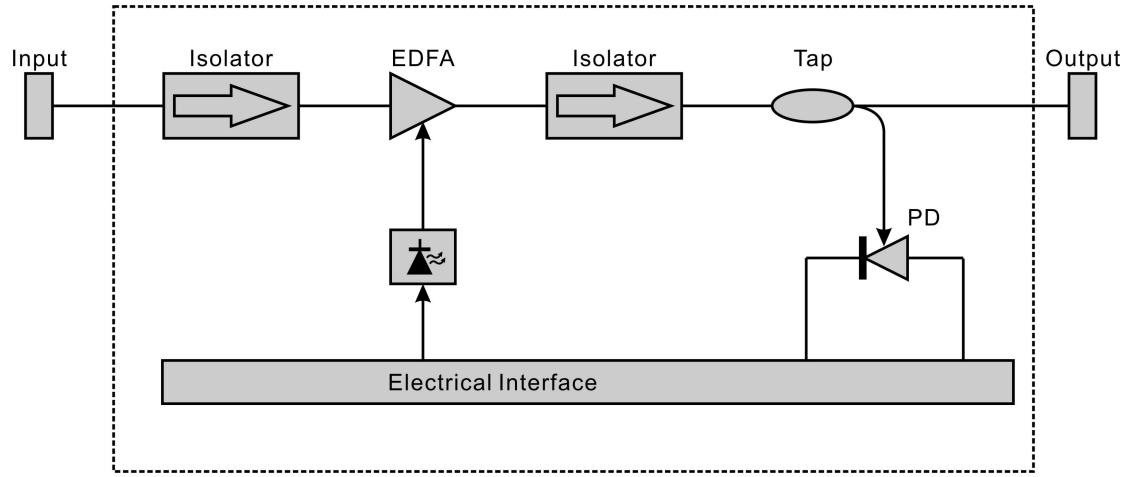
Unit:mm

TECHNICAL INDEX

Performance				Min.	Typ.	Max.
Optical feature	Operating wavelength range		(nm)	1528		1564
	Input optical power (pin)		(dBm)	-30		-10
	Gain @ Pin=-30dBm	SPA4315-GM01	(dB)	15		
		SPA4320-GM01		20		
		SPA4325-GM01		25		
		SPA4330-GM01		30		
	Noise figure		(dB)		4.0	4.5
	Polarization dependent gain (PDG)		(dB)			0.3
	Polarization mode dispersion (PMD)		(ps)			0.3
	Polarization dependent loss (PDL)		(dB)			0.3
	Pump power leakage		(dB)			-30
	Output & input isolation		(dB)	30		
	Return loss	UPC	(dB)	45		
		APC		55		
Electrical feature	Pump laser threshold current (70℃)		(mA)		50	70
	Pump laser operating current (BOL)		(mA)			600
	Pump laser operating voltage		(V)		1.75	2.2*
	Output monitor PD responsivity (70℃)		(μA/mW)	1.0		25
	Output monitor PD reverse voltage		(V)		5	20
	Output monitor PD forward current		(mA)			10
	Dark current (-5V, 25℃)		(nA)			5
General feature	Fiber type			SMF-28, 900μm loose tube		
	Connector type			LC, SC, FC		
	Connector polish			UPC, APC		
	Operating temp.		(°C)	-5		70
	Storage temp.		(°C)	-40		+85
	Relatice humidity		(%RH)	+5		+95
	Size (W) × (L) × (H)		(mm)	40× 70 × 12		

* 70℃, 18dBm output.

6-PIN FUNCTIONAL DIAGRAM

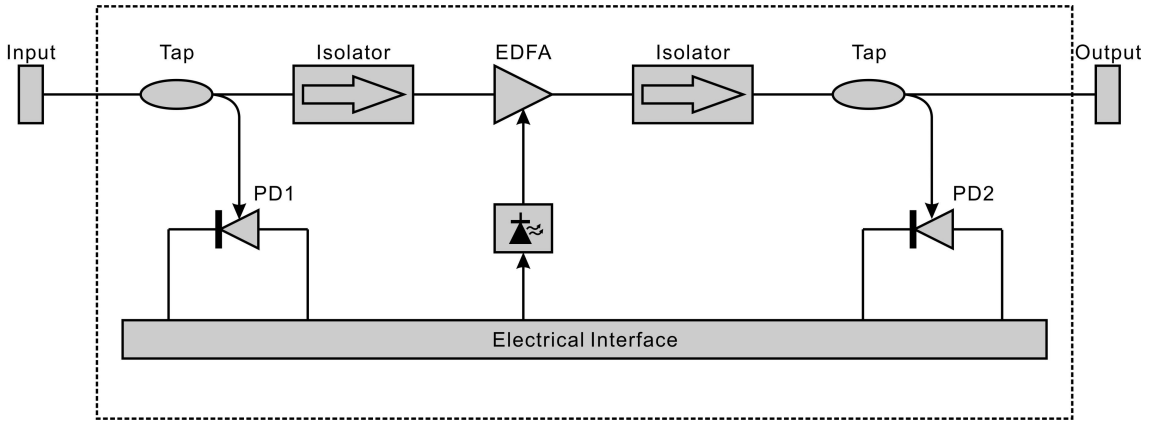


ELECTRICAL 6-PIN ASSIGNMENTS

Pin	Definition	Pin	Definition
1	Pump laser diode anode (+)	2	Pump laser diode cathode (-)
3	Output monitor PD anode (+)	4	Pump laser PD anode (+)
5	GND	6	Output monitor PD cathode (-)

Note: 6-Pin type: HIROSE DF11-6DP-2DSA

14-PIN FUNCTIONAL DIAGRAM



ELECTRICAL 14-PIN ASSIGNMENTS

Pin	Definition	Pin	Definition
1	Ground	2	Input monitor photodiode cathode(-)
3	Input monitor photodiode anode(+)	4	Output monitor photodiode cathode(-)
5	Output monitor photodiode anode(+)	6	NC
7	Laser diode anode(+)	8	Laser diode anode(+)
9	Laser diode monitor cathode(-)	10	Laser diode monitor anode(+)
11	Laser diode cathode(-)	12	NC
13	Ground	14	Laser diode cathode(-)

PRODUCT SERIES

Model	Gain (dB) (Pin=-30dBm)	Output power (dBm) (Pin=-30dBm)	Noise figure(dB)
SPA4315-GM01	15	-15	<4.5
SPA4320-GM01	20	-10	<4.5
SPA4325-GM01	25	-5	<4.5
SPA4330-GM01	30	0	<4.5

MODEL EXPLANATION

SPA 4 3 □□ – GM 01 – P□□ / □□ – □□

Product series	Optical bandwidth		Product Type		Gain		Module Type		Exterior		Number of Pin		Connector		Fiber length	
Single-channel PA EDFA Module	4	C-Band (1528~1564)	3	PA	15	15dB	GM	Gain block module	01	40×70×12	P06	6-Pin	LA	LC/APC	05	0.5M
					20	20dB			02	70×90×12	P14	14-Pin	LP	LC/UPC	08	0.8M
					25	25dB	FM	Full function module	05	125×150×20			SA	SC/APC	10	1.0M
					30	30dB							SP	SC/UPC		
													FA	FC/APC		
													FP	FC/UPC		