SPA4300-FM02 (70×90×15mm)

Full Function Single Channel MSA Compact Pre-Amplifier EDFA Module

PRODUCT DESCRIPTION

SPA4300-FM02 is a full-function optical Pre-Amplifier with digital control electronics, adopts 70 × 90 × 15mm MSA compact package. It is featured with high reliability, superior optical performance and compact reasonable configuration by Industrial standard, creating the most 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-FM02 full-function optical Pre-Amplifier module adopts the standard version of single channel and narrow bandwidth. The module uses high performance pump laser that with cooling function (also can use high performance non-cooling pump laser). A standard 30-PIN electric connector (HIROSE DF11-30DP-2DSA) allows the simple electric connection.

SPA4300-FM02 full-function Pre-Amplifier EDFA module, main installed before the receiver to improve receiver sensitivity and extend signal transmission distance.

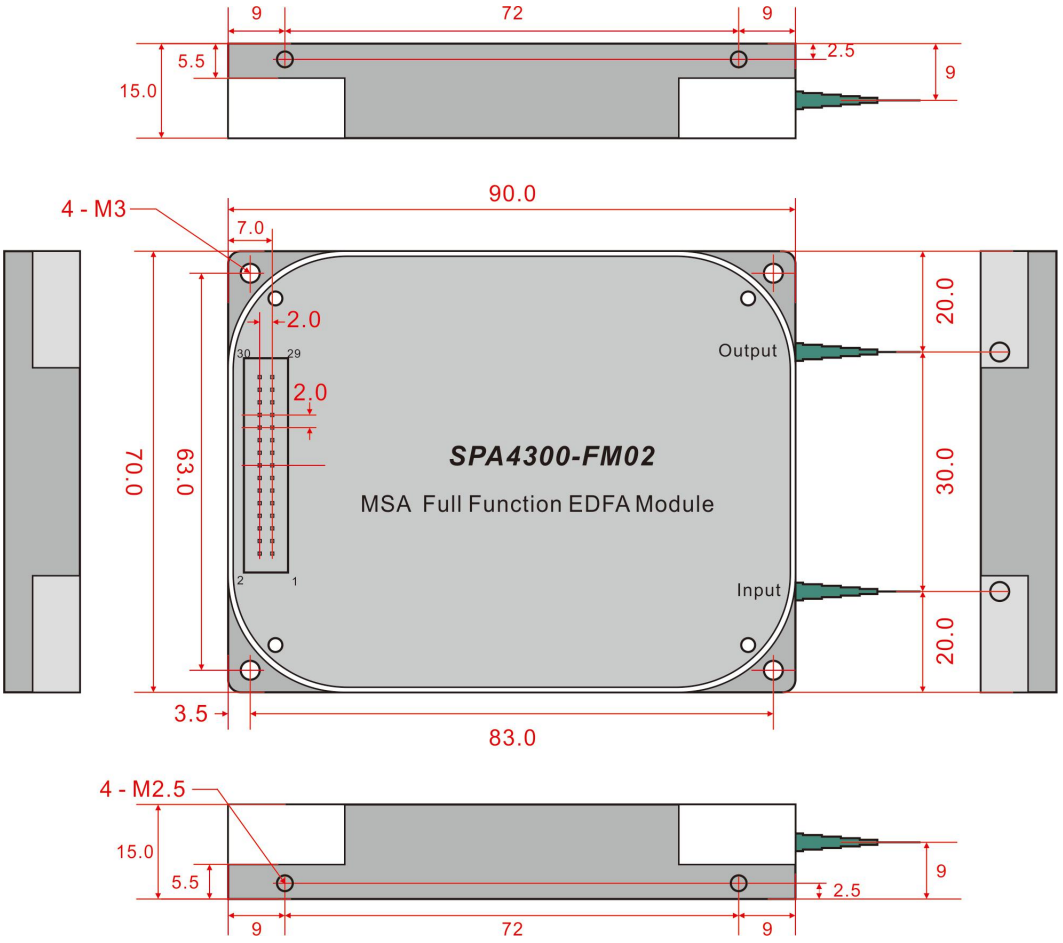
PRODUCT FEATURES

- ▶With Digital Control Electronics (Full Functiion)
- ▶APC,ACC mode
- ▶RS-232 standard communication interface, (Optional I^2C)
- ▶20dB, 25dB, 30dB, 35dB, 40dB, Gain optional
- ▶MSA compact package (70×90×15mm)
- ▶Low power consumption
- ▶Low cost
- ▶Wide operating temperature range

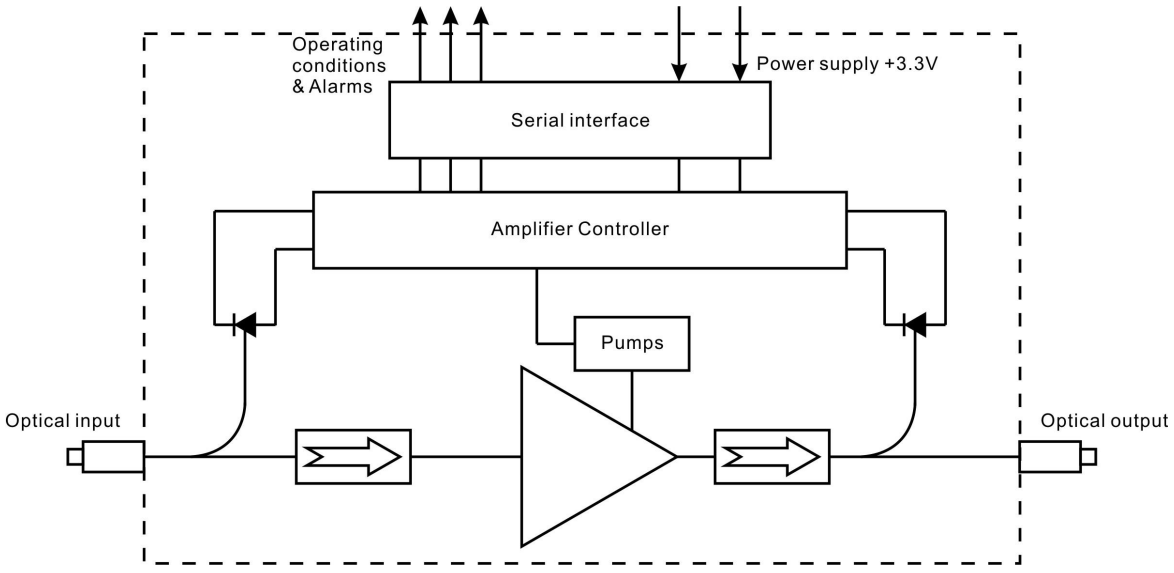
MAIN APPLICATION

- ▶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



FUNCTIONAL DIAGRAM



TECHNICAL INDEX

Performance				Min.	Typ.	Max.
Optical feature	Operating wavelength range		(nm)	1528		1564
	Input optical power (pin)		(dBm)	-10		+4
	Signal gain @ Pin = - 30dBm	SPA4320-FM02	(dB)	20		
		SPA4325-FM02		25		
		SPA4330-FM02		30		
		SPA4335-FM02		35		
		SPA4340-FM02		40		
	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		
	Fiber type			SMF-28, 900μm loose tube		
	Connector type			LC, SC, FC		
	Connector polish			UPC, APC		
General feature	Communication interface			RS232		
	Power Supply Voltage [1)]		(V)	3.1	3.3	3.5
	Power Consumption	Uncooled	(W)		1.0	2.0
		Cooled			2.0	10.0
	Operating temp.		(°C)	-5		70
	Storage temp.		(°C)	-40		+85
	Relatice humidity		(%RH)	+5		+95
	Size (W) × (L) × (H)		(mm)	70× 90 × 15		

Note: 1. Optional built-in filter to reduce the noise figure of EDFA, such as adopt C34 (1550.12nm), applicable SDH network

2. Power supply voltage optional DC+5V

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	Gain (dB) (Pin=-30dBm)	Output power (dBm) (Pin=-30dBm)	Noise figure (dB)	Filter
SPA4320-FM02/S-000	20	-10	<4.5	Without filter
SPA4325-FM02/S-000	25	-5	<4.5	
SPA4330-FM02/S-000	30	0	<4.5	
SPA4335-FM02/H-000	35	5	<4.5	
SPA4325-FM02/S-XXX	25	-5	<4.0	With filter
SPA4330-FM02/S-XXX	30	0	<4.0	
SPA4335-FM02/H-XXX	35	5	<4.0	
SPA4340-FM02/H-XXX	40	10	<4.0	

MODEL EXPLANATION

SPA 4 3 □□ – FM 02 / □ – □□□ – □□ / □□

Product series	Optical bandwidth		Product Type		Gain		Module Type		Exterior		Type		Built-in filter		Connector		Fiber length	
Single-channel PA EDFA Module	4	C-Band (1528~1564)	3	PA	20	20dB	FM	Full function module	01	40×70×12	S	Standard	000	NO	LA	LC/APC	05	0.5M
					25	25dB			02	70×90×15	H	Low noise, high gain	C34	1550.12nm Applicable SDH network	LP	LC/UPC	08	0.8M
					30	30dB	GM	Gain block module	05	125×150×20					SA	SC/APC	10	1.0M
					35	35dB							CXX	100GHz ITU Standard wavelength	SP	SC/UPC		
					40	40dB									FA	FC/APC		
													HXX	50GHz ITU Standard wavelength	FP	FC/UPC		
													CBL	1528~1543nm				
													CRe	1547~1563nm				