

SBA4100-FM02 Series
Full Function Single Channel
MSA Compact EDFA Module

Technical Specification

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1.0 PRODUCT DESCRIPTION

SBA4100-FM02 is a full-function optical booster with digital control circuit, adopts $70 \times 90 \times 15\text{mm}$ 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.

SBA4100-FM02 full-function optical booster 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.

SBA4100-FM02 full-function booster EDFA module, main installed behind the optical transmitter to increase the output power of the transmitter and extend the signal transmission distance.

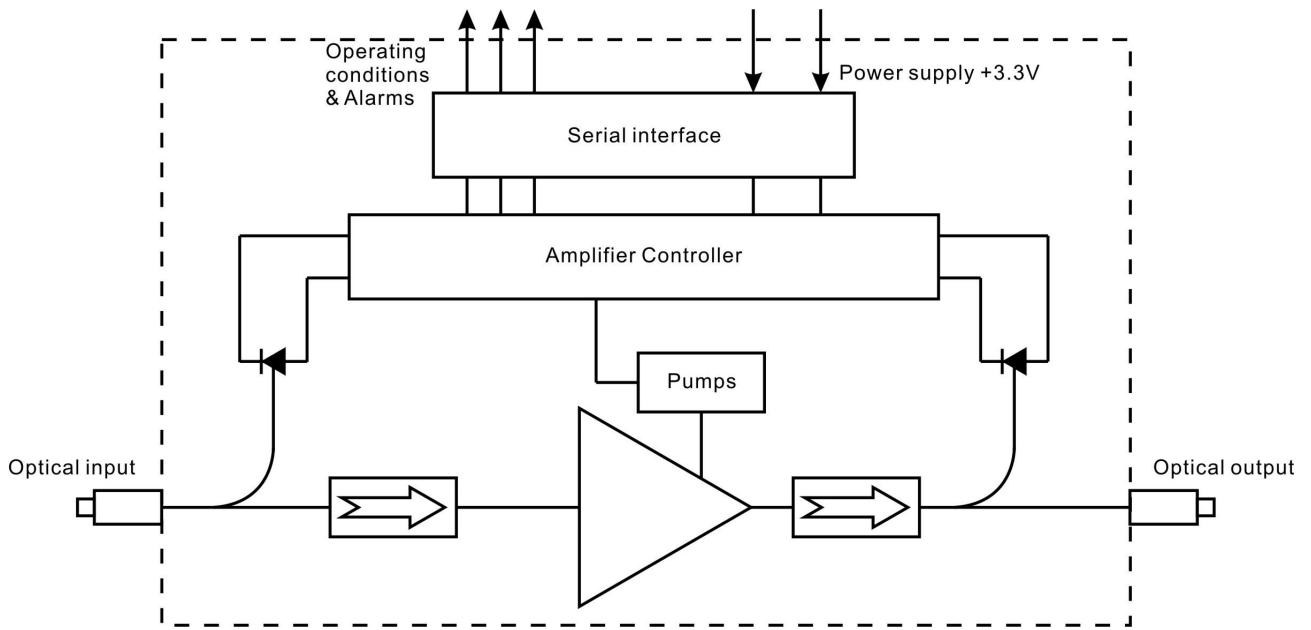
2.0 PRODUCT FEATURE

- With Digital Control Electronics (Full Function)
- APC, ACC mode
- RS-232 standard communication interface, (Optional I²C)
- Output power 13~23dBm optional
- MSA compact package (70×90×15mm)
- Low power consumption
- Low cost
- Wide operating temperature range

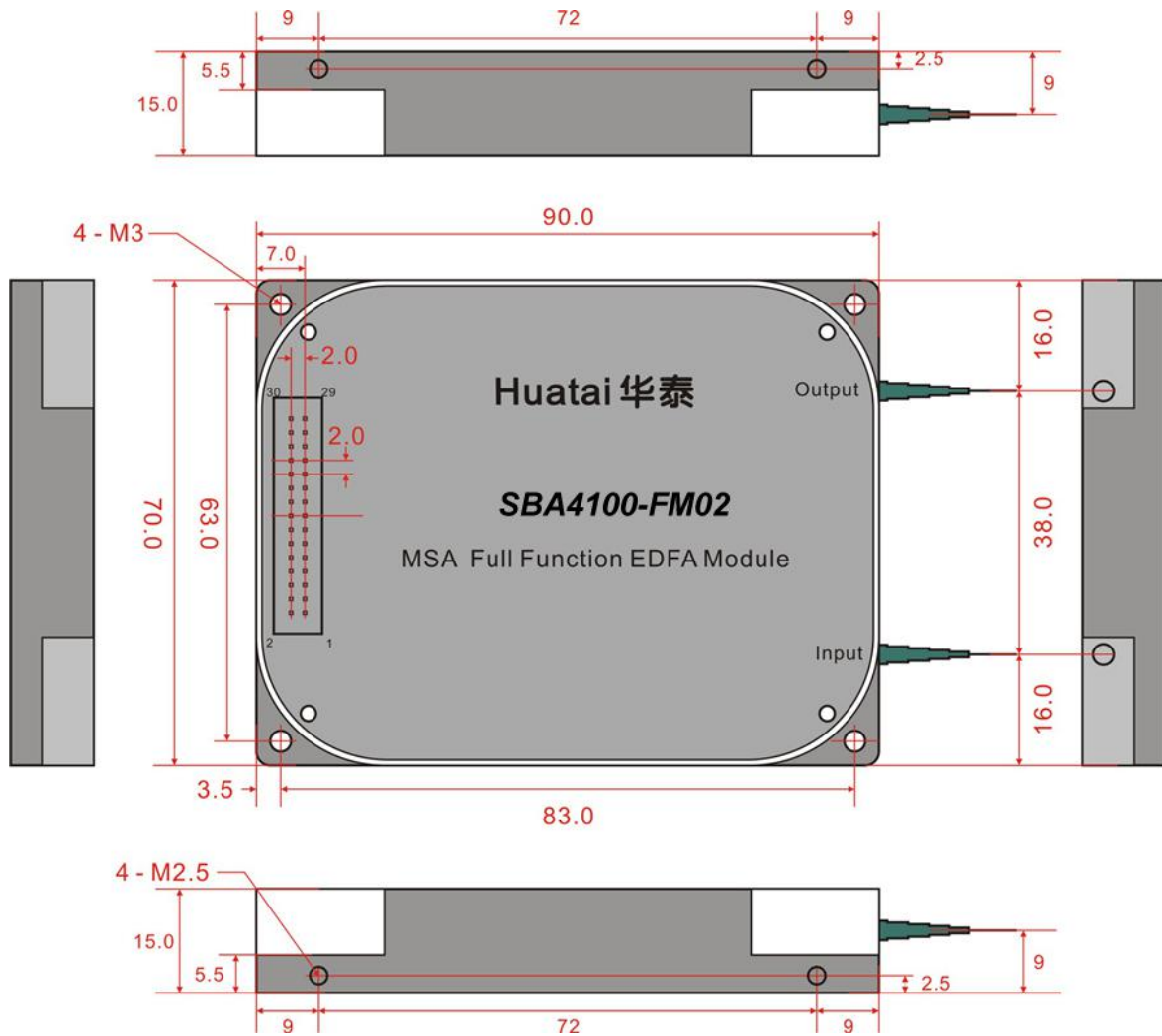
3.0 MAIN APPLICATION

- 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

4.0 Functional diagram



5.0 Dimensions



6.0 Electrical 30-Pin Assignments

Pin	Definition	Pin	Definition
1	+3.3V	2	+3.3V
3	NC	4	NC
5	GND	6	GND
7	RS-232 Rx	8	RS-232 Tx
9	GND	10	GND
11	NC	12	RESET input, (active Low)
13	Amplifier disable input, (active high)	14	Output power mute input, (active high)
15	Case temperature alarm, (active high)	16	Common alarm, (active Low)
17	Pump temperature alarm, (active high)	18	Pump bias alarm, (active high)
19	Loss of input alarm, (active high)	20	Loss of output alarm, (active high)
21	Input power monitor ground	22	Output power monitor ground
23	Input power monitor	24	Output power monitor
25	GND	26	GND
27	NC	28	NC
29	+3.3V	30	+3.3V

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

7.0 Technique index

Performance			Min.	Typ.	Max.	
Optic feature	Operating wavelength range		(nm)	1528		1564
	Input optical power (Pin)		(dBm)	-10		+4
	Total Output power @ Pin=0dBm	SBA4113-FM02	(dBm)	13		19
		SBA4114-FM02		14		
		SBA4115-FM02		15		
		SBA4116-FM02		16		
		SBA4117-FM02		17		
		SBA4118-FM02		18		
		SBA4119-FM02		19		
		SBA4120-FM02		20		
		SBA4121-FM02		21		
		SBA4122-FM02		22		
		SBA4123-FM02		23		
	Noise figure		(dB)		4.0	5.0
	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
Store temp.	(°C)	-40		+85
Relative humidity	(%RH)	+5		+95
Size(W) × (L) × (H)	(mm)	70× 90 × 15		

Note: 1. Power supply voltage optional DC+5V

8.0 PRODUCT SERIES

Model	Input optical power (dBm)	Output power (dBm) (Pin=0dBm)	Noise figure (dB)
SBA4113-FM02	-10~+4	13	<4.0
SBA4114-FM02	-10~+4	14	<4.0
SBA4115-FM02	-10~+4	15	<4.0
SBA4116-FM02	-10~+4	16	<4.0
SBA4117-FM02	-10~+4	17	<4.0
SBA4118-FM02	-10~+4	18	<4.0
SBA4119-FM02	-10~+4	19	<4.5
SBA4120-FM02	-10~+4	20	<4.5
SBA4121-FM02	-10~+4	21	<4.5
SBA4122-FM02	-10~+4	22	<5.0
SBA4123-FM02	-10~+4	23	<5.0

9.0 ORDER INFORMATION

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Product series	Optical bandwidth		Product Type		Output power		Module Type		Exterior		Connector		Fiber length	
			1	BA	13	13dBm	FM	Full function module	01	40 × 70 × 12	LA	LC/APC	05	0.5M
Single-channel BA EDFA Module	4	C-Band (1528~1564)	1	BA	14	14dBm	FM	Full function module	02	70 × 90 × 15	LP	LC/UPC	08	0.8M
					15	15dBm			GM	Gain block module	05	125 × 150 × 20	SA	SC/APC
					16	16dBm						SP	SC/UPC	
					17	17dBm					FA	FC/APC		
					18	18dBm					FP	FC/UPC		
					19	19dBm								
					20	20dBm								
					21	21dBm								
					22	22dBm								
					23	23dBm								