SBA4100-GM02 (70×90×12mm)

Single Channel Gain Block MSA Compact Booster EDFA Module

PRODUCT DESCRIPTION

SBA4100-GM02 is a single channel gain block booster EDFA module, adopts 70 × 90 × 12mm 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-GM02 single channel gain block booster EDFA module adopts the standard version of single channel and narrow bandwidth. The module uses high performance pump laser that with cooling function. A standard 20-PIN electric connector (HIROSE DF11-20DP-2DSA) allows the simple electric connection.

SBA4100-GM02 single channel gain block booster EDFA module, main installed behind the optical transmitter to increase the output power of the transmitter and extend the signal transmission distance.

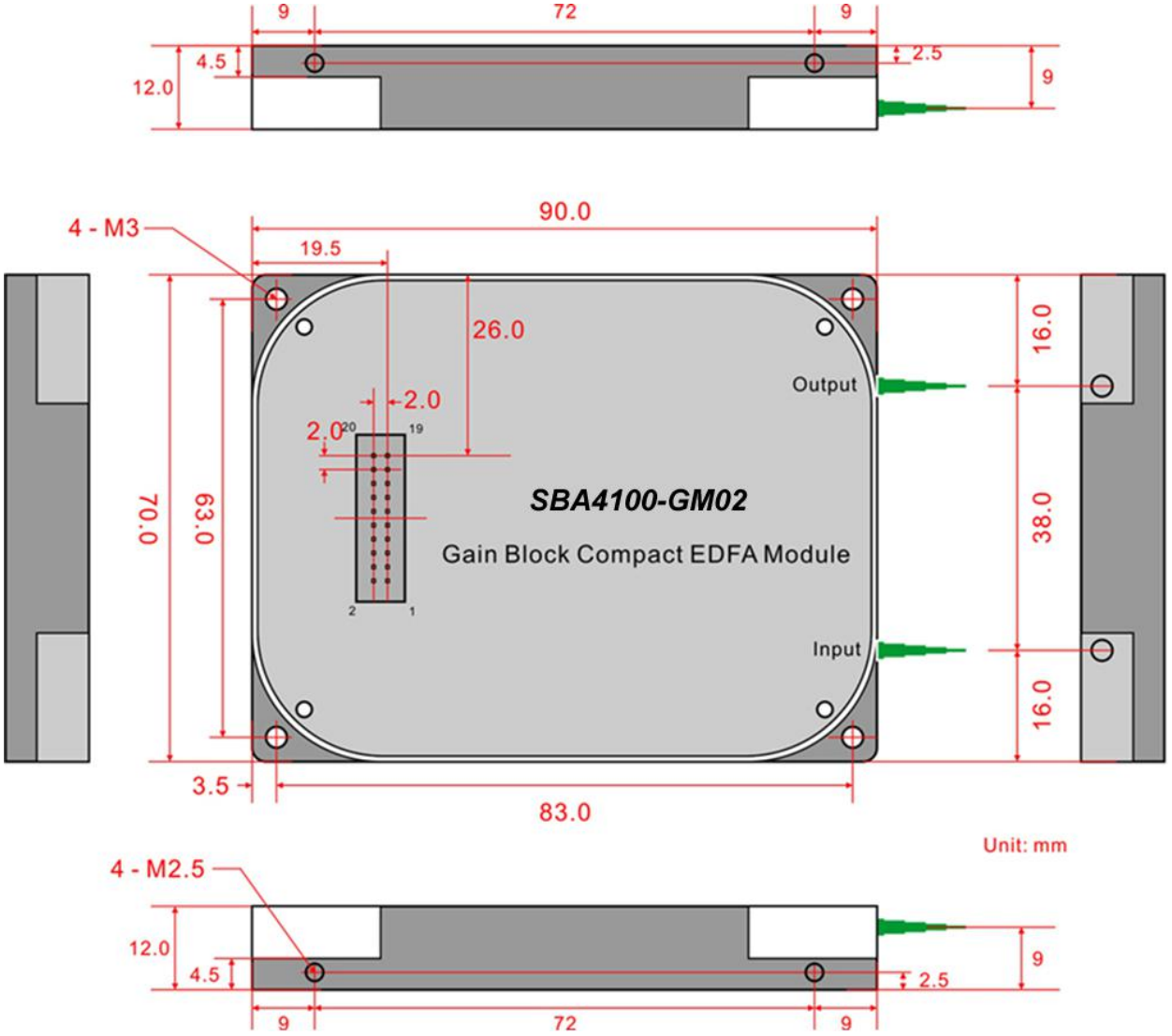
PRODUCT FEATURES

- ▶Gain block
- ▶Wide operating temperature range
- ▶Output power 13~23dBm optional
- ▶MSA compact package (70×90×12mm)
- ▶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


9
72
9
4.5
12.0
2.5
9
4 - M3
90.0
19.5
26.0
2.0
2.0
20
19
1
2
Output
Input
SBA4100-GM02
Gain Block Compact EDFA Module
70.0
63.0
16.0
38.0
16.0
3.5
83.0
Unit: mm
4 - M2.5
12.0
4.5
9
72
9
2.5
9

TECHNICAL INDEX

Optical features & General feature

Performance				Min.	Typ.	Max.
Optical feature	Operating wavelength range		(nm)	1528		1564
	Input optical power (pin)		(dBm)	-10		+4
	Total output power @ Pin=0dBm	SBA4113-GM02	(dBm)	13		
		SBA4114-GM02		14		
		SBA4115-GM02		15		
		SBA4116-GM02		16		
		SBA4117-GM02		17		
		SBA4118-GM02		18		
		SBA4119-GM02		19		
		SBA4120-GM02		20		
		SBA4121-GM02		21		
		SBA4122-GM02		22		
		SBA4123-GM02		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		
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)	70× 90 × 12		

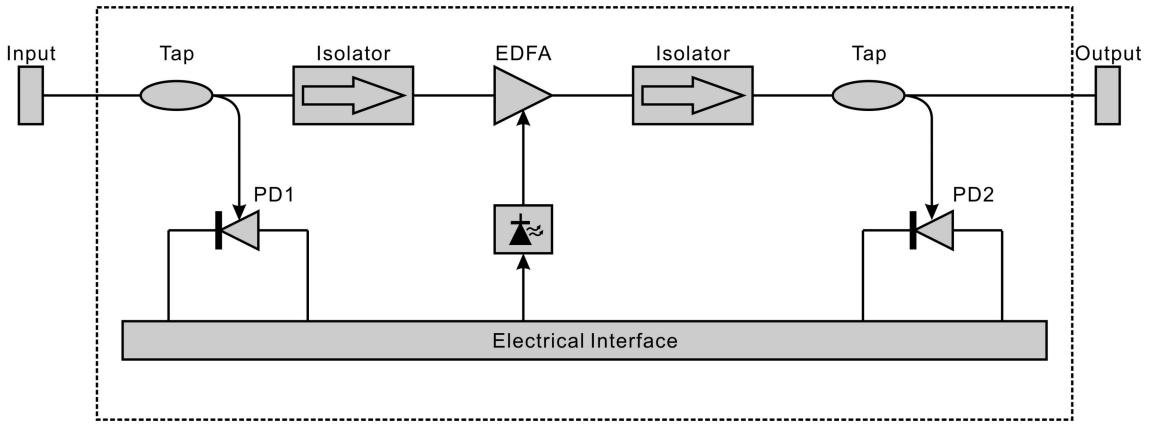
Input and output monitor PD specifications

Performance		Min.	Typ.	Max.
Input monitor PD responsivity	(μA/mW)	30	-	75
Output monitor PD responsivity	(μA/mW)	1.0	-	25
Monitor PD reverse voltage	(V)	-	5	20
Monitor PD forward current	(mA)	-	-	10
Dark current (-5v, 25℃)	(nA)	-	-	5

Pump laser specifications

Performance		Min.	Typ.	Max.
Pump laser threshold current	(mA)	-	40	55
Pump laser operating current (BOL)	(mA)	-	-	1200
Pump laser operating voltage	(V)	-	-	2.6
TEC current (max. △T=50℃)	(A)	-	-	2.2
TEC voltage (max. △T=50℃)	(V)	-	-	3.3
Thermstor resistance (25℃)	(KΩ)	9.5	10	10.5

FUNCTIONAL DIAGRAM



ELECTRICAL 20-PIN ASSIGNMENTS

Pin	Definition	Pin	Definition
1	Ground, optical power monitor PD	2	Input monitor PDcathode(-)
3	Input monitor PD anode(+)	4	Output monitor PD cathode(-)
5	Output monitor PD anode(+)	6	Thermistor
7	Laser diode anode(+)	8	Pump laser diode anode (+)
9	Pump backfacet monitor PD cathode (-)	10	Pump backfacet monitor PD anode (+)
11	TEC anode (+)	12	TEC anode (+)
13	TEC anode (+)	14	TEC cathode (-)
15	TEC cathode (-)	16	TEC cathode (-)
17	Ground, pump laser diode	18	Thermistor
19	Pump laser diode cathode (-)	20	Pump laser diode cathode (-)

Note 1: Electrical connection is made via a male 20 PIN connector (2 rows of 10, pin pitch 2.0mm, 0.5×0.5mm), Samtec TMMH-110-01-G-DV-EC or equivalent.

Note 2: The gain block case is isolated with the pump laser diode case.

PRODUCT SERIES

Model	Input optical power (dBm)	Output power (dBm) (Pin=0dBm)	Pump laser	Noise figure (dB)
SBA4113-GM02-C	-10~+4	13	Cooling	<4.0
SBA4114-GM02-C	-10~+4	14		<4.0
SBA4115-GM02-C	-10~+4	15		<4.0
SBA4116-GM02-C	-10~+4	16		<4.0
SBA4117-GM02-C	-10~+4	17		<4.0
SBA4118-GM02-C	-10~+4	18		<4.0
SBA4119-GM02-C	-10~+4	19		<4.5
SBA4120-GM02-C	-10~+4	20		<4.5
SBA4121-GM02-C	-10~+4	21		<4.5
SBA4122-GM02-C	-10~+4	22		<5.0
SBA4123-GM02-C	-10~+4	23		<5.0

MODEL EXPLANATION

SBA 4 1 □□ – GM 02 / □□ – □□

Product series	Optical bandwidth		Product Type		Output power		Module Type		Exterior		Connector		Fiber length	
Single-channel BA EDFA Module	4	C-Band (1528~1564)	1	BA	13	13dBm	GM	Gain block module	01	40×70×12	LA	LC/APC	05	0.5m
					14	14dBm			02	70×90×12	LP	LC/UPC	08	0.8m
					15	15dBm	FM	Full function module			SA	SC/APC	10	1.0m
					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								