Ver. 2.4en

# SBA4100-GM01 Series

# Single Channel Gain Block

# Small Form Factor EDFA Module

## Technical Specification

# CONTENT

## 1.0 PRODUCT DESCRIPTION

SBA4100-GM01 is a single-channel gain block booster EDFA module, adopts subminiature 40 × 70 × 12mm compact package. The module uses high performance non-cooling pump laser, 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.

SBA4100-GM01 gain block booster EDFA module adopts the standard version of single channel and narrow bandwidth. A standard 6-Pin (optional 14-PIN) electric connector allows the simple electric connection.

SBA4100-GM01 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.

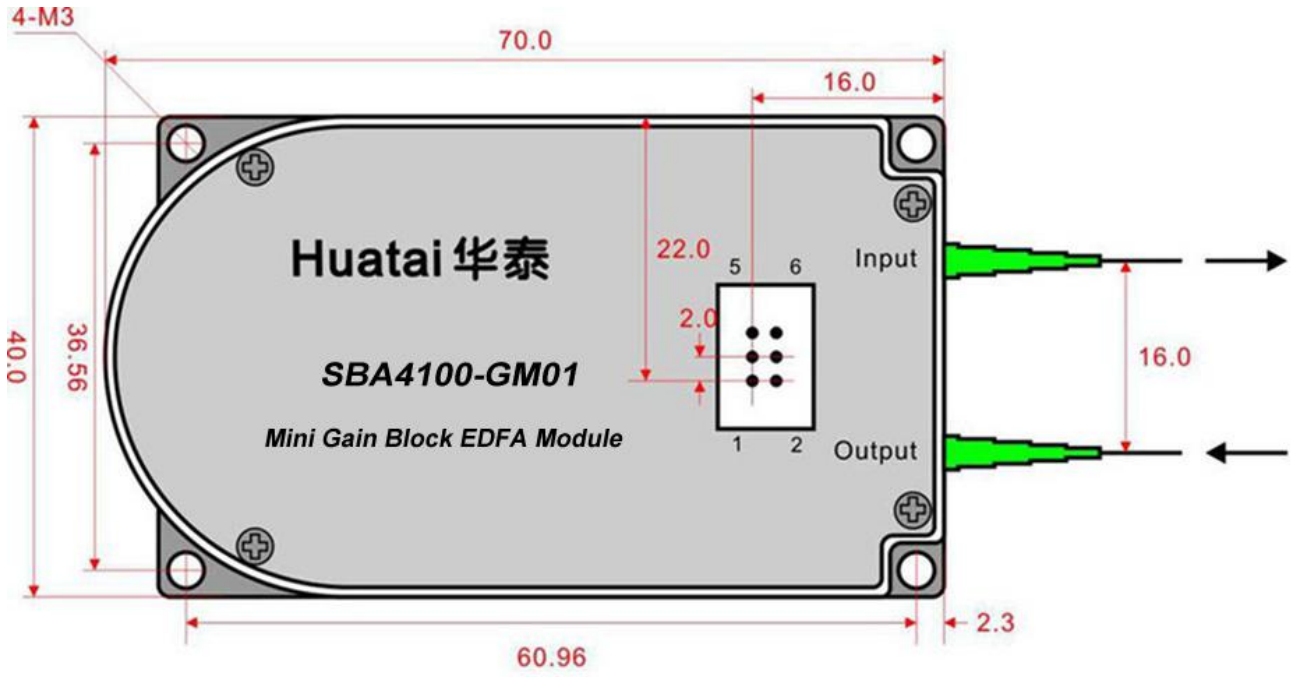
## 2.0 PRODUCT FEATURE

- Gain block
- Wide operating temperature range
- Output power 13~19dBm optional
- Small form factor package (40×70×12mm )
- Low power consumption
- Low cost

## 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 Dimensions




Unit:mm

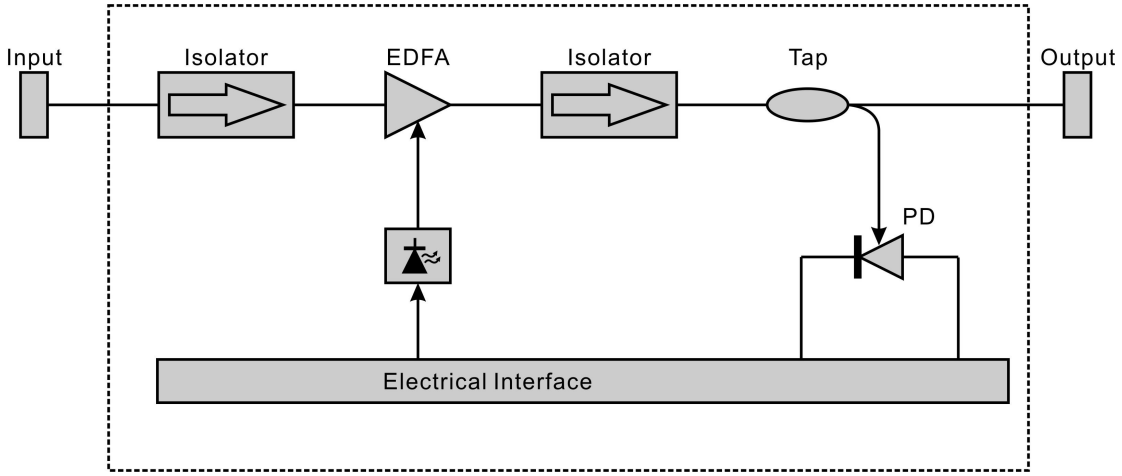
## 5.0 Technique index

| 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-GM01 | (dBm) | 13 | | 19 |
| | | SBA4114-GM01 | | 14 | | |
| | | SBA4115-GM01 | | 15 | | |
| | | SBA4116-GM01 | | 16 | | |
| | | SBA4117-GM01 | | 17 | | |
| | | SBA4118-GM01 | | 18 | | |
| | | SBA4119-GM01 | | 19 | | |
| | 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 | | |
| 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 |
| | Store temp. | | (°C) | -40 | | +85 |

| | | | | | |
|---|---|---|---|---|---|
| | Relative humidity | (%RH) | +5 | | +95 |
| | Size(W) × (L) × (H) | (mm) | 40× 70 × 12 | | |

* 70℃, 18dBm output.

## 6.0 6-Pin FUNCTIONAL DIAGRAM

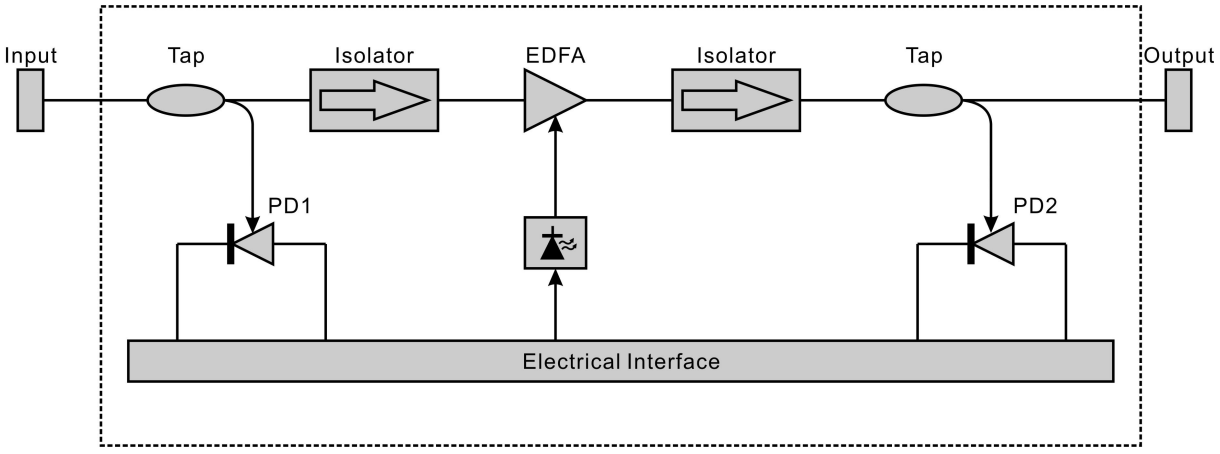



## 7.0 Electrical 6-Pin Assignments

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

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

## 8.0 14-Pin FUNCTIONAL DIAGRAM



## 9.0 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(-) |

Note: 14-Pin type: HIROSE DF11-14DP-2DSA

## 10.0 ORDER INFORMATION

SBA 4 1 □□ – GM 01 – P□□ / □□ – □□

| Product series | Optical bandwidth | | Product Type | | Output power | | Module Type | | Exterior | | Number of Pin | | 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 | P06 | 6-Pin | LA | LC/APC | 05 | 0.5M |
| | | | | | 14 | 14dBm | | | 02 | 70×90×12 | P14 | 14-Pin | LP | LC/UPC | 08 | 0.8M |
| | | | | | 15 | 15dBm | FM | Full function module | 05 | 125×150×20 | | | SA | SC/APC | 10 | 1.0M |
| | | | | | 16 | 16dBm | | | | | | | SP | SC/UPC | | |
| | | | | | 17 | 17dBm | | | | | | | FA | FC/APC | | |
| | | | | | 18 | 18dBm | | | | | | | FP | FC/UPC | | |
| | | | | | 19 | 19dBm | | | | | | | | | | |