



# 27dBm High Power Fiber Amplifier Module

## ►► Description

The YEDFA-CA-EM-A-27 fiber amplifier series are especially designed as highly reliable amplifiers for FTTx, CATV, FDC and HFC analog applications. Compared with conventional amplifiers, these modules are more compact, powerful, and have higher reliability and stability.

Both input and output signals are monitored with feedback circuit. ACC (automatic current control), APC (automatic power control) and AGC (automatic gain control) circuit are employed in the amplifiers to ensure the high stability and reliability of output power. An EVOA is built in to extend output power range to -3dBm. Integrated power monitors inside enables ease of operation via the featured RS-232 interface linked to customer's control system. **Key Feature: Gain fiber is encased inside a hermetic sealed package.**

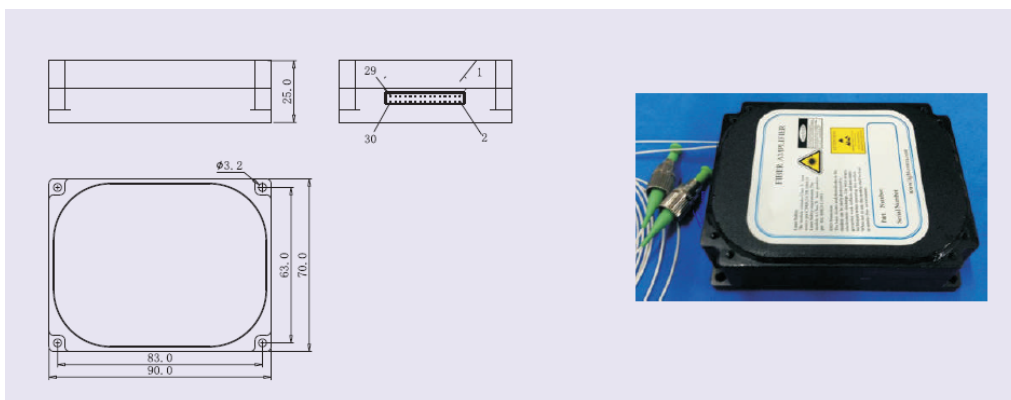
## ►► Features

- Compact size: 90×70×25mm
- Wide operating temperature range
- High stability and reliability based on multi-mode pump and fiber combiner technology
- RS-232 interface
- Low noise figure

## ►► Applications

- Data transmission
- Power actuator
- Measurement for optical devices and system
- Detection for gas absorption
- Analog CATV long distance transmission
- Video optical transmission system
- Optical distributing system
- In-line Amplification
- FTTx

## ►► Typical Mechanical Structure



Mechanical Outline: 90×70×25mm Module

Notes: To mount the module, please use M3.0 or smaller screw.



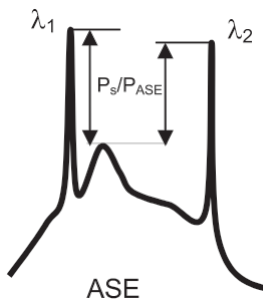
## ►► Specifications:

### Optical Characteristics

| Parameter              | Unit | Typ.           | Notes  |
|------------------------|------|----------------|--|
| Operating wavelength   | nm   | 1543~1565      | Other wavelength upon request. Refer to illustration below |
| Output power           | dBm  | -3 ~ +27       | Adjusted by EVOA when output power<17dBm                   |
| Input power            | dBm  | 0 ~ +10        | Lower input power is possible, discussion in details       |
| Output power stability | dB   | <0.2           | APC mode, over 2 hours                                     |
| Noise figure           | dB   | <7.0           | Pin=3dBm, 1550nm   |
| Control mode           |      | Selectable     | APC, AGC or ACC  |
| Return loss            | dB   | >45            |  |
| Output fiber type      |      | SMF-28         | 900μm Jacket   |
| Connector type         |      | FC/APC, SC/APC | Other type upon request                                    |

### Mechanical & Environmental characteristics

| Parameter             | Unit | Typ.                          | Notes               |
|-----------------------|------|-------------------------------|---------------------|
| Dimensions(LxWxH)     | mm   | 90x70x25                      | Module              |
| Weight                | g    | 250                           |                     |
| Cooling               |      | Conductive via bottom surface | Heat sink is needed |
| Operating temperature | ℃    | -5 to +55                     |                     |
| Storage temperature   | ℃    | -20 to +70                    |                     |
| Humidity              | %    | 10 to 90                      |                     |



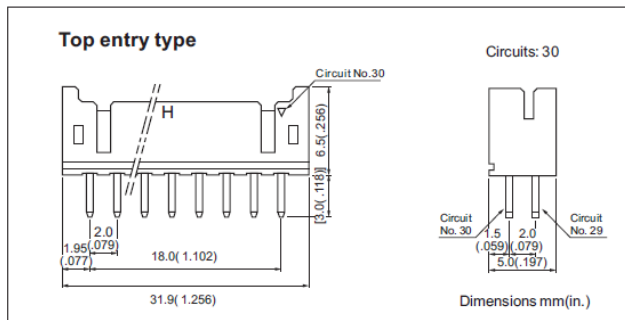
Operation wavelength range:  $\Delta\lambda = \lambda_2 - \lambda_1$

Operation wavelength range depends on the output signal power ( $P_s$ )/ASE peak power ( $P_{ASE}$ ). With low input power,  $P_s/P_{ASE}$  is small and the operation wavelength is relative narrow.

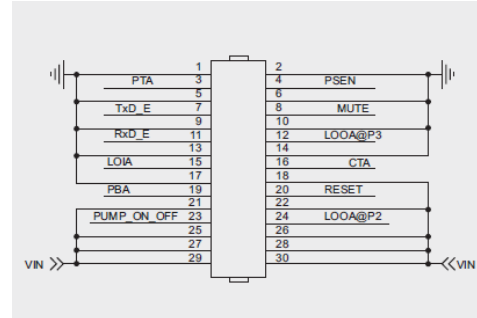
Operation wavelength is adjustable according to amplifier configuration. When ordering, discussion is necessary.

## ►► Pin Out

### Connector type



### Electrical PIN Assignment



**Pin Definitions**

| NAME        | PIN NO.                    | DESCRIPTION  |
|-------------|----------------------------|--|
| TxD_E       | 7                          | Transmitter Data Output of the Serial (UART) Port.   |
| RxD_E       | 11                         | Receiver Data Input of the Serial (UART) Port.   |
| PTA         | 3                          | Pump Temperature Alarm. Active high.   |
| PSEN        | 4                          | Program Store Enable. This pin remains low during internal program execution.<br>PSEN is used to enable serial download mode when pulled low to DGND on power-up or reset. |
| MUTE        | 8                          | Output Power Mute input. Active high.  |
| LOOA@P3     | 12                         | Loss Of Output@P3 Alarm. Active high.  |
| LOIA        | 15                         | Loss Of Input Alarm. Active high.  |
| CTA         | 16                         | Case Temperature Alarm. Active high.   |
| PBA         | 19                         | Pump Bias Alarm. Active high.  |
| RESET       | 20                         | External reset input: A HIGH on this pin resets the device   |
| PUMP_ON_OFF | 23                         | External ON or shut off PUMP input: A HIGH on this pin shut off PUMP,A LOW on this pin enable PUMP on.   |
| LOOA@P2     | 24                         | Loss Of Output@P2 Alarm. Active high.  |
| GND         | 1,2,5,6,9,10, 13,14,17     | Ground.  |
| VIN         | 18,21,22,25,26,27,28,29,30 | Positive Supply Voltage.   |

**Electrical Characteristics**

| Parameters         | Symbol | Min. | Typ. | Max. | Unit |
|--------------------|--------|------|------|------|------|
| Power supply       | V      | 3.1  | 3.3  | 5.5  | V    |
| Power consumption  | P      | -    | 11   | -    | W    |
| TTL input voltage  | H      | 2.4  | -    | -    | V    |
|                    | L      | -    | -    | 0.8  | V    |
| TTL output voltage | H      | 2.4  | -    | -    | V    |
|                    | L      | -    | -    | 0.4  | V    |

**Order Information**

YEDFA-CA-EM-A-27-XX/XXX

 Optical connector: FC/APC, SC/APC or upon request