

**EATV5100-GM01 Series**  
**Small Form Factor (40×70×12mm)**  
**CATV EDFA Module (Gain Block)**

**Technical Specification**

Hangzhou Huatai Optic Tech. Co., Ltd

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## **1.0 PRODUCT DESCRIPTION**

Huatai EATV5100 series is a low noise, high performance, high cost-effective EDFA module, which is specially designed for CATV system.

GM is Gain Block Module, without electronic control circuit.

FM is Full function Module which is with electronic control circuit.

EATV5100-GM01 is a gain module, using  $40 \times 70 \times 12$ mm mini package, with single channel and narrow bandwidth standard version. A standard 6-pin or 12-pin electric connector provides simple electrical connection. The module adopts a high performance uncooled pump laser, the output optical power up to 19dBm.

Huatai is a famous manufacture of EDFA. Products with high-performance, high reliability and excellent cost performance, as well as our good service make it to be an ideal choice for OEM system integrators.

## **2.0 PRODUCT FEATURE**

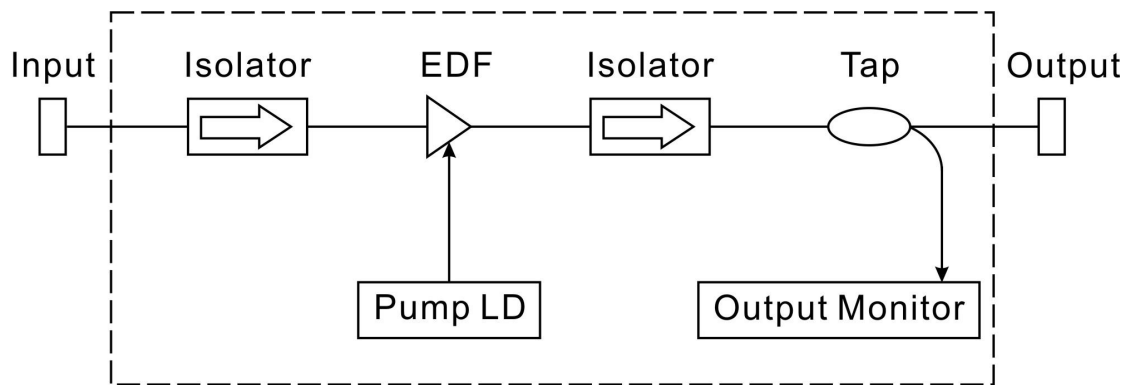
- High performance gain module
- Small form factor package ( $40 \times 70 \times 12$ mm)
- The output optical power up to 19dBm
- Excellent optical performance
- Low noise figure, suitable for all kinds of CATV application
- Low consumption
- Wide range of working temperature
- Excellent cost performance

## **3.0 MAIN APPLICATION**

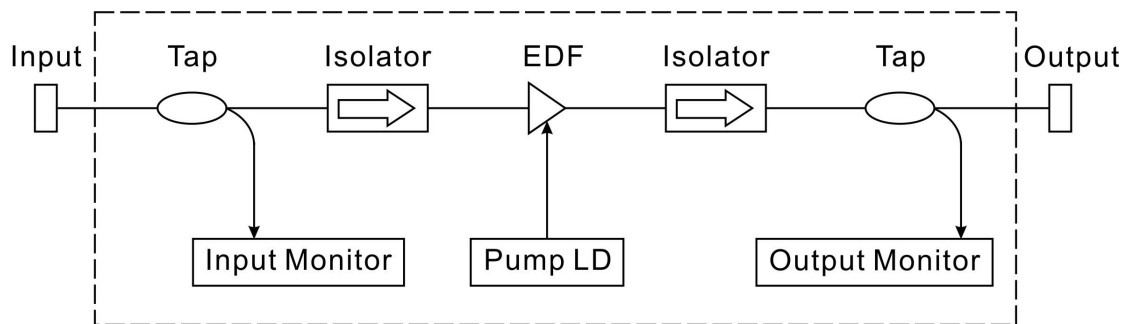
- CATV
- FTTx PON
- Other single channel optical communication system

## 4.0 Functional diagram

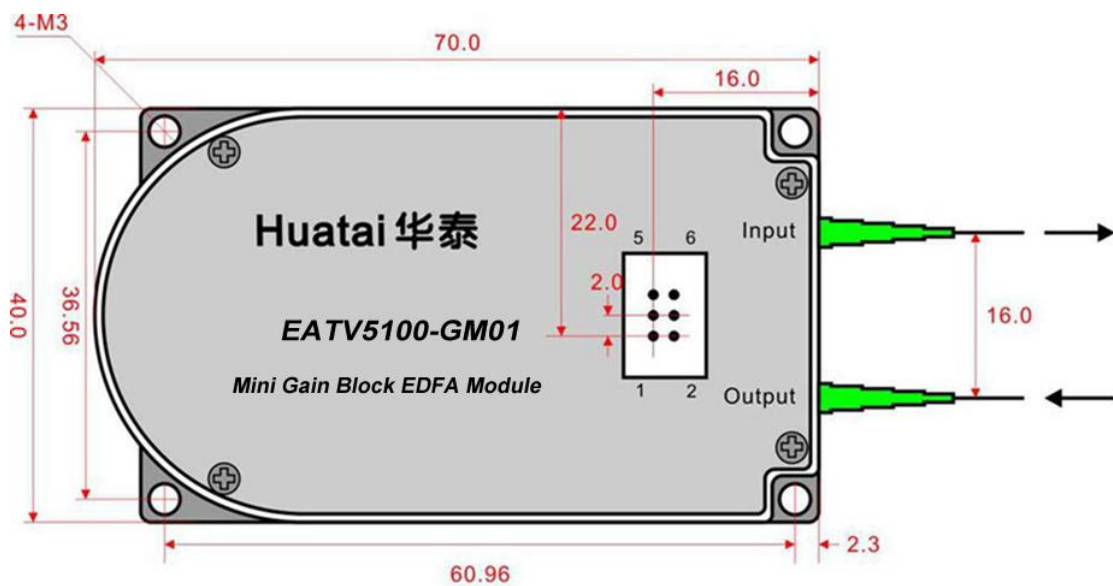
### 4.1 6-pin functional diagram



### 4.2 12-pin functional diagram



## 5.0 Dimensions



Unit:mm



## 6.0 Technique index

### 6.1 Optical characteristics

Performance		Min.	Typ.	Max.	supplement
Optical feature	Operating wavelength range	(nm)	1528		1564
	Typical applications	(nm)	1540		1564
	Input optical power (pin)	(dBm)	-20		+3
	Total output power @ Pin=0dBm	(dBm)	8		19
	Noise figure	(dB)		4.5	5.0
	Polarization dependent loss (PDL)	(dB)			0.3
	Polarization dependent gain (PDG)	(dB)			0.5
	Polarization mode dispersion (PMD)	(ps)			0.5
	Pump power leakage	(dB)			-30
	Output & input isolation	(dB)	30		
	Return loss	(dB)	40		
	Fiber type		SMF-28, 900μm loose tube		
	Connector type		SC, FC, LC, MU, E2000		
	Connector polish		UPC, APC		
General feature	Operating temp.	(°C)	0		65
	Storage temp.	(°C)	-40		+85
	Relative humidity	(%)	+5		+85
	Power consumption, Un-cooled pump	(W)			1.5
	Dimensions	(mm)	40×70×12		

Note: The range of optical input power can be specified.

## 6.2 Electrical specifications

Performance		Min.	Typ.	Max.
Pump laser threshold current	(mA)	-	50	70
Pump laser operating case temp.	(°C)		50	70
Pump laser operating current (BOL)	(mA)	-	-	600
Pump laser operating voltage	(V)	-	1.75	2.2*
Output monitor PD responsivity (70°C)	( $\mu$ A/mW)	0.3	1.1	15
Output monitor PD reverse voltage	(V)	-	5	20
Output monitor PD forward current	(mA)	-	-	10
Dark current (-5V, 25°C)	(nA)	-	-	5

\* 70°C, 18dBm output.

## 7.0 Gain block pin assignment

### 7.1 6-pin gain block pin assignment

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

Pump laser diode anode shares the same pin with pump laser PD cathode.

### 7.2 12-pin gain block pin assignment

Pin	Definition	Pin	Definition
1	Ground, Optical power monitor photodiode	7	Pump laser backface monitor cathode (-)
2	Input monitor photodiode cathode (-)	8	Pump laser back face monitor anode (+)
3	Input monitor photodiode anode (+)	9	No connector or thermistor
4	Output monitor photodiode cathode (-)	10	Pump laser diode anode (+)
5	Output monitor photodiode anode (+)	11	Pump laser diode case
6	No connector or thermistor	12	Pump laser diode cathode (-)

## 8.0 PRODUCT SERIES

Model	Output power (dBm) (Pin=0dBm)	Input power monitor	Output power monitor	Number of Pin
EATV5108-GM01-P06	≥08	NC	With	6
EATV5110-GM01-P06	≥10	NC	With	6
EATV5112-GM01-P06	≥12	NC	With	6
EATV5113-GM01-P06	≥13	NC	With	6
EATV5114-GM01-P06	≥14	NC	With	6
EATV5115-GM01-P06	≥15	NC	With	6
EATV5116-GM01-P06	≥16	NC	With	6
EATV5117-GM01-P06	≥17	NC	With	6
EATV5118-GM01-P06	≥18	NC	With	6
EATV5119-GM01-P06	≥19	NC	With	6

Note: Optional P12, with input power monitor

## 9.0 ORDER INFORMATION

EATV 5 1 □□ - GM 01 - P06 - 0 1 / □□ - □□

Product series	Optical bandwidth		Product Type		Output power		Module Type		Exterior		Number of Pin		Input tap ratio		Output tap ratio		Connector		Fiber length	
CATV EDFA Module	5	1540~1563nm CATV	1	BA	08	08dBm	GM	Gain block module	01	40×70×12	P06	6-Pin	0	None	1	1%	LA	LC/APC	05	0.5m
					10	10dBm			02	70×90×12									P12	12-Pin
					12	12dBm	FM	Full function module	05	125×150×22	SA	SC/APC	10	1.0m						
					13	13dBm			SP	SC/UPC										
					14	14dBm			FA	FC/APC										
					15	15dBm			FP	FC/UPC										
					16	16dBm														
					17	17dBm														
					18	18dBm														
					19	19dBm														