

EATV5100-GM02 Series
MSA Compact (70×90×12mm)
CATV EDFA Module (Gain Block)
Technical Specification

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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-GM02 is a gain module, using $70 \times 90 \times 12$ mm compact package, with single channel and narrow bandwidth standard version. A standard 20-pin electric connector provides simple electrical connection. The module adopts a high performance cooled pump laser, the output optical power up to 23dBm.

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.

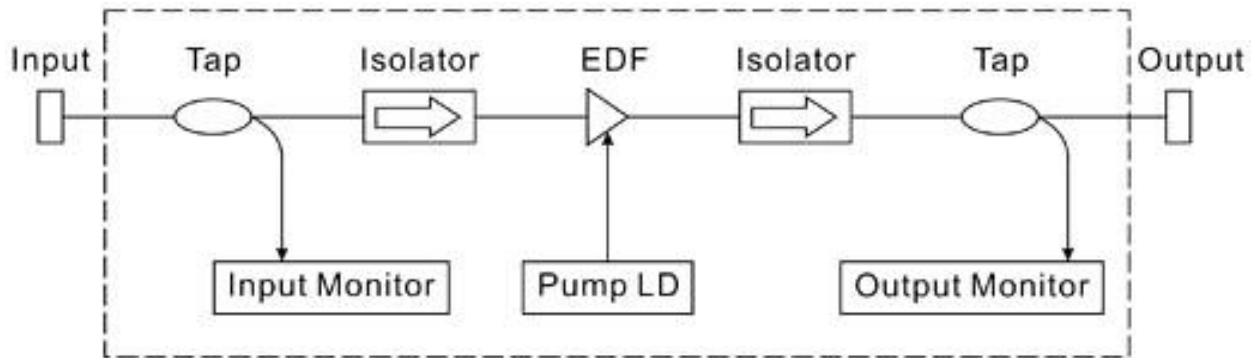
2.0 Product feature

- High performance gain module
- MSA Compact Form Factor (70×90×12mm)
- The output optical power up to 23dBm
- Excellent optical performance
- Low noise figure, suitable for all kinds of CATV application
- Low consumption
- Wide range of working temperature
- Excellent cost performance

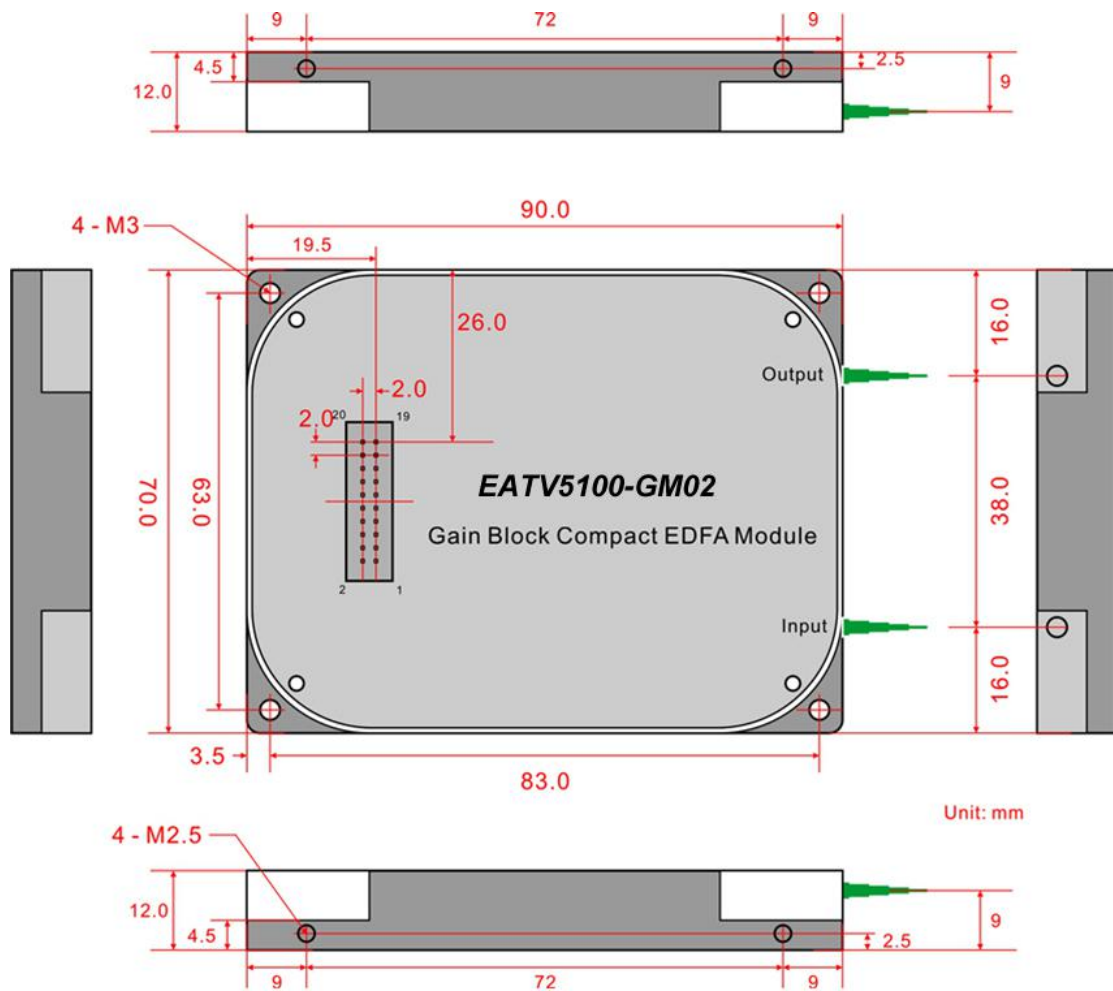
3.0 MAIN APPLICATION

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

4.0 Functional diagram



5.0 Dimensions



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 power (pin)	(dBm)	-10		+10	
	Output power	(dBm)	+13		+23	Pin=0dBm
	Noise figure	(dB)		4.5	5.0	Pin= -6dBm
	Polarization dependent loss (PDL)	(dB)			0.3	
	Polarization dependent gain (PDG)	(dB)			0.3	
	Polarization mode dispersion (PMD)	(ps)			0.3	
	Pump power leakage	(dB)			-30	
	Output & input isolation	(dB)	30			
	Return loss	(dB)	40			
	Fiber type		SMF-28, 900 μ m loose tube			
	Connector type		SC, FC, LC, MU, E2000			
	Connector polish		UPC, APC			
General feature	Operating temp.	($^{\circ}$ C)	0		65	
	Storage temp.	($^{\circ}$ C)	-40		+85	
	Relative humidity	(%)	+5		+85	
	Power consumption, Un-cooled pump	(W)			1.5	
	Dimensions	(mm)	70 \times 90 \times 12			

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

6.2 INPUT AND OUTPUT MONITOR PD SPECIFICATIONS

Performance		Min.	Typ.	Max.
Input monitor PD responsivity	($\mu\text{A}/\text{mW}$)	30	-	75
Output monitor PD responsivity	($\mu\text{A}/\text{mW}$)	1.0	-	25
Monitor PD reverse voltage	(V)	-	5	20
Monitor PD forward current	(mA)	-	-	10
Dark current (-5v, 25°C)	(nA)	-	-	5

6.3 PUMP LASER SPECIFICATIONS

Performance		Output power of 13 to 17dBm			Output power of 18 to 23dBm		
		Min.	Typ.	Max.	Min.	Typ.	Max.
Pump laser threshold current	(mA)	-	-	50	-	-	50
Pump laser forward current (BOL)	(mA)	-	-	500	-	-	1000
Pump laser forward voltage	(V)	-	1.9	2.5	-	2.2	2.5
Pump laser reverse voltage	(V)	-	-	2.0	-	-	2.0
TEC current (max. $\Delta T=50^\circ\text{C}$)	(A)	-	-	1.5	-	-	1.8
TEC voltage (max. $\Delta T=50^\circ\text{C}$)	(V)	-	-	2.8	-	-	3.3
Thermstor resistance (25°C)	(K Ω)	9.5	10	10.5	9.5	10	10.5

7.0 GAIN BLOCK PIN ASSIGNMENT

Pin	Definition	Pin	Definition
1	Ground, optical power monitor PD	2	Input monitor PD cathode (-)
3	Input monitor PD anode (+)	4	Output monitor PD cathode (-)
5	Output monitor PD anode (+)	6	Thermistor
7	Pump 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.

8.0 PRODUCT SERIES

Model	Output power (dBm) (Pin=0dBm)	Input power range(dBm)	Noise figure(dB) (Pin=0dBm)	Input power monitor	Output power monitor
EATV5113-GM02	≥13	-10~+4	4.5	With	With
EATV5114-GM02	≥14	-10~+4	4.5	With	With
EATV5115-GM02	≥15	-10~+4	4.5	With	With
EATV5116-GM02	≥16	-10~+4	4.5	With	With
EATV5117-GM02	≥17	-10~+4	4.5	With	With
EATV5118-GM02	≥18	-10~+4	4.5	With	With
EATV5119-GM02	≥19	-10~+4	4.7	With	With
EATV5120-GM02	≥20	-10~+4	4.7	With	With
EATV5121-GM02	≥21	-10~+4	5.0	With	With
EATV5122-GM02	≥22	-10~+4	5.0	With	With
EATV5123-GM02	≥23	-10~+4	5.0	With	With

9.0 ORDER INFORMATION

EATV 5 1 □□ - GM 02 - 0 1 / □□ - □□

Product series	Optical bandwidth		Product Type		Output power		Module Type		Exterior		Input tap ratio		Output tap ratio		Connector		Fiber length			
CATV EDFA Module	5	1540~1563nm CATV	1	BA	13	13dBm	GM	Gain block module	01	40×70×12	0	None	1	1%	LA	LC/APC	05	0.5m		
					14	14dBm			02	70×90×12					5	5%	LP	LC/UPC	08	0.8m
					15	15dBm			FM	Full function module					05	125×150×22	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														