

# MSA Compact Low Cost Pre-Amplifier EDFA (Gain Block)



## Optical Characteristics

Parameter	Unit	Condition	Specification		
			Min.	Typ.	Max.
Operating Wavelength Range	nm		1528	-	1562
Input Optical Power (pin)	dBm		- 30	-	- 10
Signal Gain	dB	P <sub>in</sub> = -30dBm, λ= 1562nm	20	-	-
			25	-	-
Noise Figure	dB	P <sub>in</sub> = -30dBm, P <sub>out</sub> = -5dBm	-	-	5.5
		P <sub>in</sub> = -20dBm, P <sub>out</sub> = -5dBm	-	-	6.0
		P <sub>in</sub> = -10dBm, P <sub>out</sub> = -5dBm	-	-	7.5
Polarization Dependent Gain	dB		-	-	0.5
Polarization Mode Dispersion	ps		-	-	0.5
Return Loss	dB	Pump LD off	35	-	-
Operating Temperature	°C		- 5	-	70
Fiber Type	-	SMF-28, 900μm loose tube			
Dimensions	mm	70 x 90 x 12			

Unless otherwise noted, specifications listed in this section are guaranteed under single channel operation over operating wavelength range and operating case temperature range and without connectors.

## Input and Output Monitor PD Specifications

Parameters	Unit	Min.	Typ.	Max.
Input Monitor PD Responsivity	μA / mW	30	-	75
Output Monitor PD Responsivity	μA / mW	4	-	25
Monitor PD Reverse Voltage	V	-	5	20
Monitor PD Forward Current	mA	-	-	10
Dark Current (5V, 25°C)	nA	-	-	1

## Uncooled Pump Laser Specifications

Parameters	Unit	Min.	Typ.	Max.
Pump Laser Threshold Current	mA	-	-	60
Pump Laser Forward Current (BOL)	mA	-	240	370
Pump Laser Forward Voltage	V	-	1.55	2.0
Pump Laser Reverse Voltage	V	-	-	2.0

## TEC Cooled Pump Laser Specifications

Parameters	Unit	Min.	Typ.	Max.
Pump Laser Threshold Current	mA	-	-	50
Pump Laser Forward Current (BOL)	mA	-	-	250
Pump Laser Forward Voltage	V	-	-	2.5
Pump Laser Reverse Voltage	V	-	-	2.0
TEC Current (max. ΔT= 50°C)	A	-	1.1	1.3
TEC Voltage (max. ΔT= 50°C)	V	-	2.4	2.9
Thermistor Resistance (25°C)	kΩ	9.5	10	10.5

## Features/Benefits

- Package size (70 x 90 x 12mm)
- Input monitor/isolator
- Output monitor/isolator
- User-friendly 20-pin interface
- 980 nm pump laser
- Low power consumption
- Low cost

## Applications

- Single-channel or narrow-band amplification
- Metropolitan and access networks
- Amplet for long haul networks
- Optical cross-connect
- Switch matrix
- Optical add/drop module
- Signal loss compensation in optical modules
- Digital CATV

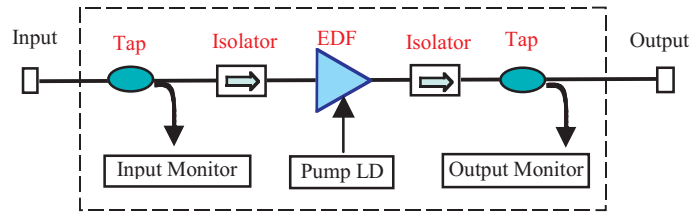
## Gain Block Pin Assignment

Pin	Function	Pin	Function
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(+), (NC for uncooled)	12	TEC anode(+),(NC for uncooled)
13	TEC anode(+), (NC for uncooled)	14	TEC cathode(-), (NC for uncooled)
15	TEC cathode(-), (NC for uncooled)	16	TEC cathode(-), (NC for uncooled)
17	Ground, pump laser diode	18	Thermistor
19	Pump laser diode cathode(-)	20	Pump laser diode cathode (-)

Note1: Electrical connection is made via a male 20 PIN connector (2 rows of 10, pin pitch 2.0mm, 0.5x0.5mm), Samtec TMMH-110-01-G-DV-EC or equivalent.

Note2: The gain block case is isolated with the pump laser diode case.

## Functional Diagram

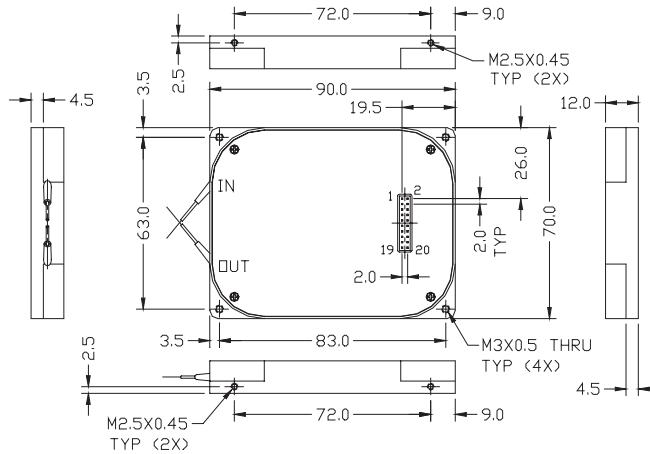


## Safety Information

### ESD Protection

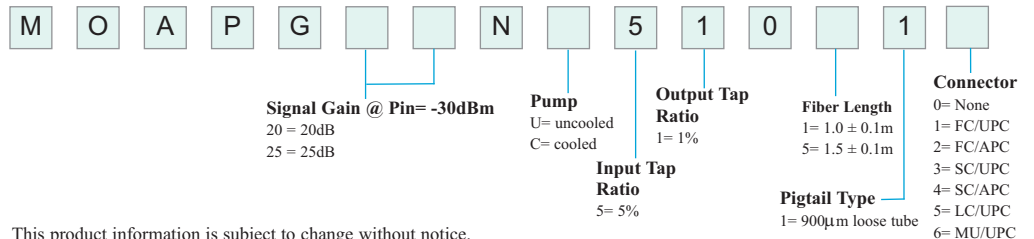
The laser diodes and photodiodes in the module can be easily destroyed by electrostatic discharge. Use wrist straps, grounded work surfaces, and anti-static techniques when operating this module. When not in use, the module shall be kept in a static-free environment.

## Dimensions



Unit: mm

## Ordering Information



This product information is subject to change without notice.