

Applications

- High Performance Supertrunking Links
- High Power Distribution Networks
- Redundant Ring Architectures
- FTTx Networks

Features

- Full Function EDFA gain block (preamp)
- Low Noise Figure (Typ ≤ 5.0 dB)
- Total Input Power Range: -30 dBm to -15 dBm +13 dBm Saturated Output Power
- Standard RS-232 Communication
- Key Lock Switch
- Low Electrical Power Consumption
- Output Isolation ≥ 40 dB
- Polarization Dependent Gain ≤ 0.1 dB
- Polarization Mode Dispersion ≤ 0.5 ps

MAFA 2000 Series Erbium Doped Fiber Micro PreAmplifier

EMCORE’s MAFA 2100 PA Series Erbium Doped Fiber Preamplifier is an ideal building block for OEM system integrators. The family of MAFA 2100 PA series preamps is designed to meet the most demanding noise performance requirements of any fiber links applications, and performs all the functions required of an optical preamplifier for system integration. MAFA 2100 PA series provide optical isolation on the output of the gain block for stable, low noise operation. The output optical signal power levels are detected for monitoring and control. The MAFA 2100 PA series also provides monitors and associated alarms for all vital characteristics.

Optical/Electrical Characteristics¹

Property	Unit	Limit	Model	Comments
2114 – PA				
Operating Input Power	Pin (dBm)	Max	-15	-
Operating Input Power	Pin (dBm)	Min	-30	-
Saturated Output Power	Po(dBm)	Min	13	-
Operating Wavelength Range	Nm	Min/Max	1530 – 1562	Nominal
Noise Figure	NF (dB)	Typ/Max	5/5.5	(note 2)
Power Consumption	Psys (W)	Max	8	+85°C Case
Output RIN	RINout	Max	-170 dB/Hz	Input RIN < -175 dB/Hz

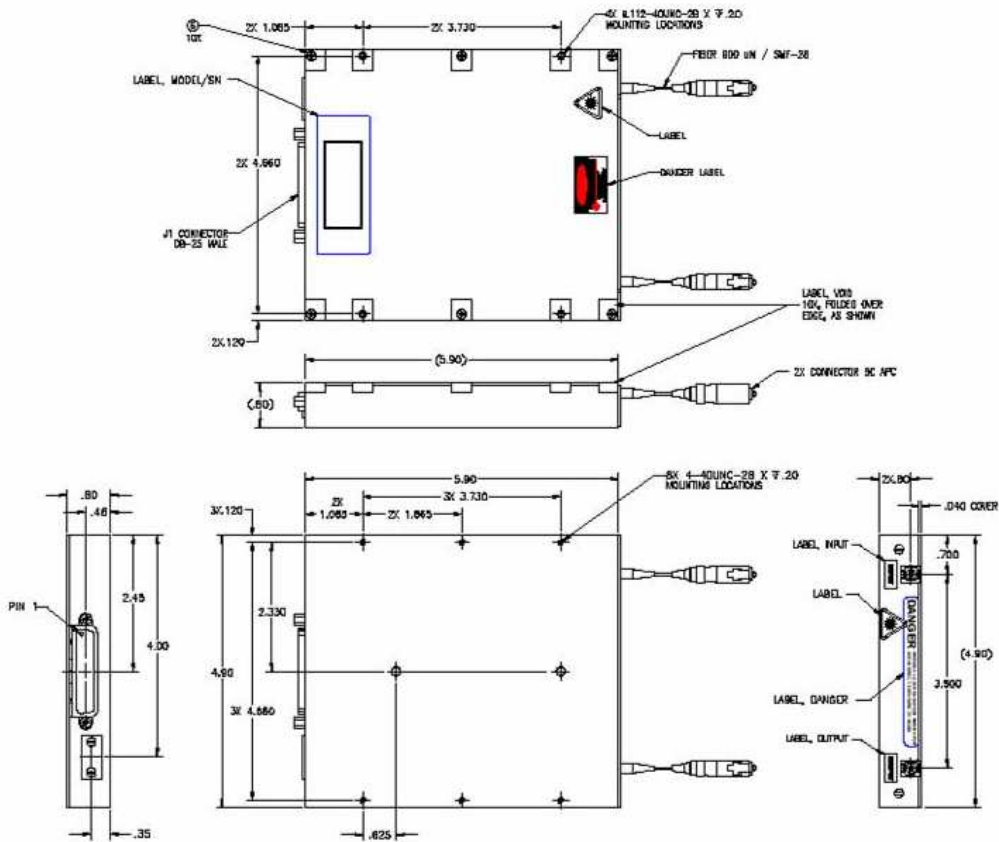
Notes:

1. Unless stated otherwise all specifications apply over the full temperature range and humidity
2. Measured @ 1550 nm, Pin -25 dBm and @ 25°C

General and Mechanical Specifications

Property	Requirement	Comments
Operating Wavelength	1530 nm ~ 1562 nm	Standard
Operating Case Temperature	-40°C to 85°C	Standard
Storage Temperature	-40°C to 85°C	Standard
Operating Humidity	20% to 85%	Non-condensing
Voltage Supply Range	+4.5V to +5.5VDC	Standard
Optical Connectors	SC/APC; SC/UPC; FC/APC; FC/UPC; E2000/APC	User Specified
Dimensions (in)	4.9"W x 5.9"D x 0.8"H	MAFA 2014 -PA

Outline Drawing



Electrical Connector Pinout

PIN #	Designation	PIN #	Designation
1	DC Power Input (+5V)	16	Reserved
2	GND	17	Reserved
3	Reserved	18	RS-232 Rx*
4	Reserved	19	Reserved
5	KEY-SWITCH	20	Reserved
6	RS-232Tx	21	Reserved
7	Reserved	22	Reserved
8	Reserved	23	Reserved B
9	Reserved	24	N/A
10	Reserved	25	Reserved
11	Reserved		
12	Reserved		
13	Reserved		
14	DC Power Input (+5V)		
15	GND		

Compliance and Reliability Information

FCC: Subpart B. Part 15 class “A”: Unintentional Radiators

EN 61000-4-3: Electromagnetic Compatibility (EMC) Part 4: Testing and Measurement Techniques – Section 3: Radiated Immunity (1996)

EN 55013: Sound and Television Broadcast receivers and associated equipment – Radio disturbance characteristics- limits and methods of measurements – Electric Field Radiation Emissions (2001)

Fit Rate: 60% level of confidence 670 @ 25°C

Fit Rate: 60% of level of confidence 962 @ 40°C

Ordering Information

MAFA2014 - - PA

Connector Option
SC - SC/APC
FC - FC/APC
EC – E2000/APC
TC – SC/UPC
GC – FC/UPC