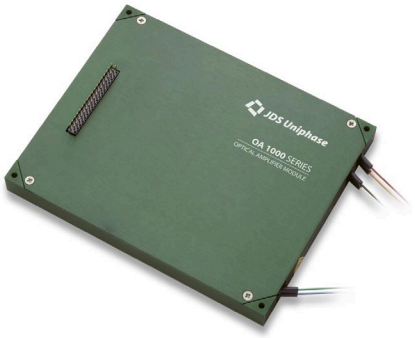
JDS Uniphase

Product Bulletin



Compact, Two-Stage Amplifier with Mid-Stage Access

OA 1000 Amplifier Series

The OA 1000 Amplifier Series provides the highly desired features and functionality of custom-designed EDFAs in a compact and economical package. It has been designed to address the new, higher capacity (higher channel count or 40 Gb/s) long haul system designs as well as the low cost metro add/drop amplification requirements.

The JDS Uniphase OA 1000 amplifier features a 25 dB gain and a saturated output power of 18 dBm. The module, which contains an erbium-doped fiber coil heater, also provides mid-stage access and 0.75 dB gain flatness.

The flexible OA 1000 platform supports these variations: output power and gain ranges; mid-stage loss; monitor ports; gain flattening filters; and erbium doped fiber coil heater. It uses the variations to modify optical functionality to within specifications, creating a cost effective solution per system requirements.

JDS Uniphase has extensive experience with the development of fully functioning EDFAs, and can design standard, high-performance optical amplifier products that meet your time-to-market requirements.

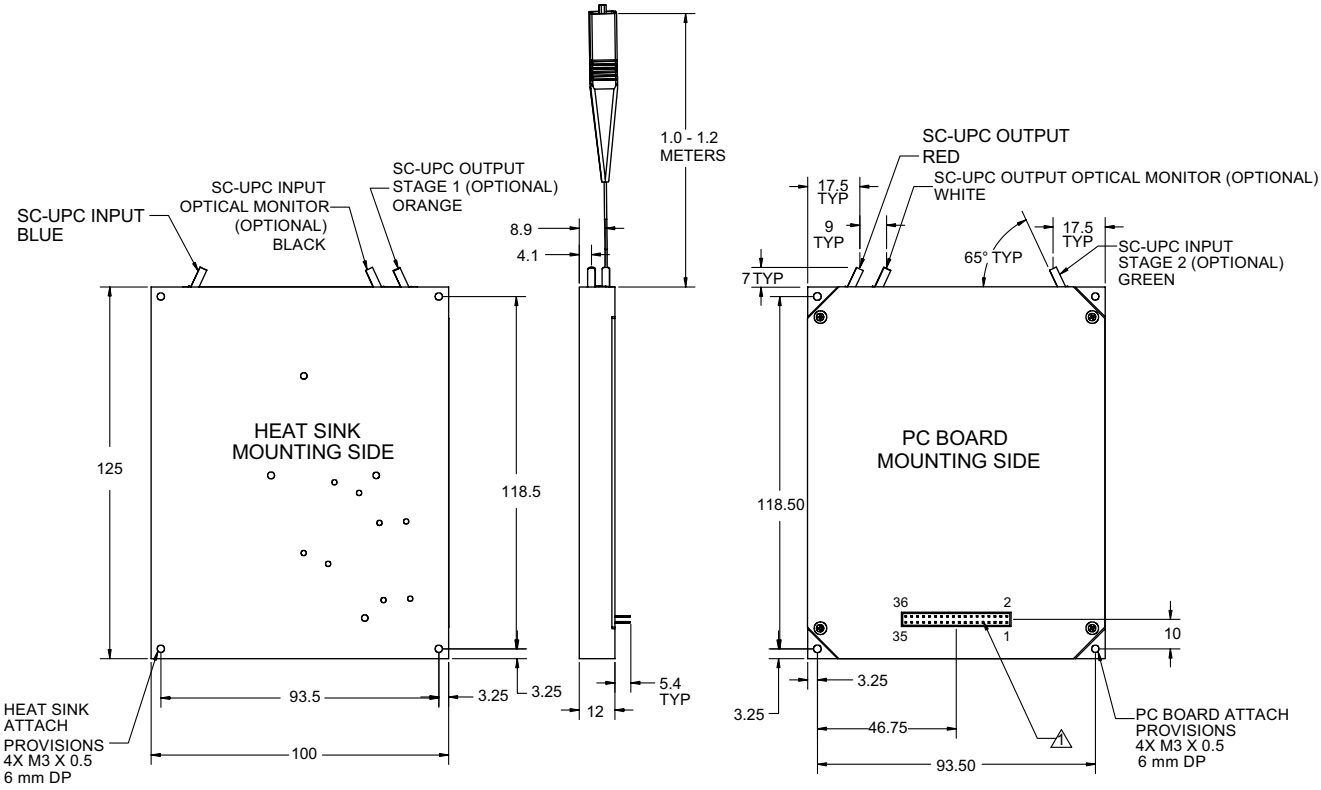
Key Features

- Saturated output power up to 21 dBm
- Mid-stage access
- Cost-effective gain flatness of ±0.75 dB
- Compact size with the option of integrated PIN receiver/erbium doped fiber amplifier (EDFA)
- Wide dynamic range

Applications

- Long haul and metro networks
- Tunable laser booster
- Full C-band amplification
- Power equalization and flexible pre-emphasis
- Overcoming channel add/drop losses
- Overcoming dispersion compensating filter and variable optical attenuator (VOA) losses

OA 1000 Series Amplifier Detail (Specifications in mm unless otherwise noted.)



⚠1 OTHER CONNECTOR OPTIONS AVAILABLE
CENTERED AS SHOWN

Electrical Pin Identification

Pin	Function	Pin	Function
1	Heater +	19	TEC B +
2	Heater +	20	TEC B +
3	MPD 3 -	21	TEC A -
4	MPD 3 +	22	TEC A -
5	MPD 2 -	23	NC
6	MPD 2 +	24	GND
7	MPD 1 -	25	LD A +
8	MPD 1 +	26	LD A -
9	TEC B -	27	Thermistor A
10	TEC B -	28	MON A +
11	NC	29	Thermistor A
12	GND	30	MON A -
13	LD B +	31	TEC A +
14	LD B -	32	TEC A +
15	Thermistor B	33	Thermistor
16	MON B +	34	Thermistor
17	Thermistor B	35	Heater -
18	MON B -	36	Heater -

Specifications

Parameter		Specification
Optical		
Operating wavelength range		1530 to 1562 nm
Output power range (P_{sat})[1]	Maximum	18 dBm
Gain[1, 2]	Maximum	25 dB
Gain flatness[1]	Maximum	±0.75 dB
Midstage loss (optional)[1]	Maximum	6 dB
Noise figure (P_{in} =-10 dBm)	Maximum	6.0 dB
Polarization dependent loss	Maximum	0.3 dB
Polarization mode dispersion	Maximum	0.5 ps
Return loss	Minimum	30 dB
Input tap photodiode responsivity to input power	Minimum	15 µA/mW
(line amp condition)	Maximum	45 µA/mW
Output tap photodiode responsivity to output power	Minimum	15 µA/mW
(line amp condition)	Maximum	45 µA/mW
Electrical		
Pinout		Direct
Pump current/pump, EOL	Maximum	600 mA
Forward pump voltage	Typical	2.0 V
	Maximum	2.5 V
Pump threshold current	Maximum	25 mA
TEC voltage	Maximum	3.0 V
TEC current	Maximum	1.5 A
Thermistor resistance, at 25 °C	Typical	10.0 kΩ
	Minimum	9.5 kΩ
	Maximum	10.5 kΩ
Power dissipation	Maximum	10 W
Environmental		
Operating temperature (case)		0 to 70 °C
Storage temperature (case)		-40 to 75 °C
Mechanical		
Fiber		SMF-28
Length		1.0 to 1.2 m
Package dimensions (L x W x H)		125 x 100 x 12 mm

1. The OA flexible platform supports other parameter variations.
2. The maximum gain values do not include any mid-stage loss.

Ordering Information

For more information on this or other products and their availability, please contact your local JDS Uniphase account manager or JDS Uniphase directly at 800-871-8537 in North America and 1-800-8735-5378 worldwide or via e-mail at jdsu.sales@jdsu.com.

Sample: OAA-18F1001CA

OAA- 1 8 F 10 C

Code	Psat[1]
18	18 dBm

Code	Gain Flatness[2]
F	Flattened (with GFF)

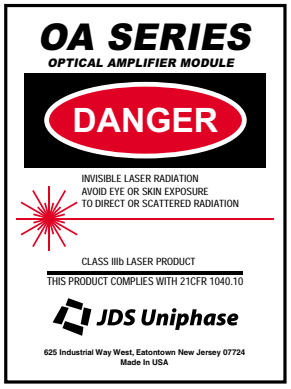
Code	Mid-Stage Access[3] and Optical Port
00	With mid-stage access, no optical port
01	With mid-stage access, 1 optical port
02	With mid-stage access, 2 optical ports
03	With mid-stage access, 3 optical ports

Code	Connector Type[4]
3	FC/APC
5	SC/APC
9	FC/UPC
A	SC/UPC (default)
C	MU
E	E2000

1. Other powers available upon request.
2. Non-gain flattened version available upon request.
3. Version without mid-stage access available upon request.
4. More connector options are available upon request.

User Safety

The invisible laser light emitted from this module is harmful to the human eye. Wear proper laser safety eyewear during operation.



ESD Protection

The laser diodes and photodiodes contained in this module are very reliable under normal operating conditions. However, they can be easily destroyed by inadvertent electrical or static discharges (ESD). Take extreme precaution to prevent ESD. Use wrist straps, grounded work surfaces, and anti-static techniques when operating this module. When not in use, the fiber amplifier must be kept in a static-free environment with the shorting foam covering the connector.

SMF-28 is a registered trademark of Corning Incorporated.

JDS Uniphase

North America toll-free: 800-871-8537
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www.jdsu.com

10135546 Rev. 001 01/02