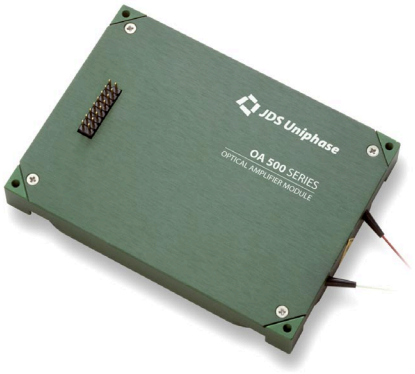
JDS Uniphase

*Product Bulletin*




# Compact, Low Cost, Single-Channel or Narrow Band Amplifiers

## OA 500 Amplifier Series

The JDS Uniphase OA 500 Amplifier Series provides C-band optical amplification in an economical and compact package. It is designed for use in dense wavelength division multiplexing (DWDM) telecommunication systems, at points where the signal is not multiplexed. It can also be used in edge or access networks, where gain flattening is not required.

Fully qualified JDS Uniphase grating-stabilized 980 nm pump lasers provide the stability of operation and reliability required by today's highest speed DWDM systems. The OA 500 Amplifier Series is available with both cooled and uncooled pump options.

The OA 500 can provide up to 24 dB small signal gain and up to 15 dBm saturated output power, with a noise figure of less than 6 dB across the entire C band. It performs as a preamplifier, a line amplifier, and a booster amplifier.

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

- Compact size
- Small signal gain, ~24 dB
- Saturated output power, ~15 dBm
- Wide dynamic range
- Uncooled pump option with low power consumption (<1 W)

### Applications

- Single-channel and narrow band amplification
- Tunable laser sources
- Power equalization and flexible pre-emphasis
- Switching and signal grooming loss compensation

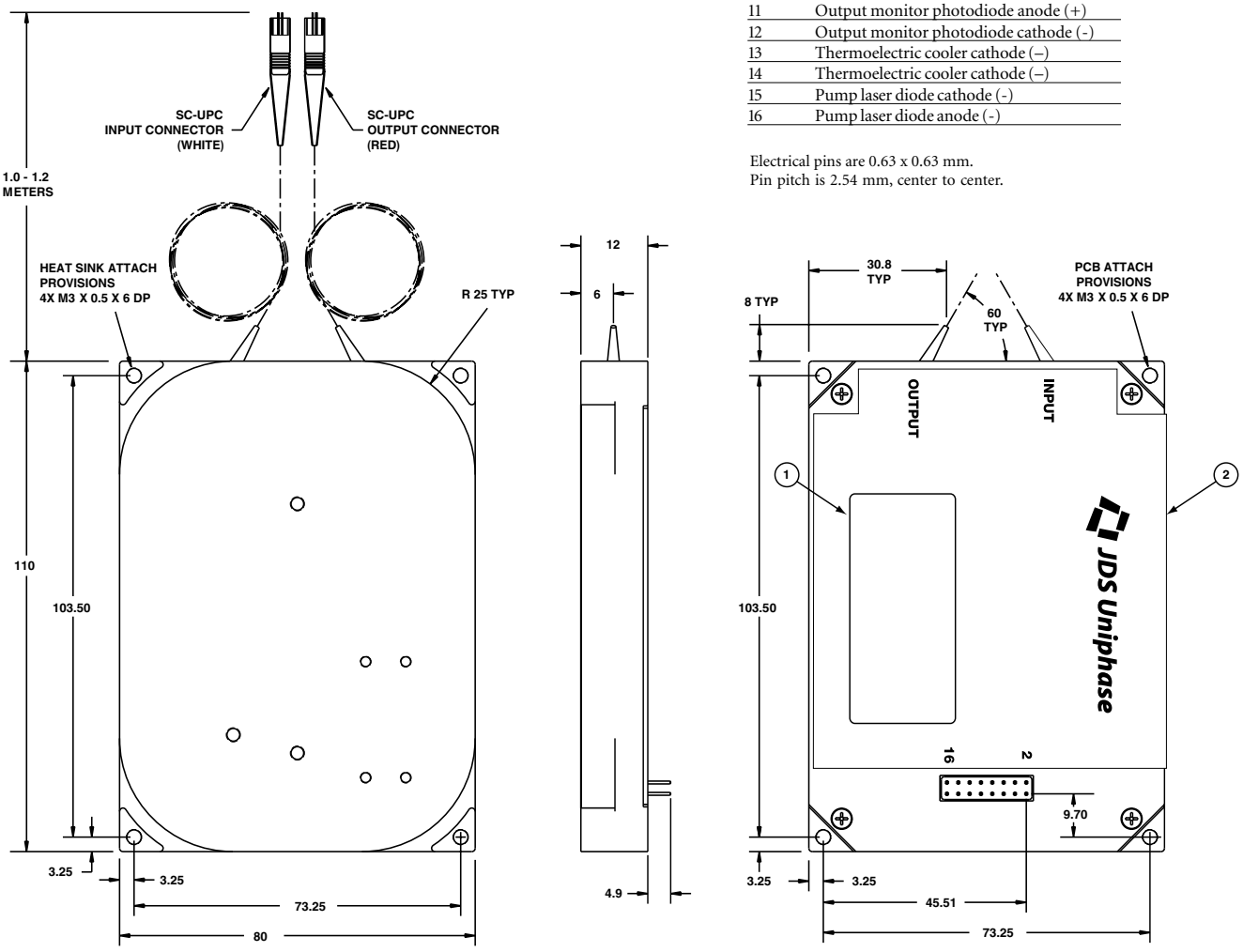
## OA 500 Dimensions Diagram (Specifications in mm unless otherwise noted.)

Standard Tolerances
mm: x.x = ±0.5
x.xx = ±0.25

### Pin Out

| Pin | Description |
|---|---|
| 1 | Input monitor photodiode cathode (-) |
| 2 | Input monitor photodiode anode (+) |
| 3 | Thermoelectric cooler anode (+) |
| 4 | Thermoelectric cooler anode (+) |
| 5 | Thermistor |
| 6 | Thermistor |
| 7 | Ground |
| 8 | Pump laser diode back facet monitor (+) |
| 9 | No connection |
| 10 | Pump laser diode back facet monitor (–) |
| 11 | Output monitor photodiode anode (+) |
| 12 | Output monitor photodiode cathode (-) |
| 13 | Thermoelectric cooler cathode (–) |
| 14 | Thermoelectric cooler cathode (–) |
| 15 | Pump laser diode cathode (-) |
| 16 | Pump laser diode anode (-) |

Electrical pins are 0.63 x 0.63 mm.
Pin pitch is 2.54 mm, center to center.




HEAT SINK SIDE

PC BOARD SIDE

## Specifications

| Parameter | | OAA-15U | OAU-15U |
|---|---|---|---|
| **Optical** | | | |
| Operating wavelength range | | 1529 to 1562 nm | |
| Gain ($P_{in}$ -30 dBm; pre amp) | Minimum | 24 dB | |
| Gain ($P_{in}$ -6 dBm; line amp)[1] | Minimum | 19 dB | |
| Gain ($P_{in}$ 0 dBm; power amp) | Minimum | 15 dB | |
| Noise figure (line amp condition) | Maximum | 6.0 dB | |
| Polarization dependent loss | Maximum | 0.3 dB | |
| Polarization mode dispersion | Maximum | 0.5 ps | |
| Return loss | Minimum | 30 dB | |
| Input/output tap responsivity | Minimum | 5 µA/mW | |
| (line amp condition) | Maximum | 35 µA/mW | |
| **Electrical** | | | |
| Pinout | | Direct | |
| Pump current, EOL | Maximum | 300 mA | 420 mA |
| Forward pump voltage | Maximum | 2.5 V | |
| Pump threshold current | Maximum | 25 mA | 40 mA |
| Power consumption, EOL | Maximum | 4.5 W | 1.0 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) | | 110 x 80 x 12 mm | |

1. Contact JDS Uniphase for higher power requirements.

## 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-15U0500CA

**OA□ - 15U0500C□**

| Code | Classification |
|---|---|
| A | Active |
| U | Uncooled |

| Code | Power Out[1] |
|---|---|
| 15 | 15 dBm |

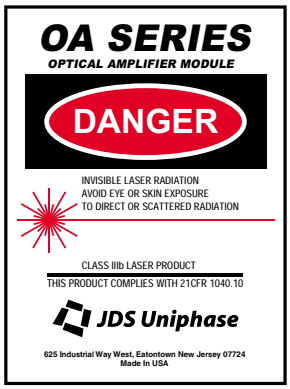
| Code | Band[2] |
|---|---|
| C | C band |

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

1. Higher power available upon request.
2. L band design available upon request.
3. More connector options 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.




JDS Uniphase

North America toll-free: 800-871-8537
Worldwide toll-free: 1-800-8735-5378
www.jdsu.com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