

## 1.4μm FBG LD MODULE

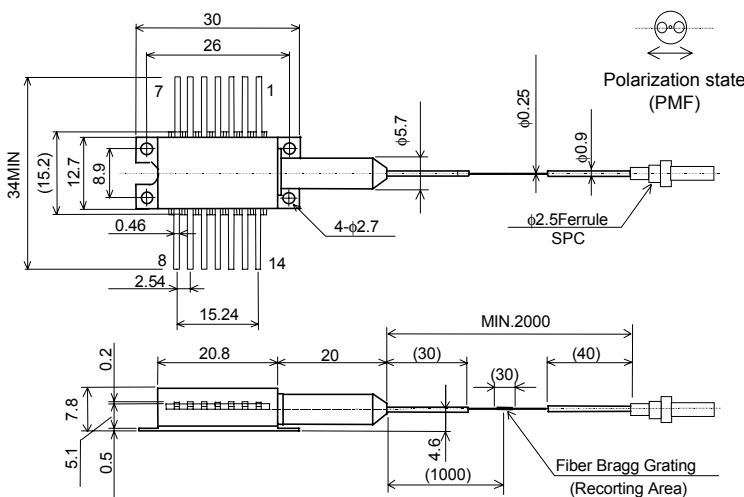
### AF4A2247D xxxF

The AF4A2247D is 1.4μm band high power laser diode modules with fiber bragg grating designed for Raman fiber amplifier and Er doped fiber amplifier. The laser is packaged in a 14-pin butterfly package with monitor photodiode and thermo-electric cooler (TEC).

#### ◆ FEATURES

- Wavelength :  $1420\text{nm} \leq \lambda < 1500\text{nm}$   
AF4A2247D xxxF  
Exp. xxx=755 :  $\lambda=1475.5\text{nm}$   
(0.5nm spacing available)
- High optical output : 250mW ( $I_F \leq 900\text{mA}$ )  
→PMF output (UV coating fiber:  $\phi 0.25\text{mm}$ )
- Internal monitor PD and TEC

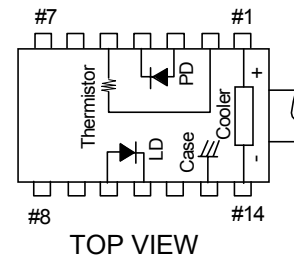
#### ◆ DIMENSIONS



Package outline(Unit:mm) Type:AF4A2247DxxxF

#### ◆ ABSOLUTE MAXIMUM RATINGS ( $T_{LD}=25^{\circ}\text{C}$ )

| Item                       | Symbol    | Rating     | Unit               |
|----------------------------|-----------|------------|--------------------|
| LD Forward Current         | $I_F$     | 1300       | mA                 |
| LD Reverse Voltage         | $V_R$     | 2          | V                  |
| PD Forward Current         | $I_{FD}$  | 10         | mA                 |
| PD Reverse Voltage         | $V_{RD}$  | 10         | V                  |
| Operating Case Temperature | $T_C$     | -20 to +70 | $^{\circ}\text{C}$ |
| Storage Temperature        | $T_{stg}$ | -40 to +85 | $^{\circ}\text{C}$ |
| Cooler Current             | $I_C$     | 3          | A                  |



TOP VIEW

| No. | FUNCTION     | No. | FUNCTION       |
|-----|--------------|-----|----------------|
| 1   | Cooler anode | 8   | NC             |
| 2   | Thermistor   | 9   | NC             |
| 3   | PD anode     | 10  | LD anode       |
| 4   | PD cathode   | 11  | LD cathode     |
| 5   | Thermistor   | 12  | NC             |
| 6   | NC           | 13  | Case           |
| 7   | NC           | 14  | Cooler cathode |

Pin Configuration

#### ◆ OPTICAL AND ELECTRICAL CHARACTERISTICS ( $T_{LD}=25^{\circ}\text{C}$ , $T_C=25^{\circ}\text{C}$ )

| Item                  | Symbol          | Test condition                                         | Min.        | Typ.      | Max.        | Unit          |
|-----------------------|-----------------|--------------------------------------------------------|-------------|-----------|-------------|---------------|
| Forward Voltage       | $V_F$           | $P_F=250\text{mW}$                                     |             | 2.0       | 2.5         | V             |
| Threshold Current     | $I_{th}$        |                                                        |             | 40        | 70          | mA            |
| Forward Current (BOL) | $I_F$           | $P_F=250\text{mW}$                                     |             |           | 900         | mA            |
| Center Wavelength     | $\lambda_C$     | $P_F=250\text{mW}$ , RMS(-20dB)                        | $\lambda-1$ | $\lambda$ | $\lambda+1$ | nm            |
| Spectral Width        | $\Delta\lambda$ | $P_F=250\text{mW}$ , -10dB                             |             |           | 3.5         | nm            |
| Monitor Current       | $I_m$           | $P_F=250\text{mW}$ , $V_{RD}=5\text{V}$                | 100         |           | 2000        | $\mu\text{A}$ |
| PD Dark Current       | $I_d$           | $V_{RD}=5\text{V}$                                     |             |           | 0.1         | $\mu\text{A}$ |
| Tracking Error        | $\Delta P_f$    | $I_m=\text{const}$ , $T_C=-20$ to $70^{\circ}\text{C}$ |             |           | 0.5         | dB            |
| Cooler Voltage        | $V_c$           | $I_F=*EOL$ , $T_C=70^{\circ}\text{C}$                  |             | 3.3       | 4.0         | V             |
| Cooler Current        | $I_c$           | $I_F=*EOL$ , $T_C=70^{\circ}\text{C}$                  |             | 2.0       | 2.2         | A             |
| Thermistor Resistance | $R_{th}$        | $T_{LD}=25^{\circ}\text{C}$ , $B=3900\pm 100\text{K}$  | 9.5         | 10        | 10.5        | k $\Omega$    |

(Note) \*EOL=BOL X 1.2

(Note) Polarization state of LD is aligned parallel to the slow axis.

Fiber option: Single mode fiber (UV coating fiber:  $\phi 0.25\text{mm}$ ) is acceptable by custom order.