

980nm Pump Laser Diode Module



Applications

- Pump Source for Er-Doped Fiber Amplifier
- C- Band EDFA
- Single Channel Amp to DWDM Amp

Product Type : FOL0907 Series

Descriptions

- The FOL0907 series has been designed for use in a wide variety of optical amplifier, such as EDFA used in optical transmission systems, especially in dense wavelength-division-multiplexing (DWDM) systems.
- A strained quantum well laser diode chip is integrated with thermo-electric cooler (TEC), thermistor and PIN photodiode in a hermetically sealed 14 pin butterfly package.
- A lensed-fiber system enables high coupling efficiency and the output power up to 220 mW.
- This laser module complies with telecom requirements described in Telcordia™GR-468 requirement and manufactured in an ISO™9001 certified production line.

Features

- Rated output power up to 220 mW (operating)
- Widely deployed reliable package design with industry compatible 14 pin butterfly footprint
- Internal Thermo-electric cooler (TEC) and Thermistor for stable operation
- Integrated PIN photodiode
- Wavelength stabilization with external FBG
- PMF pigtail is available.
- Epoxy free design inside the module for long term Reliability
- EU RoHS compliant (Exemption 7b applied)

Absolute Maximum Rating

| Parameters | Sym. | Min. | Max. | Unit |
|----------------------------|------|------|------|------|
| Storage Temperature | Tstg | -40 | 85 | °C |
| Operating Case Temperature | Tc | -20 | 75 | °C |
| Fiber Output Power | Pf | - | 500 | mW |
| LD Forward Current | If | - | 700 | mA |
| LD Reverse Voltage | Vr | - | 2 | V |
| PD Forward Current | IfPD | - | 5 | mA |
| PD Reverse Voltage | VrPD | - | 20 | V |
| TEC Current | Ic | -0.6 | 2 | A |
| TEC Voltage | Vc | - | 4.5 | V |

Specifications

(LD Temperature (Ts) = 25°C)

| Parameters | Sym. | Min. | Typ. | Max. | Unit | Conditions | | | | |
|-----------------------------|--------------------------|---------------|-------------|---------------|-------------------------|---|-----|---|---|--------------|
| Output Power | Pf | | | | mW | | | | | |
| FOL0907A10 | | | | | | | 100 | - | - | IfBOL=<250mA |
| FOL0907A11 | | | | | | | 110 | - | - | IfBOL=<260mA |
| FOL0907A12 | | | | | | | 120 | - | - | IfBOL=<280mA |
| FOL0907A13 | | | | | | | 130 | - | - | IfBOL=<300mA |
| FOL0907A14 | | | | | | | 140 | - | - | IfBOL=<320mA |
| FOL0907A15 | | | | | | | 150 | - | - | IfBOL=<350mA |
| FOL0907A16 | | | | | | | 160 | - | - | IfBOL=<370mA |
| FOL0907A17 | | | | | | | 170 | - | - | IfBOL=<390mA |
| FOL0907A18 | | | | | | | 180 | - | - | IfBOL=<410mA |
| FOL0907A19 | | | | | | | 190 | - | - | IfBOL=<430mA |
| FOL0907A20 | | | | | | | 200 | - | - | IfBOL=<450mA |
| FOL0907A21 | | | | | | | 210 | - | - | IfBOL=<470mA |
| FOL0907A22 | 220 | - | - | IfBOL=<500mA | | | | | | |
| Threshold Current | Ith | - | 40 | 50 | mA | CW | | | | |
| Center Wavelength | λ_c | λ_c-1 | λ_c | λ_c+1 | nm | Peak, Rated Power $\lambda_c=974\sim 976\text{nm}$ | | | | |
| Spectral Width | $\Delta\lambda$ | - | - | 2 | nm | FWHM, Rated Power | | | | |
| Wavelength Stability (Temp) | $\Delta\lambda/\Delta T$ | - | 0.01 | 0.02 | nm/°C | T: FBG Temp. | | | | |
| LD Forward Voltage | Vf | - | - | 2.5 | V | Rated Power | | | | |
| LD Forward Current at EOL | IfEOL | - | - | 1.1xIfBOL | mA | End of Life | | | | |
| Kink Free Power | Pkink | 1.1xPf | - | - | mW | - | | | | |
| Optical Power stability | ΔPf | | | 2.5 | % | 20mW~40mW, 60s peak to peak | | | | |
| | | | | 1.0 | | 40mW~Pop, 60s peak to peak | | | | |
| Monitor Responsivity | Im/Pf | 2 | - | 20 | $\mu\text{A}/\text{mW}$ | VrPD=5V, Average 0mW ~ Pf | | | | |
| Monitor Dark Current | Id | - | - | 100 | nA | VrPD=5V | | | | |
| TEC Current | Ic | - | - | 1.4 | A | max. $\Delta T=50^\circ\text{C}$, IfEOL | | | | |
| TEC Voltage | Vc | - | - | 3.2 | V | max. $\Delta T=50^\circ\text{C}$, IfEOL | | | | |
| Thermistor Resistance | Rth | 9.5 | 10 | 10.5 | k Ω | Ts=25°C | | | | |
| Thermistor B Constant | Rth | - | 3900 | - | K | Ts=25°C | | | | |
| Tracking Error | T.E. | -0.5 | - | 0.5 | dB | Tc=-5~75°C Referred to Tc=25°C | | | | |

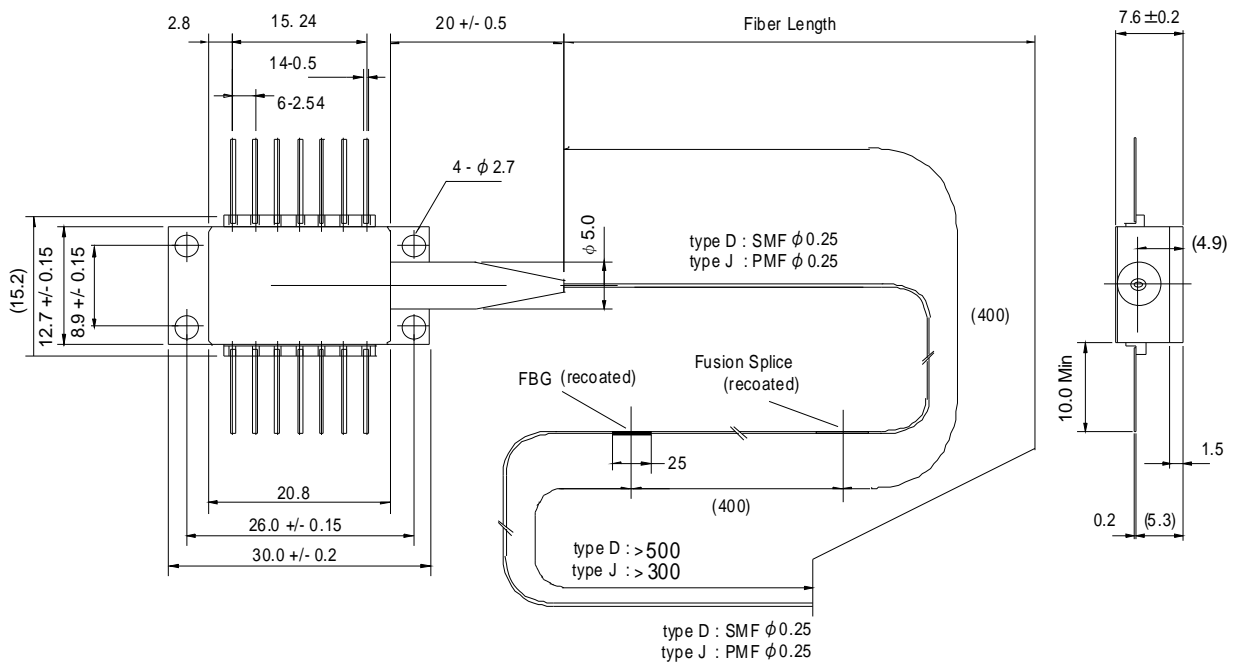
Data Sheet
FOL0907 Series

Mar. 2010

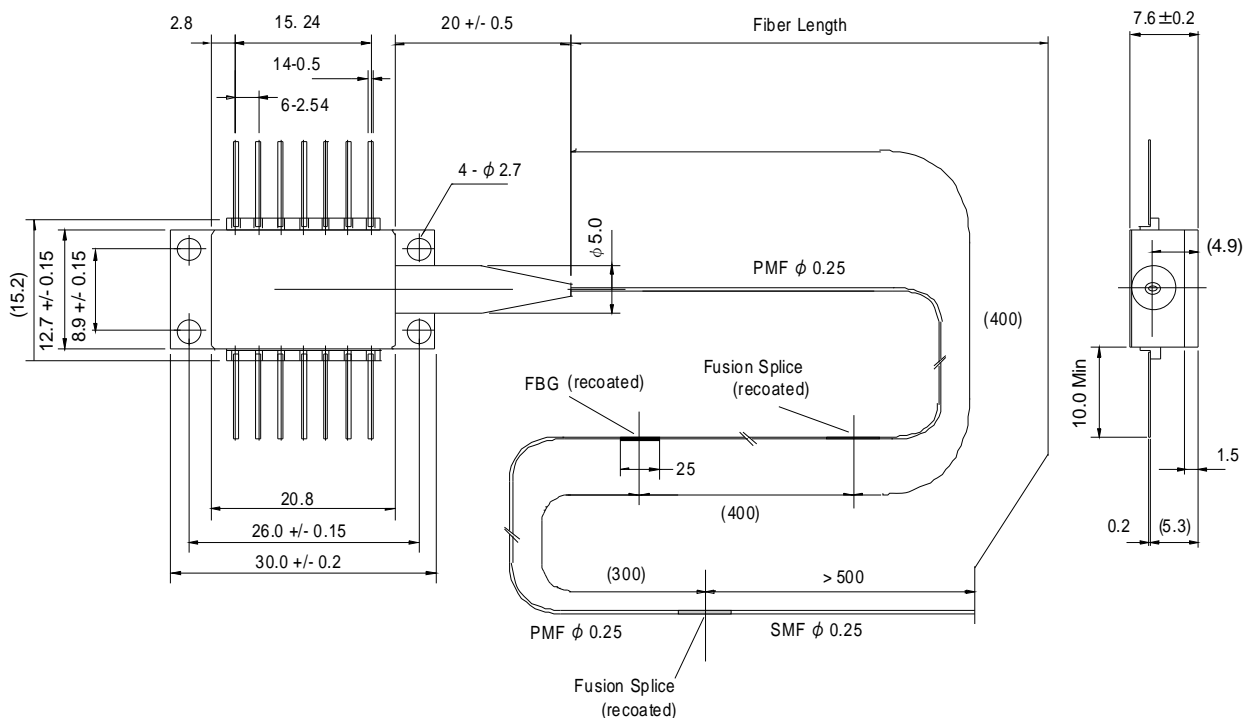


Dimensions

D17 (All SMF) and J17 (All PMF)



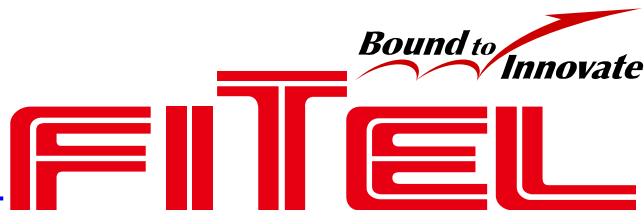
H17(PMF+SMF)



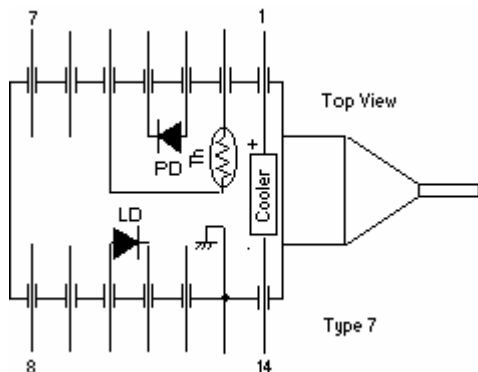
Data Sheet

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Pin Assignment



| Pin# | Function | Pin# | Function |
|------|---------------|------|---------------|
| 1 | Cooler(+) | 8 | No Connection |
| 2 | Thermistor | 9 | No Connection |
| 3 | PD anode(-) | 10 | LD anode(+) |
| 4 | PD cathode(+) | 11 | LD cathode(-) |
| 5 | Thermistor | 12 | No Connection |
| 6 | No Connection | 13 | Case GND |
| 7 | No Connection | 14 | Cooler(-) |

Ordering information

FOL 0 9 0 7 A - 1 7 -

Wavelength ex.976

Output power

ex. 200mW : FOL0907A20

D: SMF pigtail w/FBG (Corning™ HI 1060)

H: PMF pigtail w/FBG + SMF interface (Corning™ HI 1060)

J: PMF pigtail w/FBG

Safety information

This product complies with 21 CFR 1040.10 and 1040.11, Class 3b laser product. Invisible laser radiation is emitted from the end of the fiber or connector. Avoid direct exposure to the beam.

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