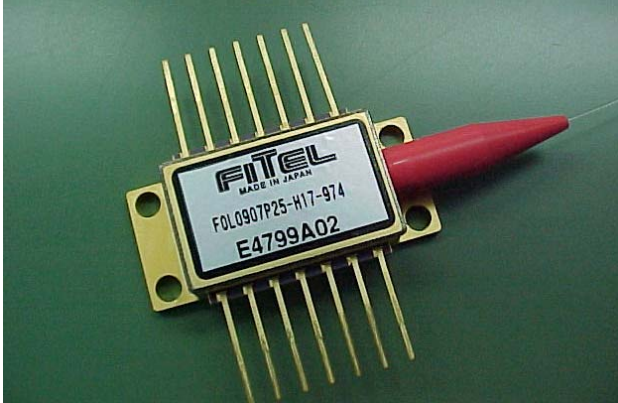


## 980nm Stabilized LDM



### Applications

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

### Description

- The FOL0907A 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<sup>™</sup>GR-468 requirement and manufactured in an ISO<sup>™</sup>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

## Absolute Maximum Ratings

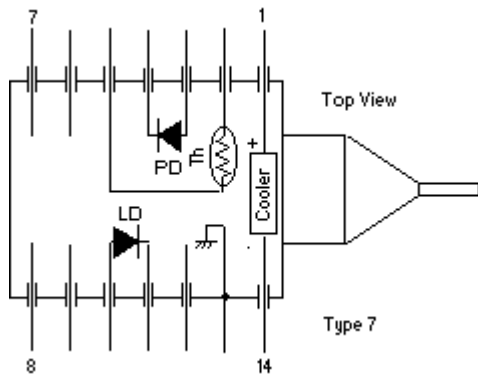
Parameters	Sym.	Min.	Max.	Unit	Parameters	Sym.	Min.	Max.	Unit
Storage Temperature	Tstg	-40	85	°C	PD Forward Current	IfPD	-	5	mA
Operating Case Temperature	Tc	-5	75	°C	PD Reverse Voltage	VrPD	-	20	V
Fiber Output Power	Pf	-	500	mW	TEC Current	Ic	-0.6	2	A
LD Forward Current	If	-	700	mA	TEC Voltage	Vc	-	4.5	V
LD Reverse Voltage	Vr	-	2.5	V					

## Optical and Electrical Specifications (Sensor Temperature (Ts) = 25°C)

Parameters	Sym.	Min.	Typ.	Max.	Unit	Conditions
Output Power						
FOL0907A10	Pf	100	-	-	mW	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	$\lambda_c$	$\lambda_c-1$	$\lambda_c$	$\lambda_c+1$	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	$\Delta Pf$	-	-	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 $\Omega$	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

# Dimensions & Pin Assignment

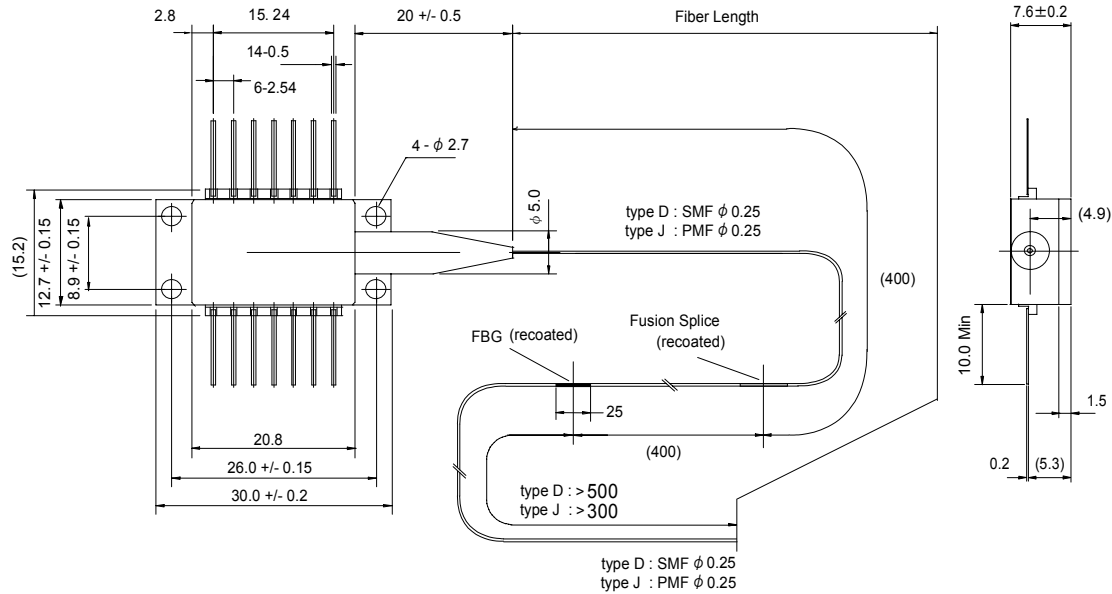
## Pin Assignment



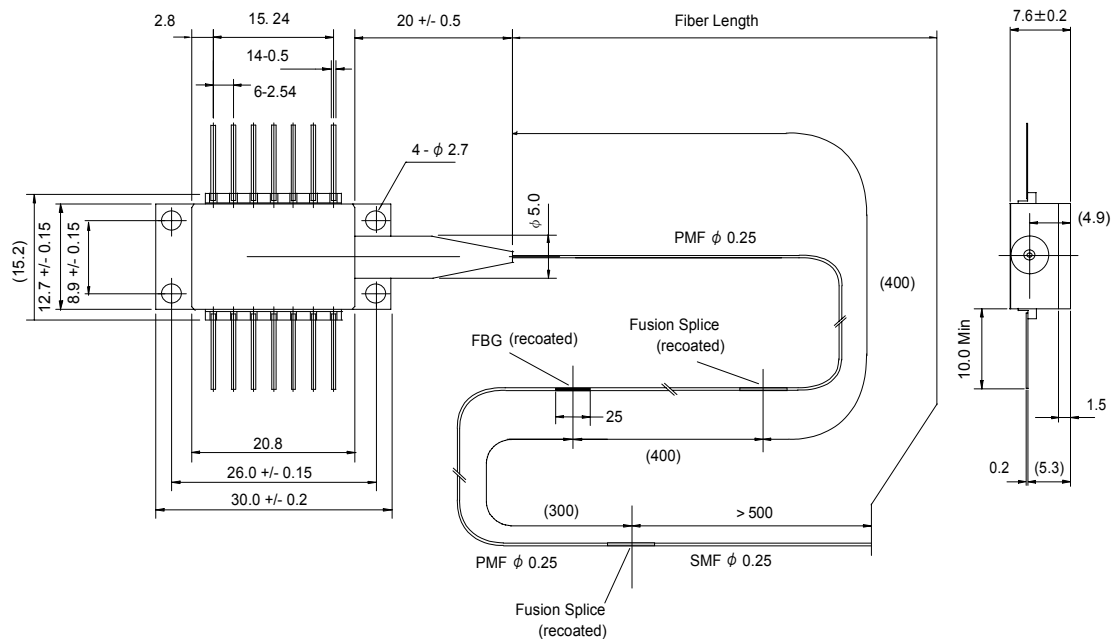
Pin#	Function	Pin#	Function
1	Cooler(+)	8	No Connection
2	Thermistor	9	No Connection
3	PD anode(-)	10	LD anode(+)
4	PD cathode(+)	11	LD cathode(-)
5	Thermistor	12	No Connection
6	No Connection	13	Case GND
7	No Connection	14	Cooler(-)

## Dimensions

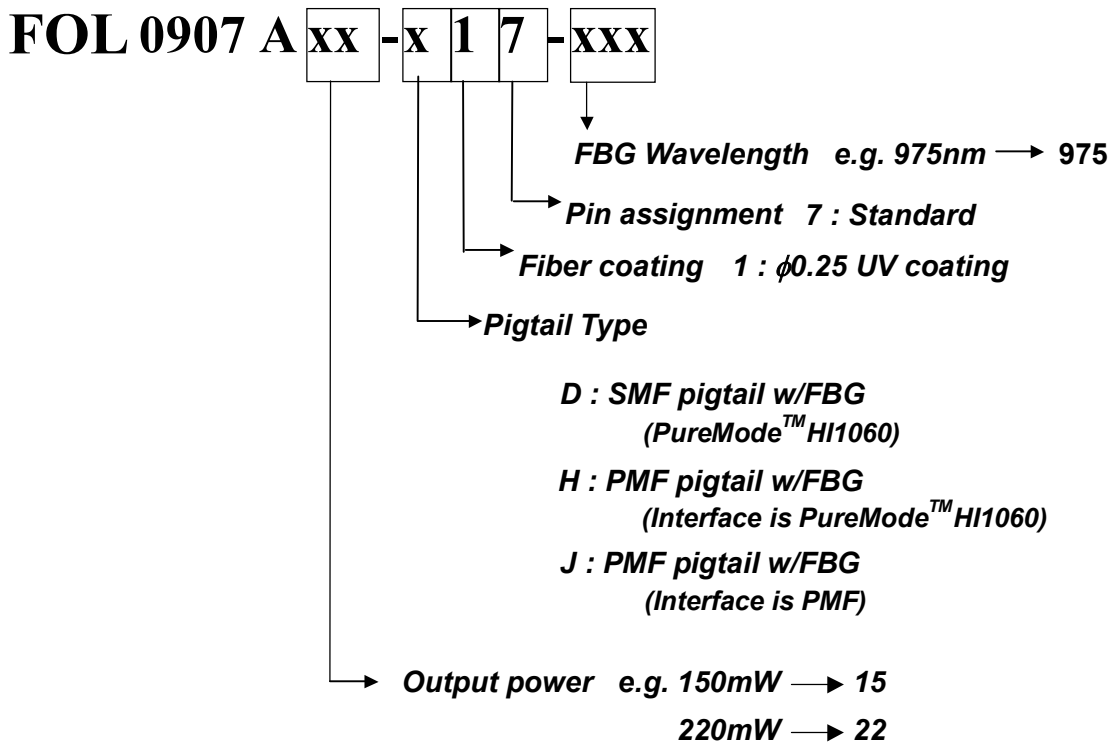
### Type D, J



### Type H



## Ordering Information



## 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.



ISO is a trademark of The International Organization for Standardization.  
Telcordia is a trademark of Telcordia Technologies, Inc.  
Puremode is a trademark of Corning, Inc.

Furukawa Electric Co, Ltd., Furukawa America, Inc, and Furukawa Electric Europe, Ltd. reserve the right to change data contained in this document in the interest of continued product improvement. The publication of this information does not imply freedom from patent or any other rights of The Furukawa Electric Company, Ltd. or its affiliated companies.  
All Rights Reserved, Copyright © THE FURUKAWA ELECTRIC CO., LTD.

# FITEL®

Furukawa Electric Co, Ltd  
Headquarters  
6-1 Marunouchi 2-chome  
Chiyoda-ku Tokyo  
100-8322 Japan  
T: 81-3-3286-3141  
F: 81-3-3286-3515  
[www.furukawa.co.jp](http://www.furukawa.co.jp)

Furukawa Electric Europe, Ltd  
3<sup>rd</sup> FL Newcombe House  
43-45 Notting Hill Gate  
London, UK  
T: 44-20-7221-6000  
F: 44-20-7313-5310  
[www.furukawa-fitel.co.uk](http://www.furukawa-fitel.co.uk)  
[sales@furukawa-fitel.co.uk](mailto:sales@furukawa-fitel.co.uk)

Furukawa America, Inc.  
Perryville Corporate Park  
Perryville III  
Clinton, NJ 08809 USA  
T: 908-713-3525  
F: 908-713-3515  
[www.furukawaamerica.com](http://www.furukawaamerica.com)  
[oesales@furukawaamerica.com](mailto:oesales@furukawaamerica.com)