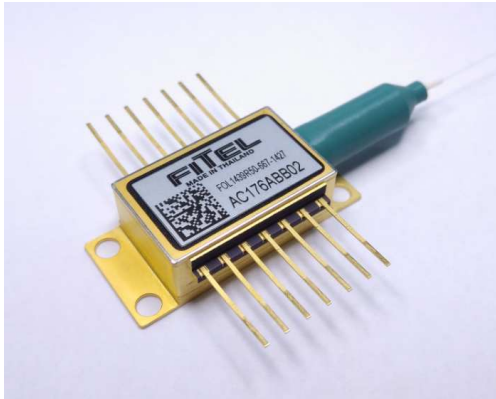


14xx-nm Pump Laser Diode Module (with FBG) (High output power / Low power consumption)



Applications

- Pump Source for Raman Amplifier
 - C-band Raman

Product Type : FOL1439 Series

Descriptions

- The FOL1439 series (with FBG) has been designed for use in a wide variety of optical amplifier, such as Raman Amplifier used in optical transmission systems, especially in dense wavelength-division-multiplexing (DWDM) systems.
- A strained multi-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 2-lens-system couples a round shape light from the laser chip efficiently to the fiber and enables the output power up to 600 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 600 mW (CW)
- 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 for back facet monitor
- Polarization maintaining fiber pigtail
- Wavelength stabilization available with external FBG
- EU RoHS compliant (Exemption 7(c)-1, 13(a) applied)

Absolute Maximum Rating

Parameters	Sym.	Min.	Max.	Unit
Storage Temperature	Tstg	-40	85	°C
Operating Case Temperature	Tc	-20	70	°C
LD Forward Current	If	-	2600	mA
LD Reverse Voltage	Vr	-	2	V
PD Forward Current	IfPD	-	5	mA
PD Reverse Voltage	VrPD	-	20	V
TEC Current	Ic	-1.1	4.5	A
TEC Voltage	Vc	-	4.5	V

Specifications

* LD sub-mount temperature

Parameters	Sym.	Min.	Typ.	Max.	Unit	Conditions
Output Power ¹⁾	Pf	Table A			mW	
Forward Current	If	Table A			mA	
Center Wavelength(FBG)	λ	$\lambda-1.5$	λ	$\lambda+1.5$	nm	RMS(-20dB), Rated Power $\lambda=1465-1500\text{nm}$ for FBG
Spectral Width	$\Delta\lambda$	-	-	3	nm	RMS(-20dB), Rated Power
Forward Voltage	Vf	Table A			V	Rated Power
Forward Current at EOL	IfEOL	-	-	1.15xIf BOL	mA	
Monitor Current	Im	100	-	2000	μA	VrPD=5V, Rated Power
Monitor Dark Current	Id	-	-	100	nA	VrPD=5V
Extinction Ratio	Re	16	-	-	dB	
TEC Specification	-	Table A				
Thermistor Resistance	Rth	9.5	-	10.5	k Ω	Ts* = 25°C
		6.0	-	7.0		Ts* = 35°C
Thermistor B Constant		-	3900	-	-	

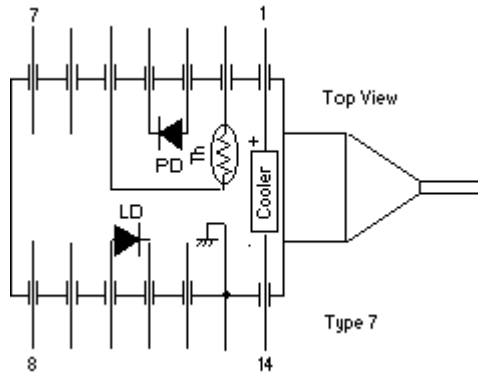
1) Pf: Available Pf may depend upon center wavelength selected.

Table A

**:End of Life

Part Number	Pf(mW)	If(mA) max	Tc(°C)	Ts(°C)	Vf(V) max	Itec(A)** max	Vtec(V)** max	Wtotal(W)** max
FOL1439R60	600	2300	70	25	2.1	3.3	3.9	16.0
FOL1439R55	550	2200	70	35	2.1	2.5	3.0	11.0
FOL1439R50	500	2000	70	35	2.0	2.3	2.8	9.0
FOL1439R45	450	1800	70	35	1.9	2.1	2.6	8.0
FOL1439R40	400	1600	70	35	1.7	1.9	2.4	6.5

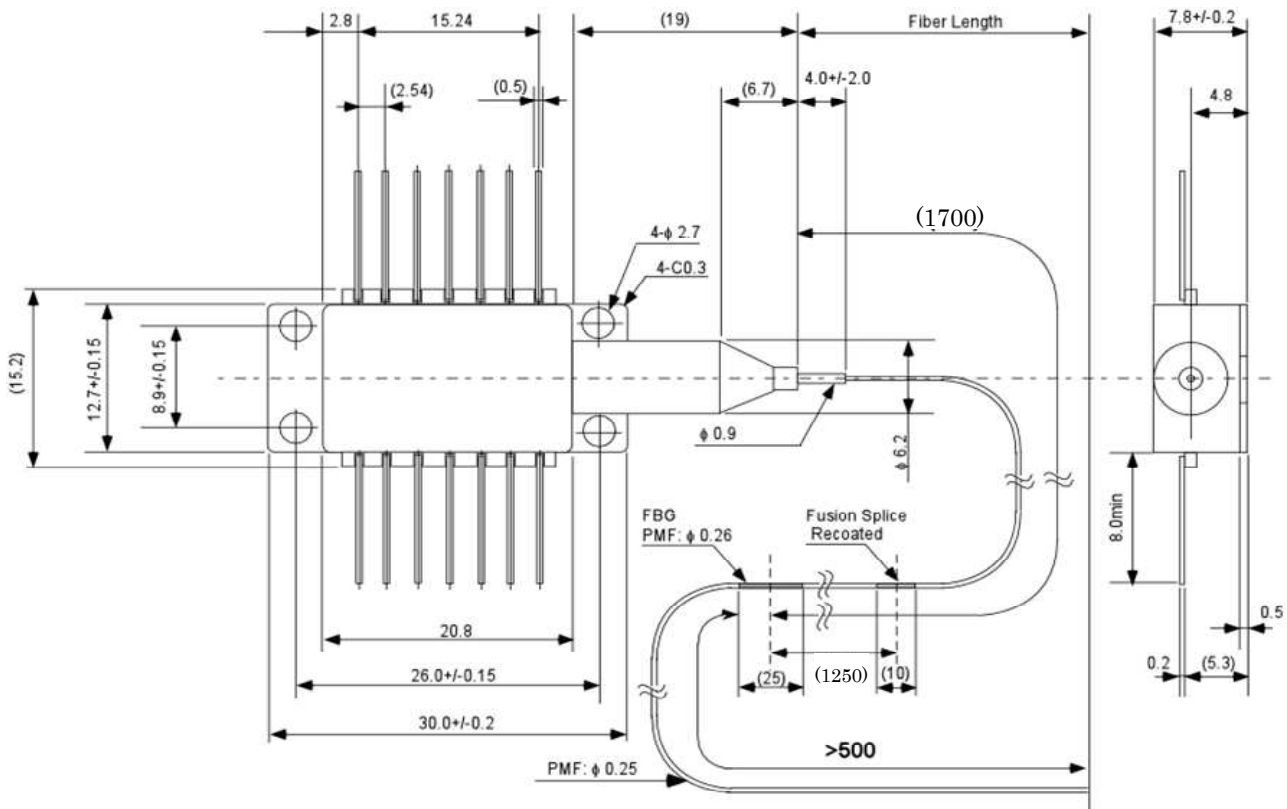
Pin Assignment



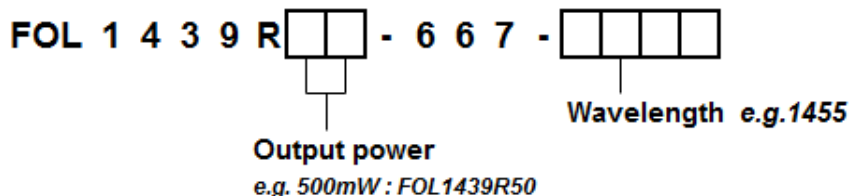
Pin#	Function	Pin#	Function
1	Cooler(+)	8	No Connection
2	Thermistor	9	No Connection
3	PD anode(-)	10	LD anode(+)
4	PD cathode(+)	11	LD cathode(-)
5	Thermistor	12	No Connection
6	No Connection	13	Case GND
7	No Connection	14	Cooler(-)

Dimensions

FOL1439Rxx-667-xxxx (w/1FBGs)



Ordering information



Safety information

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

ISO is a trademark of The International Organization for Standardization.

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Furukawa Electric reserves the right to improve, enhance and modify the features and specifications of FITEL products without prior notifications.

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