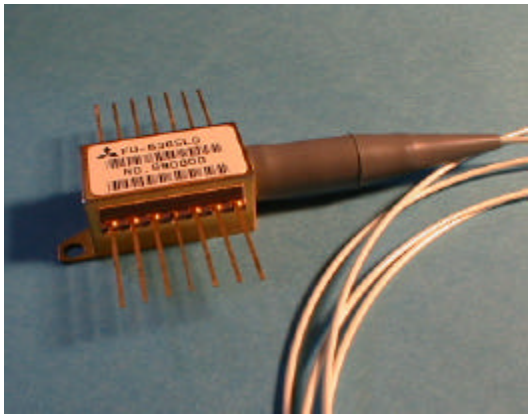
MITSUBISHI (OPTICAL DEVICES)

FU-630SLD-14M2

1.48 μm PUMP LD MODULE WITH SINGLEMODE FIBER (EDFA)

DESCRIPTION

Mitsubishi's FU-630SLD series 1480nm laser diode modules are designed as optical pumping sources for erbium-doped fiber amplifier (EDFA). This module is suitable for use in bi-directional pumped EDFA.



FEATURES

- Strain-MQW laser diode module specifically optimized for pump laser applications
- Emission wavelength is in 1.48μm band
- Built-in optical isolator
- Built-in thermal electric cooler
- Butterfly package
- With photodiode for optical output monitor
- Diode are hermetically sealed for high reliability

APPLICATION

Optical pumping source for erbium-doped fiber amplifier(EDFA)

ABSOLUTE MAXIMUM RATINGS (Tld=25°C)

Parameter		Symbol	Conditions	Rating	Unit
Laser diode	Forward current	If	CW	1000	mA
	Reverse voltage	Vrl	-	2	V
Photodiode for monitoring	Reverse voltage	Vrd	-	20	V
	Forward current	Ifd	-	3	mA
Cooler (Note)	Voltage	Vpem	-	4.5	V
	Current	Ipem	-	1.8	A
Operating case temperature		Tc	-	-20~+65	°C
Storage temperature		Tstg	-	-40~+70	°C

Note. Even if the thermo-electric cooler (TEC) is operated within the rated conditions, uncontrolled current loading or operation without heatsink may easily damage the module by exceeding the storage. Thermistor resistance should be properly monitored by the feedback circuit during TEC operation to avoid the catastrophic damage.

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ELECTRICAL/OPTICAL CHARACTERISTICS (Tld=25°C,Tc=25°C, unless otherwise noted)

Parameter	Symbol	Test Conditions	Limits			Unit
			Min.	Typ.	Max.	
Threshold current	Ith	CW	-	30	60	mA
Operating Voltage	Vop	CW, If=600mA (Note 1)	-	1.4	2.5	V
Optical output power from fiber end	Pf	CW, If=600mA	140	-	-	mW
Central wavelength	λc	CW, If=600mA	1460	1480	1490	nm
Spectral width(RMS)	Δλ	CW, If=600mA	-	10	20	nm
Tracking error (Note 2)	Er	Tc=-20~+65°C, APC, ATC	-	0.3	-	dB
Monitor current	Imon	CW, If=600mA, Vrd=5V	0.05	-	-	mA
Dark current (PD)	Id	Vrd=5V	-	0.1	1	μA
Capacitance (PD)	Ct	Vrd=5V, f=1MHz	-	10	-	pF

Note 1. If: LD forward current

2. Er=MAX|10×log(Pf(Tc)/Pf(25°C))|

THERMAL CHARACTERISTICS (Tld=25°C,Tc=-20~+65°C)

Parameter	Symbol	Test Conditions	Limits			Unit
			Min.	Typ.	Max.	
Thermistor resistance	Rth	Tld=25°C	9.5	10	10.5	KΩ
B constant of thermistor resistance	B	-	-	3950	-	K
Cooling capacity	ΔT	Tc=65°C	40	-	-	°C
Cooler current	Ipe	ΔT=40°C, If=600mA		1.0	1.5	A
Cooler Voltage	Vpe	ΔT=40°C, If=600mA	-	3.0	3.5	V

OPTICAL FIBER SPECIFICATION

Parameter	Limits	Unit
Type	SM	-
Mode filed diameter	9.5±1	μm
Cladding diameter	125±2	μm
Jacket diameter	0.9 typ.	mm

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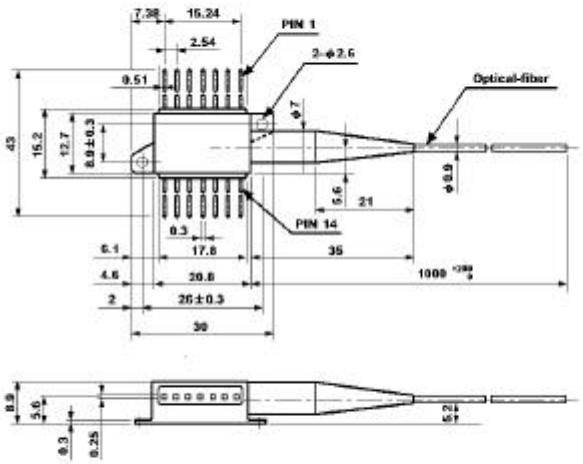
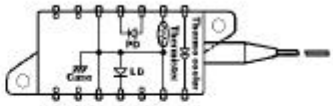
OUTLINE DIAGRAM

(Unit : mm)



PIN	FUNCTION
1	COOLER ANODE
2	THERMISTER
3	PD ANODE
4	PD CATHOD
5	GND
6	NC
7	NC
8	NC
9	NC
10	GND
11	LD CATHODE
12	NC
13	LD ANODE, GND
14	COOLER CATHODE



TOP VIEW

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