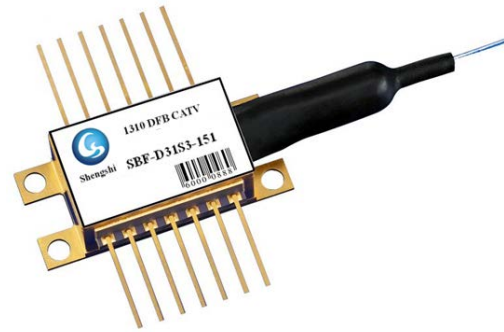




# 1270nm~1610nm CWDM Butterfly Laser Diode

## Features

- High linearity high power MQW CWDM DFB LD chip
- Built-in isolator, TEC, thermistor and Monitor PD
- Optimized for 2.5 Gb/s Modulation Rates
- 14-pin butterfly cooled package
- Single mode FC/APC connector or customized
- Output power 2~16mW



## Applications

2.5 Gb/s long haul CWDM Transmission.

## Absolute Maximum Ratings

Parameter	Symbol	Condition	Min.	Max.	Unit
Operating Case Temperature	T <sub>c</sub>	I=I <sub>op</sub>	-20	80	°C
Storage Temperature	T <sub>stg</sub>	-	-40	85	°C
Laser Forward Current	I <sub>f</sub>	-	-	150	mA
Laser Reverse Bias	V <sub>r</sub>	-	-	2	V
Photodiode Reverse Bias	V <sub>rpd</sub>	-	-	10	V
TEC Current	I <sub>tec</sub>	-20 °C < T <sub>c</sub> < +65 °C, Top=25 °C If=100 mA	-2	+2	A
TEC Voltage	V <sub>c</sub>	-	-2.5	+2.5	V
ESD	-	ESD - HBM: R=1500 ohm, C=100 pF	-500	+500	V
Lead Solder Temperature	-	-	-	260	°C
Lead Soldering Time	-	-	-	10	S
Fiber Bend Radius	-	-	30	-	mm
Fiber Yield Strength	-	-	-	1	kgf



## Optical & Electrical Characteristics

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Center Wavelength	$\lambda_c$	Note1	Note2			nm
Spectral Width (-3 dB)	$\Delta\lambda$	CW	-	0.5	1	nm
Optical Output Power	$P_o$	CW, TL=25 °C	-	-	16	mW
Optical Isolation	IS	T=25 °C	30	35	-	dB
Side-mode Suppression Ratio	SMSR	CW	35	40	-	dB
Threshold Current	$I_{th}$	TL=25 °C	-	10	15	mA
Operating Current	$I_{op}$	CW	-	-	100	mA
Forward Voltage	VF	CW	-	1.2	2.0	V
Monitor Current	$I_{mon}$	Vrpd=5 V	100	-	1500	$\mu$ A
Monitor Dark Current	ID	Vrpd=5 V	-	-	100	nA
Operating Case Temperature	T	-	-20	-	60	°C
Tracking Error	$\gamma$	TE=10log(Po(Tc)/Po(25°C))	-1	-	1	dB
Thermistor Resistance	Rt	T=25 °C	9.5	-	10.5	K $\Omega$
Thermistor B Constant	B	T=25 °C	-	3900	-	K
TEC Current	IC	$\Delta$ T=40°C	-	-	1.0	A
TEC Voltage	VC	$\Delta$ T=40°C	-	-	2.0	V
Frequency Range	F	-	45	-	2500	MHz
Cut-off Frequency	Fc(-3dB)	If= $I_{op}$	4	-	-	GHz
RIN	Nr	CW, If= $I_{op}$ , f=2.5GHz	-	-155	-150	dB/Hz

Note 1. 2.5Gb/s NRZ, pseudo-random, Pb=0.2mW, Ppeak=2.0mW

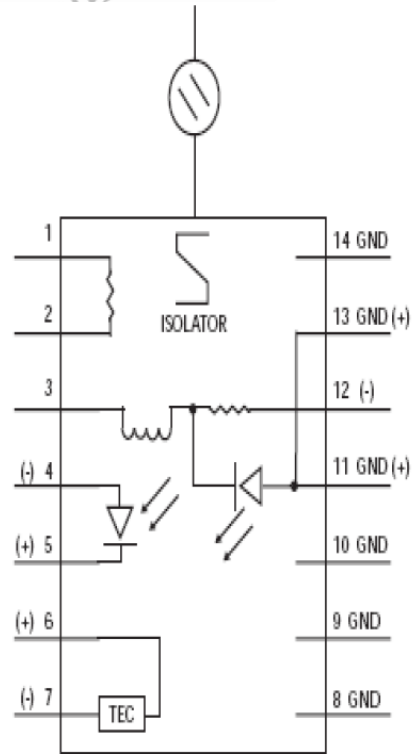
Note 2. The selected wavelength is available as follow:

Wavelength (nm) (TI=Tset) (in vacuum)	Tolerance(nm)
1271	$\pm 2$ or $\pm 3$
1291	$\pm 2$ or $\pm 3$
1311	$\pm 2$ or $\pm 3$
1331	$\pm 2$ or $\pm 3$
1351	$\pm 2$ or $\pm 3$
1371	$\pm 2$ or $\pm 3$
1391	$\pm 2$ or $\pm 3$
1411	$\pm 2$ or $\pm 3$
1431	$\pm 2$ or $\pm 3$
1451	$\pm 2$ or $\pm 3$
1471	$\pm 2$ or $\pm 3$
1491	$\pm 2$ or $\pm 3$
1511	$\pm 2$ or $\pm 3$
1531	$\pm 2$ or $\pm 3$
1551	$\pm 2$ or $\pm 3$
1571	$\pm 2$ or $\pm 3$
1591	$\pm 2$ or $\pm 3$
1611	$\pm 2$ or $\pm 3$

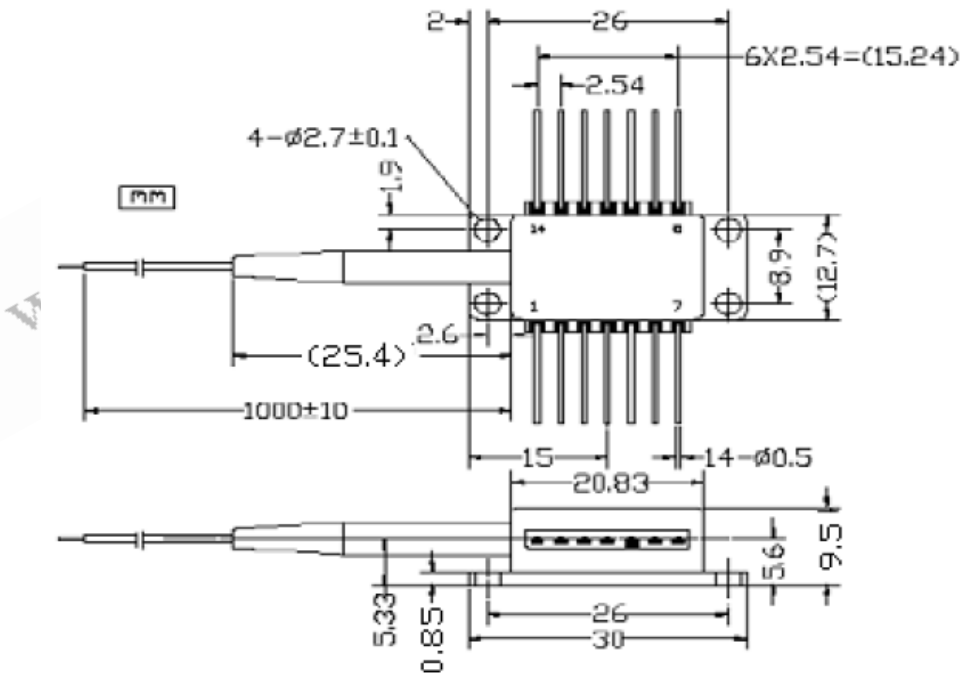


### Pin Description:

Pin	Description	Pin	Description
1	Thermistor	8	Ground
2	Thermistor	9	Ground
3	LD (N) bias	10	Ground
4	Detector (P)	11	LD (P), ground
5	Detector (N)	12	LD (N), RF modulation
6	TEC (+)	13	LD (P), ground
7	TEC (-)	14	Ground



### Package Outline





## Order Information

### SBF-CXX2-XXX

S	BF	-C	X	X	2	-X	X	X
Mode	Product Type	Chip	Wavelength	Insolator	Bandwidth	Connector	Pigtail Length	Power Range
		C:CWDM	27: 1271nm 29: 1291nm ..... 59: 1591nm 61: 1611nm	S: Single B: Dual W: Without	2: 2.5Gb/s	1: FC/APC 2: FC/PC 3: SC/APC 4: SC/PC 5: LC/PC W: Without	05: 0.5M 10: 1.0M	P1: >1mW P2: >2mW ..... P16: >16mW

**Additional requirements can be settled through friendly negotiation.**

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