

## DWDM DFB Butterfly Laser Module ( 14 pins )

### Features

- High Linearity Direct Modulation DFB laser
- Standard ITU Grid Wavelengths
- Built -in Isolator , TEC, Thermistor and Monitor PD
- Hermetically Sealed 14 Pin Butterfly Package
- Telcordia Technologies 468 Compliant
- Wide Temperature Range – Stable Even In Harsh Environments

### Application

- Note Capability
- Narrow Transmitter Housing
- Networks With Limited Fiber
- Architectures Using Separate Optical
- Wavelengths to Carry Targeted Services
- Optical Communication
- Test equipment



The 1550nm DWDM DFB laser is available in a wide range of standard ITU wavelengths.

The lasers are offered as either forward – path (40MHz –1GHz) or return–patch (5 MHz –210 MHz ) modules.

## Absolute Maximum Ratings

Parameter	Symbol	Min	Typ.	Max.	Unit	Test Conditions
Storage Temperature	$T_{st}$	- 40	-	+ 85	°C	CW
Operate Case Temperature	$T_C$	- 40	-	+ 85	°C	CW
Laser Forward Current	$I_f$	-	-	1000	mA	-
Laser Reverse Bias	$V_r$	-	-	1	V	-
Reverse Voltage PD	$V_{rpd}$	-	-	10	V	-
Reverse Voltage (Laser diode)	$V_{RL}$	-	-	2	V	Reverse Current <500uA
ESD		-500	-	+500	V	HBM:R=1500Ω.C=100pF
TEC Current	$I_{tec}$	-1.7	-	+1.7	A	CW
RF Input Power	$P_{RFIN}$	-	-	62	dBmV	$I_f = I_{op}$
Relative Humidity	$R_H$	-	-	95	%	Top < 30 °C
Thermal Electric Cooler		-	-	2	V	voltage
		-	-	1.5	A	current

Fiber Yield Strength	-	-	30	nm	-
Fiber Bend Radius	-	-	1	kgf	-
Soldering Temperature /Time	260/10			°C/S	-

## Performance Highlights

Parameter	Min	Typ.	Max.	Unit	
Available Wavelengths ( ITU Grid )	1526	-	1563	nm	
Output Power	2	-	25	mW	
Temperature Case Temperature Range	- 40	-	+ 85	°C	
Frequency Range	Return Path	5	-	210	MHz
	Forward Path	40 MHz	-	1	GHz
Composite Second ORder	50	-	-	dBc	
Composite Triple Beat	60	-	-	dBc	
Adiabatic Chirp @ 500MHz	40	-	100	MHz / mA	

## Specifications (electrical & optical characteristics)

Parameter	Symbol	Min	Typ.	Max.	Unit	Test Conditions
Threshold Current	$I_{th}$	-	-	20	mA	CW
Operating Current	$I_{OP}$	-	-	120	mA	CW
Monitor PD Res	$R_{PD}$	10	-	200	$\mu A/mW$	$V_{rm} = 5V$
Thermistor	$R_{th}$	9.5	-	10.5	$K\Omega$	25 °C
Thermistor TEMP Coefficient	$TC_{th}$	-	-4.4	-	% / °C	25 °C
Wavelength	$\lambda_C$	1526.0	-	1563.1	nm	CW, $I_f = I_{op}$ , $T = T_{op}$
Output Power	$P_O$	1	-	100	mW	CW
Side-mode Suppression Ratio	SMSR	35	-	-	dB	CW, $I_{op} = 10mW$
Slope Efficiency	$S_e$	0.16	0.19	-	mW/mA	CW
Isolation	ISO	30	-	-	dB	-
Laser Relative Intensity Noise	RIN	-	< -155	-	dB / Hz	$I_f = I_{th} + 70mA, 25\text{ °C}$

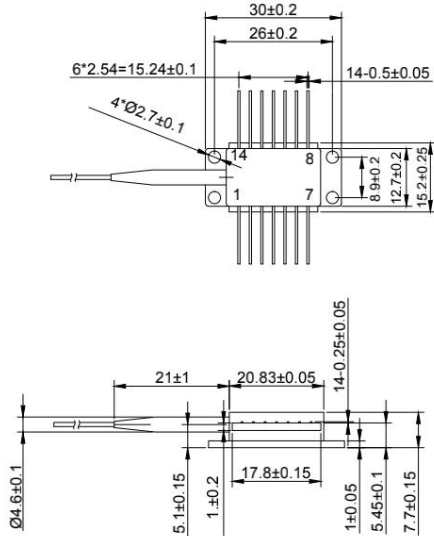


Spectral Width	$\Delta \lambda$	-	-	0.04	nm	If = 60 mA, T = Top
RF Return Loss	S11	16	-	-	dB	-
Composite Second Order	CSO	50	-	-	dBc	Note ,1.2.3.4
Composite Triple Beat	CTB	60	-	-	dBc	Note ,1.2.3.4
Carrier to Noise Ratio	CNR	51	-	-	dB	Note ,1.2.3.4
Adiabatic Chirp	FM	40	-	100	MHz/mA	If = 60mA, 25 °C @500MHz
Nominal Input Impedance	Z <sub>IN</sub>	-	25	-	dB	-

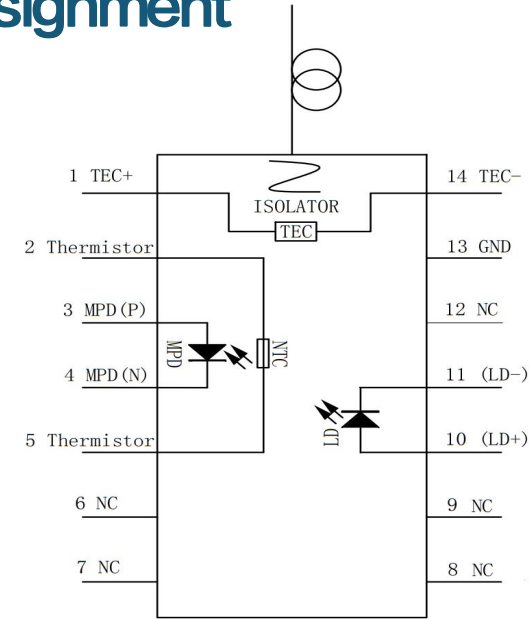
### Note

- 1: I<sub>op</sub> is the bias point at which simultaneously the linearity, the min. optical power and the required operating wavelength,  $\lambda_{op}$  are obtained.
- 2: 8 channel loading with 10% OMI and 40km fiber length.
- 3: Receiver thermal noise  $8 \text{ pA} \cdot \text{Hz}^{-0.5}$ , 0.5mA @ I<sub>th</sub> + 40mA, photodiode responsivity ~ 1.1 A/W, noise bandwidth 4.2MHz.
- 4: Forward band (45~870MHz): Eight channel CW measurement : 552.25,559.25,565.25,571.25,577.25,583.25,595.25 MHz.  
CTB @ 553.25,577.25,595.25MHz, CSO@42MHz.

## Dimensions(nm)



## Pin Assignment



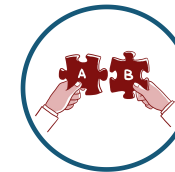
## Order Information

## GTA9080



Please let us know your request details before order.

\*\* If you have your own Pin Assignment request .  
Kindly share it with us before order .



Customize for you



## Available Channels:

Ordering Option	ITU Frequency	Wavelength	Ordering Option	37ITU Frequency	Wavelength
15	191.5	1565.50	26	192.6	1556.56
16	191.6	1564.68	27	192.7	1555.75
17	191.7	1563.86	28	192.8	1554.94
18	191.8	1563.05	29	192.9	1554.13
19	191.9	1562.23	30	193.0	1553.33
20	192.0	1561.42	31	193.1	1552.52
21	192.1	1560.61	32	193.2	1551.72
22	192.2	1559.79	33	193.3	1550.92
23	192.3	1558.98	34	193.4	1550.12
24	192.4	1558.17	35	193.5	1549.32
25	192.5	1557.36	36	193.6	1548.51

37	193.7	1537.72	51	195.1	1536.61
38	193.8	1546.92	52	195.2	1535.82
39	193.9	1546.12	53	195.3	1535.04
40	194.0	1545.32	54	195.4	1534.25
41	194.1	1544.53	55	195.5	1533.47
42	194.2	1543.73	56	195.6	1532.68
43	194.3	1542.94	57	195.7	1531.90
44	194.4	1542.14	58	195.8	1531.12
45	194.5	1541.35	59	195.9	1530.33
46	194.6	1540.56	60	196.0	1529.55
47	194.7	1539.77	61	196.1	1528.77
48	194.8	1538.98	62	196.2	1527.99
49	194.9	1538.19	63	196.3	1527.22
50	195.0	1537.40			