Allwave Lasers

Narrow Linewidth Laser Diodes

Innovation in lasers
creating a brighter future

Narrow Linewidth Laser Diodes (NLLD)-External cavity laser Series

Product Description: The 50KHz NLLD laser diodes are FBG locked external cavity laser with direct modulation speed of 2.5GHz is cost effective solution for narrow linewidth coherent laser source. These laser diodes are fabricated in a hermetically sealed 14-pin butterfly package that contains thermoelectric cooler (TEC), thermistor, monitor photodiode, optical isolator. The NLLD provides substantially lower dispersion penalty and lower chirp than a directly modulated DFB. The wavelength stability is assured by design, eliminating the need for wavelength lockers and complex feedback control circuits. The products are Telcordia GR-468 qualified, and in compliance with RoHS requirement.

Applications

- Metro and Long Haul DWDM networks
- SONET/SDH OC-48/STM16 applications
- Drop-side of DWDM long-haul transport equipment
- Optical Test and Instrumentation
- CATV networks
- Sensors

Features

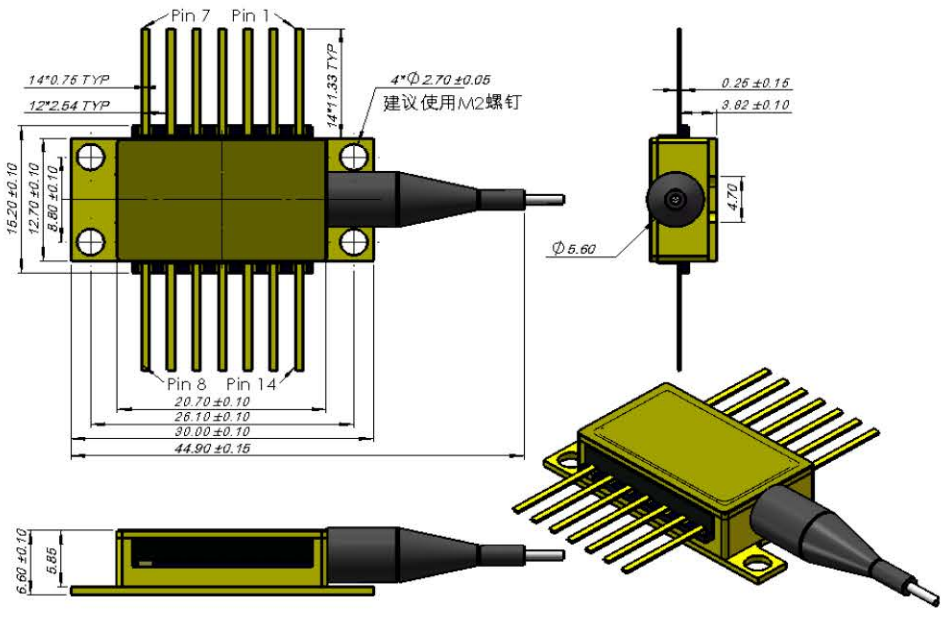
- ITU wavelengths across C-band 100 GHz channel spacing
- SONET/SDH OC-48/STM16 ring and meshed application
- Low dispersion provides
- Low transient chirp provides unique narrow dynamic spectrum
- Excellent long-term wavelength stability eliminates the need for a wavelength locker

Optical and Electric Specifications

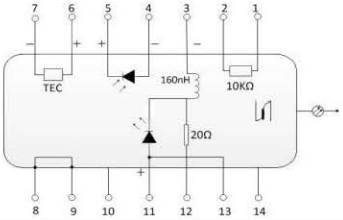
Parameter	Symbol	Min.	Typ.	Max.	Unit
Center Wavelength	λ_c	λ_n-0.2	-	λ_n+0.2	nm
Peak Optical Output Power	Po	10	-	-	mW
Spectral Linewidth	LW	-	50	75	KHz
Side-Mode Suppression Ratio	SMSR	30	45	-	dB
Optical Isolation	ISO	30	-	-	dB
Forward Current	I_F	-	150	300	mA
Threshold Current	I_{TH}	-	15	25	mA
Slope Efficiency	η	0.064	0.1	-	mW/mA
Laser Forward Voltage	V_F	-	1.3	3	V
Laser Reverse Voltage	V_R	-	-	2	V
TEC set temperature	Ts	15	-	35	°C
Photodiode Reverse Voltage	V_{RPD}	-	-	10	V
Photodiode Forward Current	I_{FPD}	-	-	2	mA
Monitor Dark Current	I_D	-	-	0.1	μA
Thermistor Current	I_{tc}	10	-	100	μA
Thermistor Resistance	R_{th}	9.5	-	10.5	KΩ
TEC Current	I_{tec}	-	-	1.8	A
TEC Voltage	V_{TEC}	-	-	3.5	V
Thermistor Temperature	-	-	-	100	℃
Operating temperature	T	-20	-	70	℃
Storage Temperature	T	-40	-	85	℃

Note 1: λ_n=ITU DWDM C-band Channel Wavelength(1527.99~1565.50nm) and 1310nm band

Mecahnical Dimensions:



PIN Definition:



1	Thermistor
2	Thermistor
3	Laser DC Bias Cathode (–)
4	Back-facet Monitor Anode (–)
5	Back-facet Monitor Cathode (+
6	Thermoelectric Cooler (+)
7	Thermoelectric Cooler (–)
8	Case Ground
9	Case Ground
10	NC
11	Laser Anode (+)
12	Laser RF Cathode (-)
13	Laser Anode (+)
14	Case Ground

Ordering Information

NLLD-	□	□	□	□	□□	□	□	□
	Wavelength （ITU Channel）				Power	Fiber Type	Fiber length	Connector
	8	6	2	0	03: 3mW	S: SM Fiber	1:50cm	0:None
	8	6	2	5	05: 5mW	P: PM Panda Fiber	2:100cm	1:FC/UPC
	…	…	…	…	10: 10mW	C: Customize	3:150cm	2:FC/APC
NLLD-	9	1	5	0	20: 20mW		4:200cm	3:SC/UPC
	1	3	1	0			C:Customize	4:SC/APC
								5:LC/UPC
								6:LC/APC
								C:Customize

Example of Ordering Form: NLLD-934005S22

NLLD-	9340	05	S	2	2
	Wavelength: C-band channel 34, 1550.12nm	5mW	SMF-28e	100cm	FC/APC