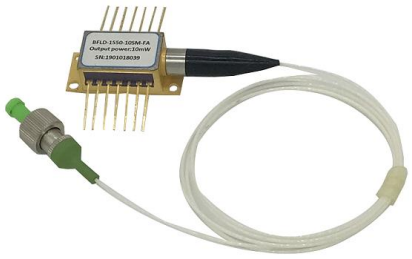
1310nm DFB 100KHz Narrow Linewidth Laser

1. Features:

- 1310nm DFB Laser;
- Narrow linewidth <100KHz;
- 100mW High output power;
- Built-in TEC and Monitor PD;

Reliability: Telcordia GR-468. RoHS



2. Applications:

- Lidar;
- Wind radar;
- Optical fiber sensing;
- Coherent communication.

3. Absolute Maximum Ratings

Parameter	Symbol	Min.	Max.	Unit
LD Forward current	I_F	-	900	mA
Thermoelectric cooler voltage	V_{TEC}	-	4.8	V
Thermoelectric cooler current	I_{TEC}	-	2.5	A
Case temperature	T_C	-40	85	℃
Storage temperature	T_{STG}	-40	85	℃
Storage humidity	-	5	85	%RH
Electro static discharge (ESD)	V_{ESD}	-	500	V
Lead soldering temperature	S_{TEMP}	-	260	℃
Lead soldering time	S_{TIME}		10	sec

4. Electro-Optical Characteristics(25℃ laser temperature):

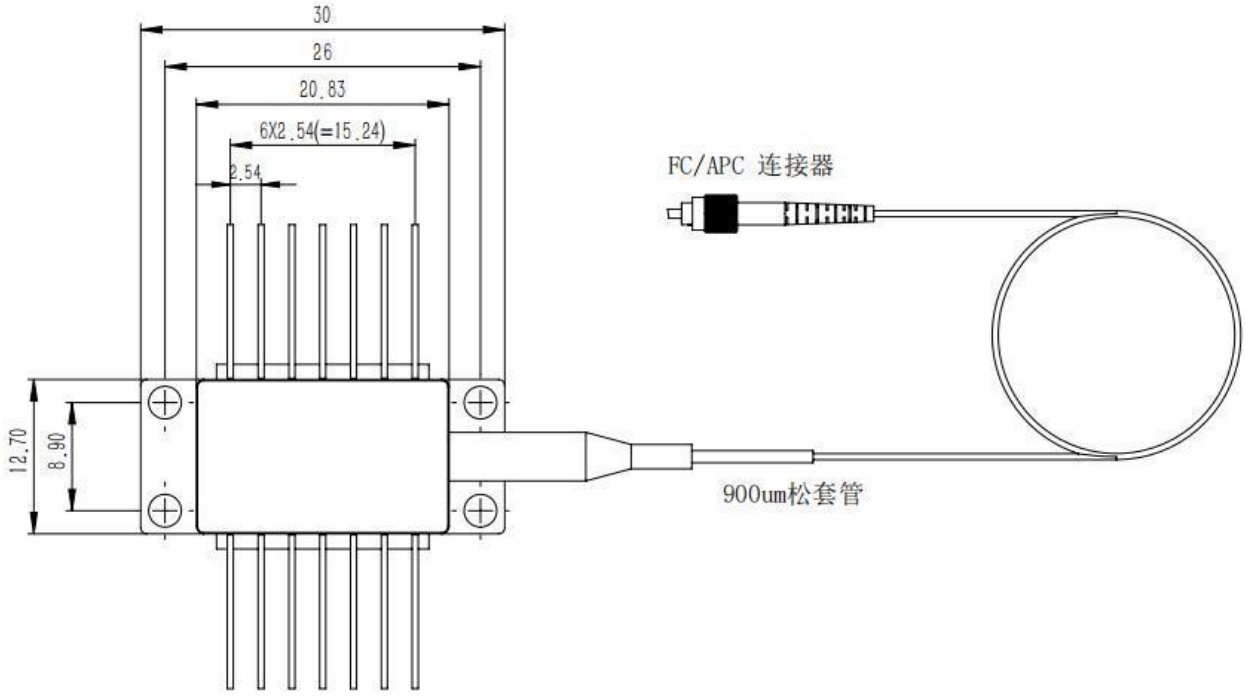
Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Center wavelength	λc	T_L=15～35℃ CW	1305	1310	1315	nm
Optical output power	P_O	-	100	-	-	mW
Threshold current	I_{TH}	T_L=25℃	-	-	40	mA
Operating voltage	V_{OP}	P_O= 10mW (CW)	-	-	2.5	V
Operating current	Iop	P_O= 10mW (CW)	-	700	800	mA
Spectral linewidth	LW	FWHM	-	-	100	KHz
MPD Responsivity	I_{MON}/P_{OP}	-	1	-	30	μA/mW
Side-mode suppression ratio	SMSR	CW	40	-	-	dB

Optical isolation	-	-10 < T_C < +70℃	40	-	-	dB
TEC set temperature	Ts	-	15	-	35	℃
Thermistor current	I_{TC}	-	-	-	0.5	mA
Thermistor resistance	R_{TH}	TL = 25℃	9.5	10	10.5	KΩ
TEC Current	I_{TEC}	TL = 25℃, TC = 70℃	-	-	1.5	A
TEC Voltage	V_{TEC}	TL = 25℃, TC = 70℃	-	-	3.5	V
TEC Capacity	ΔT	Tc = 70℃	-	-	50	℃
Wavelength drift (EOL)	△λ	Tested over 25-year lifetime	-	-	±0.1	nm
Wavelength temperature coefficient	Δλ/ΔT	TEC temperature at 15℃ to 35℃	-	0.1	-	nm/℃
Wavelength current modulation coefficient	I_{TR}	200-800mA	0.2	-	0.4	GHz/mA

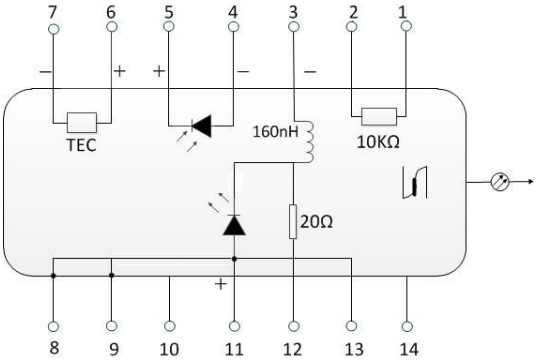
5. Optical Fiber Specifications:

Parameters	Description
Fiber type	SMF-28e or PM1310
Pigtail type	900μm loose tube
Pigtail length	1.0±0.1m
Connector type	FC/APC

6. Package drawing&PIN-OUT Definition(Unit:mm):

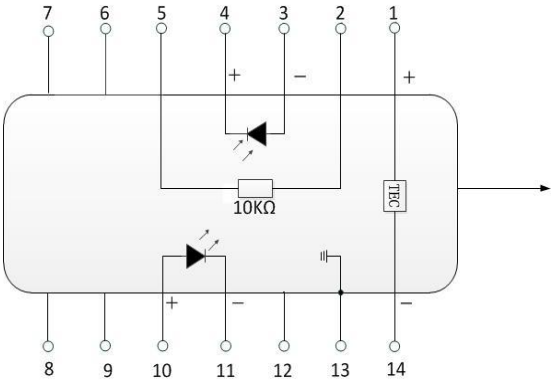


Type 1



PIN	Description	PIN	Description
1	Thermistor	14	NC
2	Thermistor	13	Laser Anode (+)/GND
3	Laser dc Bias(Cathode)(–)	12	Laser RF Cathode (-)
4	PD Monitor Anode (-)	11	Laser Anode (+)/GND
5	PD Monitor Cathode (+)	10	NC
6	TEC(+)	9	Case Ground
7	TEC(–)	8	Case Ground

Type 2



PIN	Description	PIN	Description
1	TEC(+)	14	TEC(–)
2	Thermistor	13	Case Ground
3	PD Monitor Anode (-)	12	NC
4	PD Monitor Cathode (+)	11	Laser Cathode (-)
5	Thermistor	10	Laser Anode (+)
6	NC	9	NC
7	NC	8	NC

7. Ordering Information:

BNLD	-XXXX	-X	XX	XX	-XX	X
Laser type	Wavelength	Linewidth	Output power	Fiber type	Connector	PIN-OUT
Narrow linewidth Laser	1310: 1310nm	1: 100KHz	1H: 100mW	SM: SMF28e PM : PM1310	FA : FC/APC Other	NULL: Type 1 2: Type 2

E.g.:BNLD-1310-11HPM-FA (Order information: 1310nm 100KHz DFB Narrow linewidth laser diode with 100mW output power, and PM fiber with FC/APC connector, PIN-OUT is Type 1).