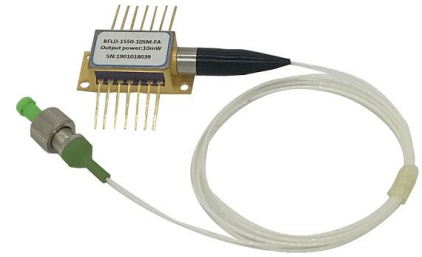


1683nm 10mW DFB Butterfly Laser Module

1. Features:

- 10mW High output power;
- Industry-standard, 14PIN butterfly package;
- Built-in TEC and optical isolator;
- Multiquantum well (MQW) distributed-feedback (DFB) laser;

Reliability: Telcordia GR-468. RoHS.



2. Applications:

- Tunable diode laser absorption spectroscopy;
- C2H6 Monitoring.

3. Absolute Maximum Ratings:

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Storage temperature	T _s	-	-40	-	85	°C
Operating case temperature	T _{op}	-	-20	-	70	°C
LD Forward current	I _F	CW	-	-	150	mA
LD Reverse current	I _R	-	-	-	2	mA
LD Reverse Voltage	V _{LR}	-	-	-	10	V
PD Forward Current	I _{FPD}	-	-	-	10	mA
PD Reverse Voltage	V _{RPD}	-	-	-	20	V
TEC current	I _{TEC}	-	-	-	2.0	A
TEC voltage	V _{TEC}	-	-	-	3.5	V
Fiber bend radius	-	-	30	-	-	mm
Relative humidity	RH	Non condensing	0	-	95	%
Lead soldering time	-	260°C	-	-	10	S
Fiber axial pull force	-	-	-	-	5	N
Fiber side pull force	-	-	-	-	2.5	N

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

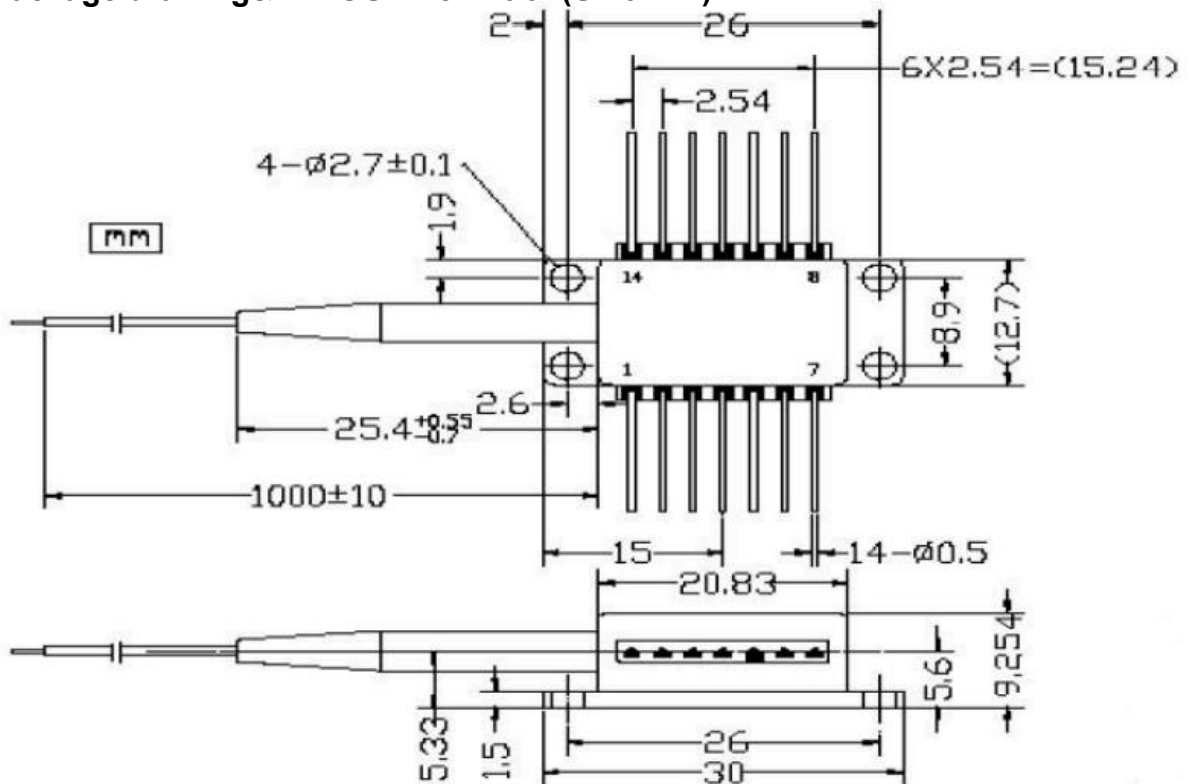
Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Center wavelength	λ _c	T _L =15~35°C CW	1682	1683	1684	nm
Optical output power	P _o	T _L =15~35°C CW	-	10	-	mW
Threshold current	I _{TH}	CW	15	-	25	mA
LD Forward current	I _F	P _F =Rated Power	-	80	120	mA
LD Forward voltage	V _F	P _F =Rated Power	-	-	2.5	V
Side-mode suppression ratio	SMSR	CW	35	40	-	dB
Optical isolation	-	-10 < T _c < +70°C	30	35	-	dB

Monitor responsivity	I_M/P_F	-	-	1	20	$\mu\text{A/mW}$
Monitor responsivity stability	-	-	-	-	20	%
Monitor dark current	I_D	-	-	-	50	nA
TEC Current	I_{TEC}	$T_L = 25^\circ\text{C}, T_C = 70^\circ\text{C}$	-	0.6	1.5	A
TEC Voltage	V_{TEC}	$T_L = 25^\circ\text{C}, T_C = 70^\circ\text{C}$	-	1.3	3.5	V
TEC Power consumption	P	$T_C = 75^\circ\text{C}$	-	-	5	W
Thermistor resistance	R_{TH}	$T_C = 25^\circ\text{C}$	9.5	10	10.5	Kohm
Thermistor B constant	B_{TH}	$T_C = 25^\circ\text{C}$	-	3900	-	K
Wave. temp. coefficient	$\Delta\lambda/\Delta T$	$0^\circ\text{C} < T_{case} < 65^\circ\text{C}$	-	-	0.12	$\text{nm}/^\circ\text{C}$
Wave. current coefficient	$\Delta\lambda/\Delta I$	$20^\circ\text{C} < T_\lambda < 35^\circ\text{C}$	-	-	0.015	nm/mA

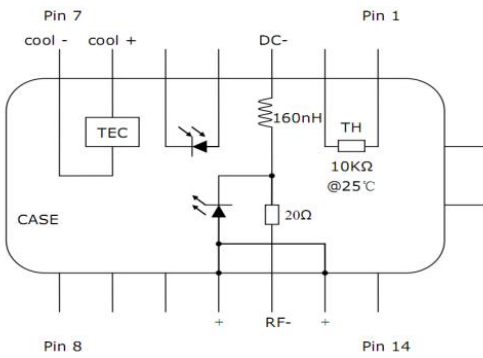
5. Optical Fiber Specifications:

Parameters	Description
Fiber Type	SM fiber
Pigtail Type	900 μm loose tube
Pigtail Length	$1.0 \pm 0.1\text{m}$
Connector Type	FC/APC

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

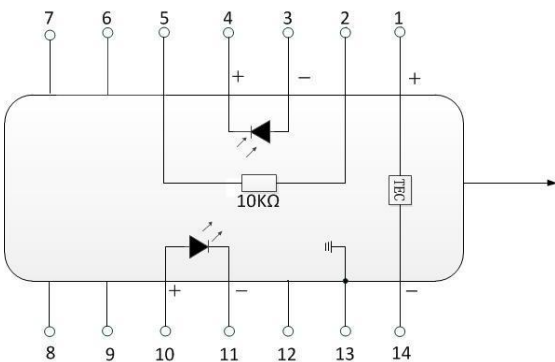


Type 1



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

Type 2



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

7. Ordering Information:

BFLD	-XXXX	-XX	-XX	-XX	X
Laser type	Wavelength	Output power	Fiber type	Connector type	PIN-OUT
DFB Laser	1683: 1683nm Customized	10: 10mW Customized	SM : Single mode PM : Polarization maintaining	FA : FC/APC SA : SC/APC Other	NULL: Type 1 2: Type 2

E.g.:BFLD-1683-10SM-FA (Order information: 1683nm DFB Laser diode with 10mW output power, and SM fiber with FC/APC connector, PIN-OUT is Type 1).