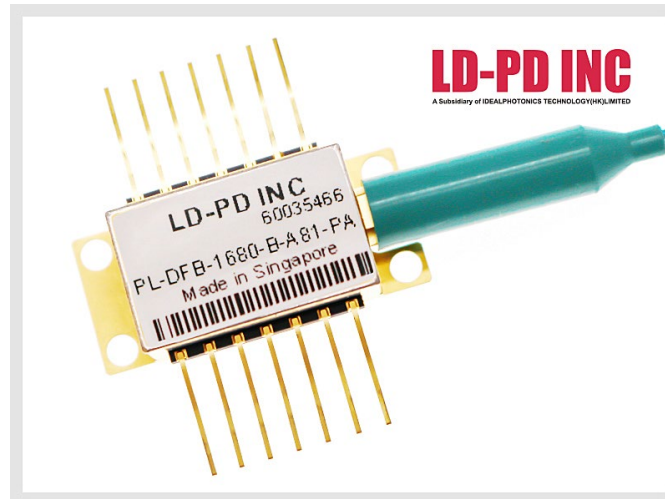


## 1680nm DFB Laser diode for C2H6 Sensing



### Description:

The PL-DFB-1680-A-A81 1680nm DFB laser diode module made by LD-PD is a cost effective, highly coherent laser source. The DFB laser diode chip is packaged in an industry standard hermetically sealed 14 pin butterfly package with TEC and PD Built in.

### Features:

- Narrow Linewidth < 2MHz
- Excellent wavelength control and stability
- Industry Standard 14 pin Butterfly package
- Mode-Hop free tuning
- Excellent reliability
- Customer specific wavelengths available

### Application:

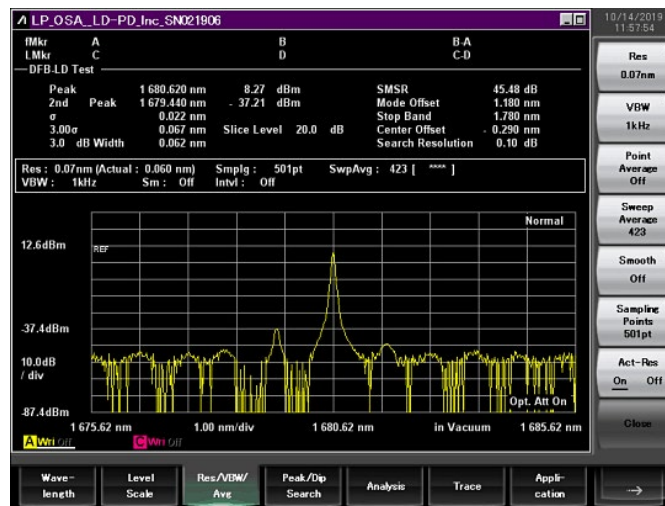
- Tunable diode laser absorption spectroscopy
- C2H6 Monitoring

**Laser Specifications:**

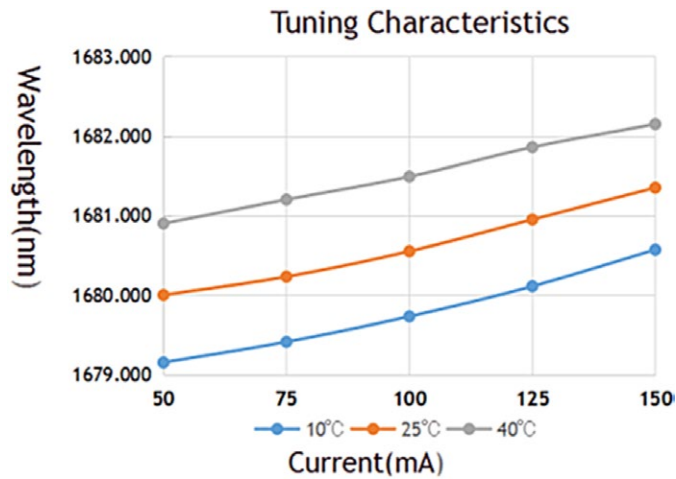
Electrical/Optical Characteristics(Tsub=25°C, CW bias unless stated otherwise)

Parameter	Symbol	Min	Typ	Max	Unit
Centre Wavelength	$\lambda$	1679	1680	1681	nm
Side Mode Suppression Ratio	SMSR	30	40		dB
Threshold Current	I <sub>th</sub>		20	30	mA
Operating Current	I <sub>op</sub>		80	120	mA
Chip output Power	P <sub>f</sub>	10	15	30	mW
Quantum Efficiency	$\eta$	0.08	0.12		mW/mA
Current Tuning Coefficient	$\Delta\lambda/\Delta I$		0.015		nm/mA
Temperature Tuning Coefficient	$\Delta\lambda/\Delta T$		0.12		nm/K
Forward Voltage	V <sub>f</sub>		1.3	2	V
Thermistor Resistance	R <sub>T</sub>	9.5	10	10.5	K $\Omega$
Thermistor Temp. Coefficient			-4.4		%/°C
Connector	FC/APC				

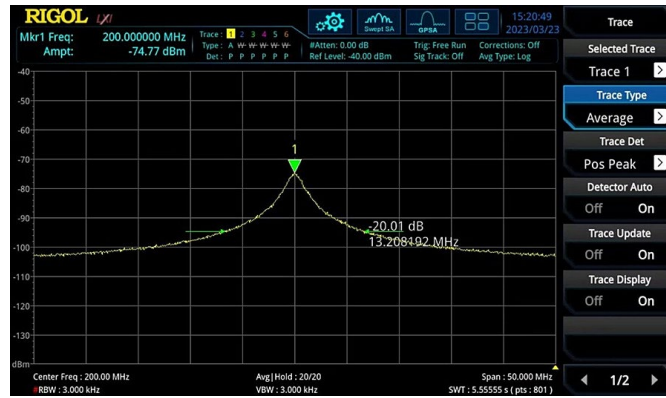
**Spectrum:**



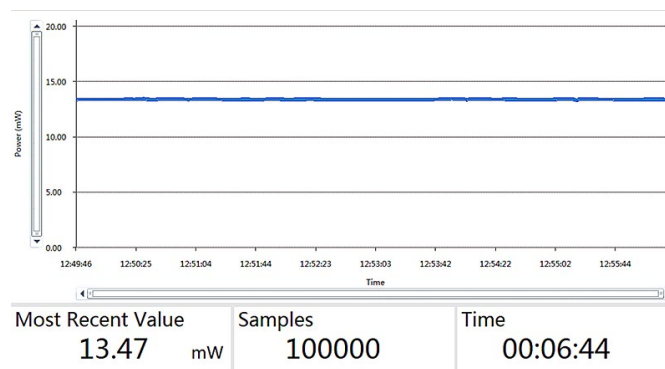
**Tuning Characteristics:**



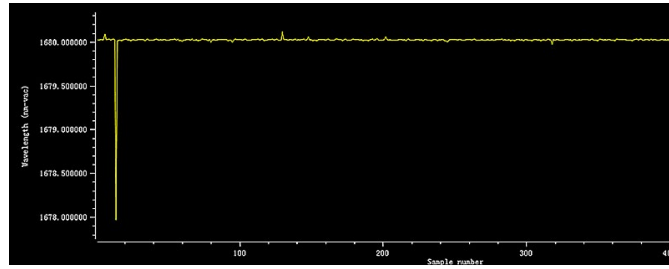
**DFB Linewidth Testing Result:**



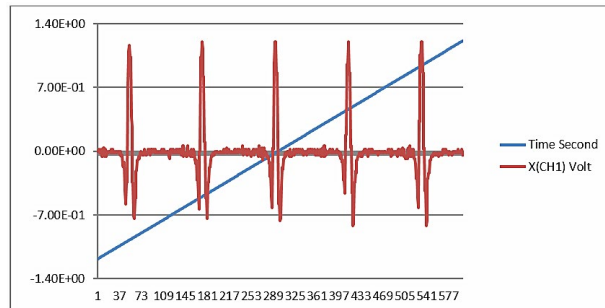
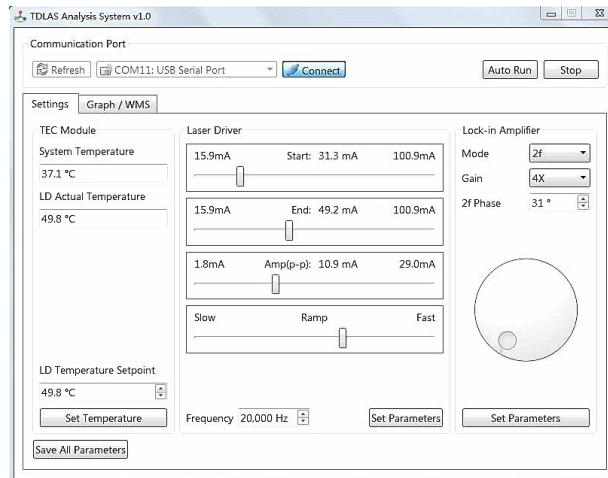
**Power Stability:**



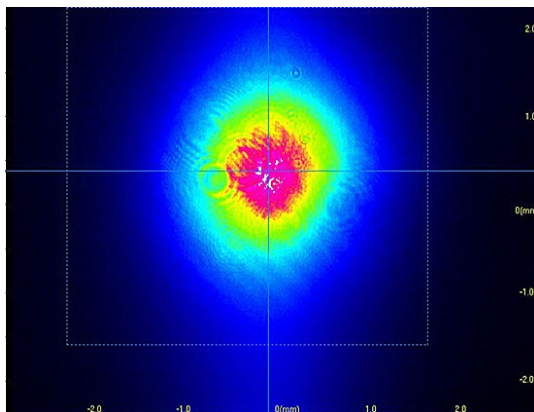
**Wavelength Stability:**



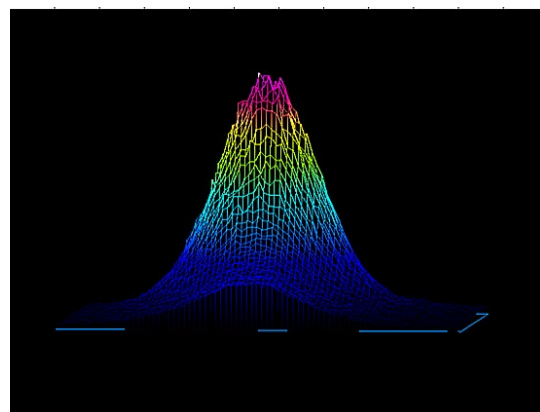
**2F Signal testing Condition(200pm C2H6,20m optical path,25°C,1atm):**



**Wavelength Stability:**

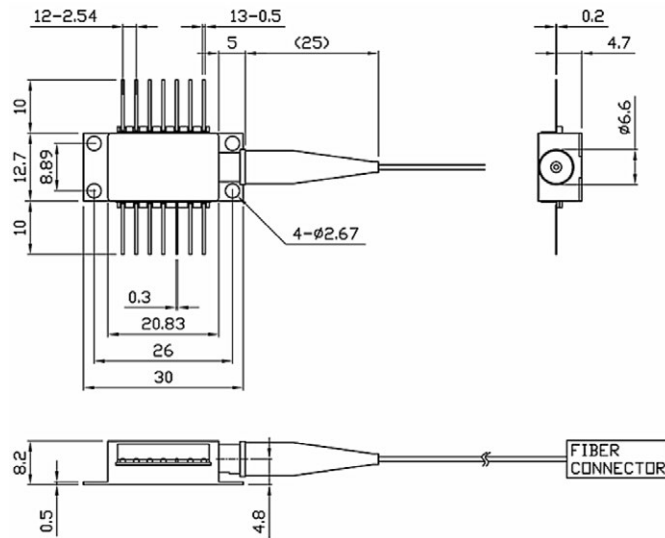


2D

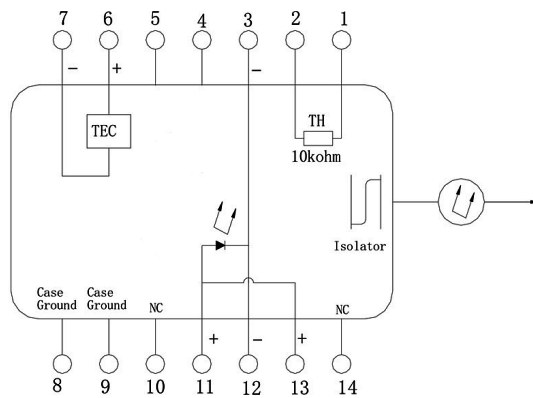


3D

**Package Size:**



**Schematic Diagram (Top View):**



**Pin Connection:**

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

## Absolute Maximum Ratings:

Item	Unit	Min	Typ	Max
Case Temperature	°C	-5	25	70
Chip Temperature	°C	+10	25	40
Operating Current	mA	0	100	150
Forward Voltage	V	0.8	1.2	1.8
TEC Current	A	-	-	1.2
Reverse Voltage (LD)	V	-	-	2.0
Reverse Voltage (PD)	V	-	-	20

## Ordering Info:

PL-DFB-□□□□-☆-A8▽-XX

□□□□: Wavelength

1512: 1512nm

\*\*\*\*\*

1653.7: 1653.7nm

1680: 1680nm

☆ : Output Power

A: 10mW

B: 20mW

▽ : Wavelength Tolerance

1: ±1nm

2: ±2nm

XX: Fiber and Connector Type

SA=SMF-28E+ FC/APC

SP=SMF-28E+ FC/PC

PP=PM Fiber+ FC/PC

PA=PM Fiber+ FC/APC