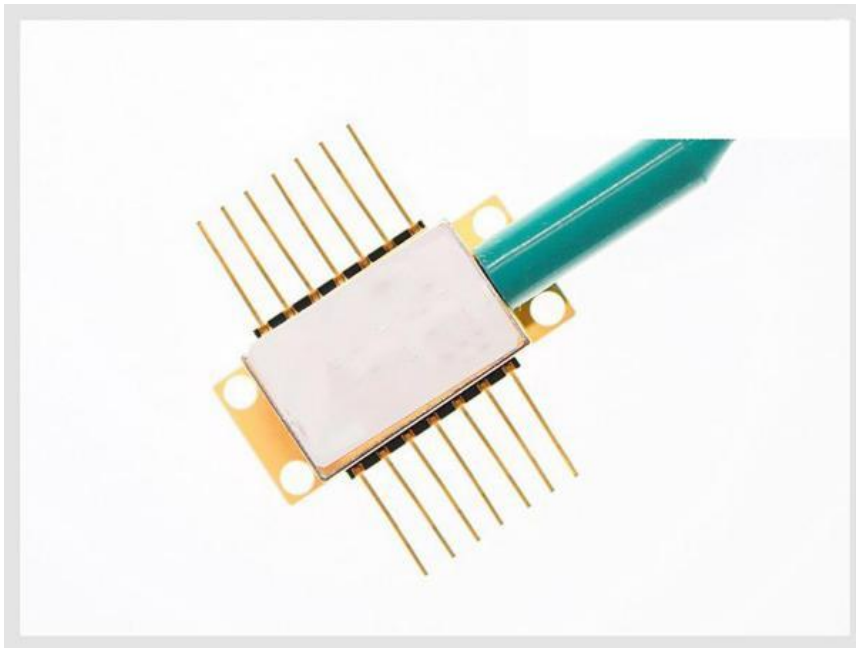


## 1814nm 5mW DFB Laser Diode for NO Sensing



- **Product Description**

The 1814nm DFB laser diode module is a high-cost-performance, high-coherence laser source. The DFB laser diode chip is packaged in an industry-standard 14-pin butterfly package. A thermoelectric cooler (TEC) and a photodetector (PD) are integrated inside the package, with hermetically sealed reliability.



## ● Product features

Narrow linewidth (< 2 MHz); excellent wavelength control and stability;  
industry-standard 14-pin butterfly package; mode-hop-free tuning;  
ultra-high reliability; customizable wavelength available on request

## ● Part Number

MP-DFB-1814-5-A81-14BF-SA

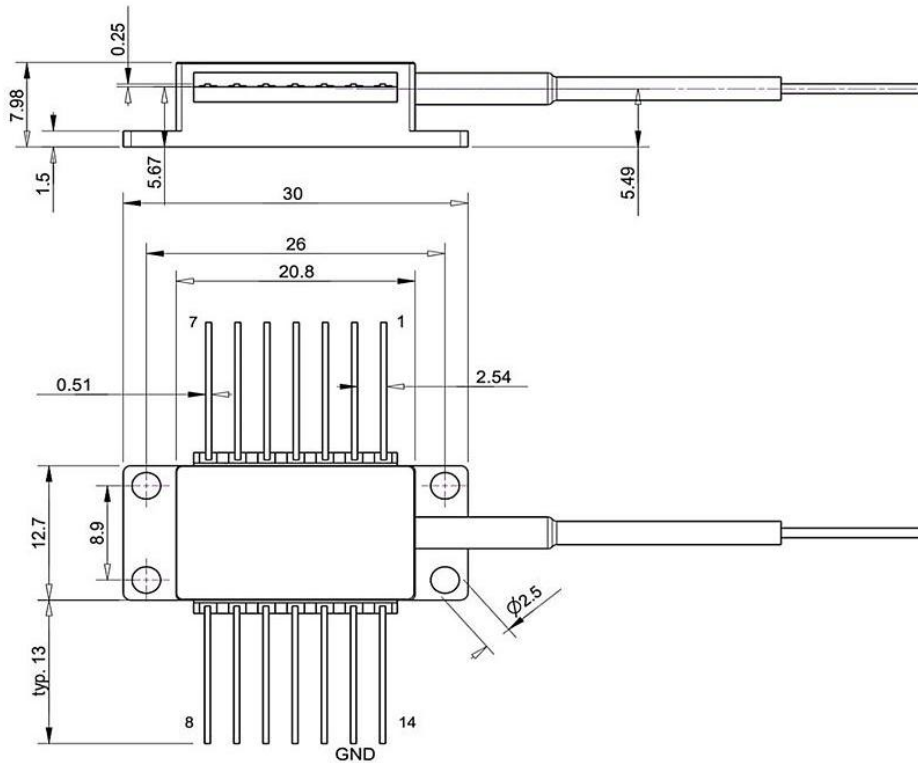
## ● Application area

Tunable Diode Laser Absorption Spectroscopy (TDLAS) | Nitric Oxide (NO)  
Monitoring

## ● Core parameters

Central Wavelength	Output Power
1814nm	5mW

## ● Dimension Drawing



## ● General Parameters

### Detailed Parameters

### Technical Specifications

Parameter	Symbol	Min.	Typical	Max.	Unit
Central Wavelength	$\lambda$	1813	1814	1815	nm
Side Mode Suppression Ratio (SMSR)	SMSR	30	40	-	dB
Threshold Current	$I_{th}$	-	20	30	mA
Operating Current	$I_{op}$	-	80	120	mA
Chip Output Power	Pf		5	8	mW

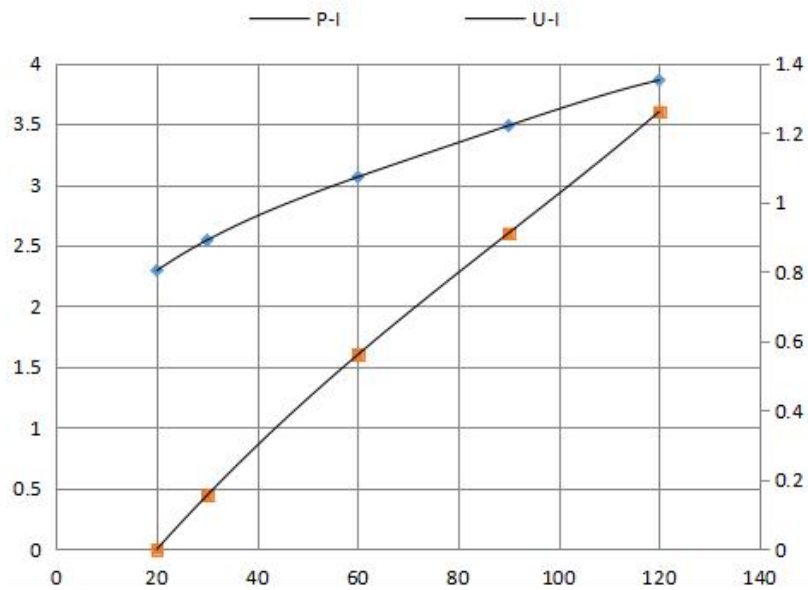


Parameter	Symbol	Min.	Typical	Max.	Unit
Quantum Efficiency	$\eta$	0.08	0.12	-	mW/mA
Current Tuning Coefficient	$\Delta\lambda/\Delta I$	-	0.015	-	nm/mA
Temperature Tuning Coefficient	$\Delta\lambda/\Delta T$	-	0.12	-	nm/K
Forward Voltage	Vf	-	1.3	2	V
Thermistor Resistance	RT	9.5	10	10.5	k $\Omega$
Thermistor Temperature Coefficient	-	-	-4.4	-	%/ $^{\circ}$ C
Fiber Connector	-	FC/APC			

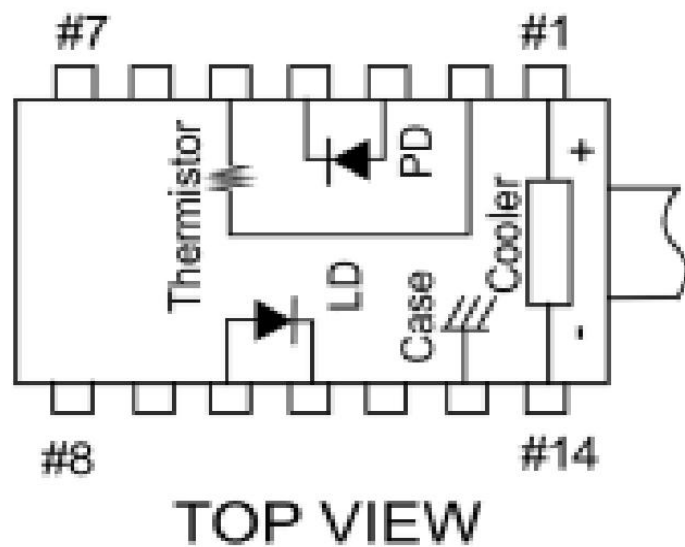
## Spectrum



## L-I Curve



## Pin Definition



PIN#	Definition	PIN#	Definition
1	TEC (+)	8	N/C



2	Thermistor	9	Laser Cathode (-)
3	Detector Anode (-)	10	Laser Anode (+)
4	Detector Cathode (+)	11	N/C
5	Thermistor	12	N/C
6	N/C	13	Case Ground
7	N/C	14	TEC (-)

## Absolute Maximum Ratings

Item	Unit	Min.	Typical	Max.
Case Temperature	° C	-5	25	70
Chip Temperature	° C	+10	25	40
Operating Current	mA	0	100	120
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

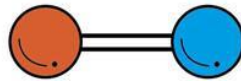


**NO**

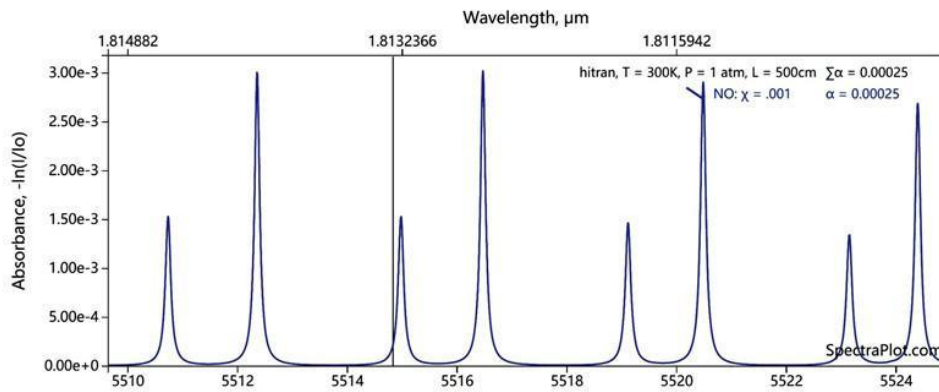
**NO**

● Nitrogen

● Oxygen



**TDLAS: 1814nm**



## Purchase information

MP-DFB-□□□□-☆-A8▽-14BF-XX

□□□□: Wavelength

1512:1512nm

\*\*\*\*\*

1653.7: 1653.7nm

1814: 1814nm

2327: 2327nm

☆: Output Power

A: 5mW

B: 10mW

▽: Wavelength Tolerance



**1:  $\pm 1\text{nm}$**

**2:  $\pm 2\text{nm}$**

**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**