

# 1653.7nm DFB TO-CAN datasheet

P/N : WD12-162-A

## Description

The laser diode module is a cost effective, highly coherent laser source. The Discrete Mode laser diode chip is packaged in an industry standard.



## Features

- Narrow Linewidth < 2MHz
- Excellent wavelength control and stability
- Mode-Hop free tuning
- Excellent reliability
- Customer specific wavelengths available

## Applications

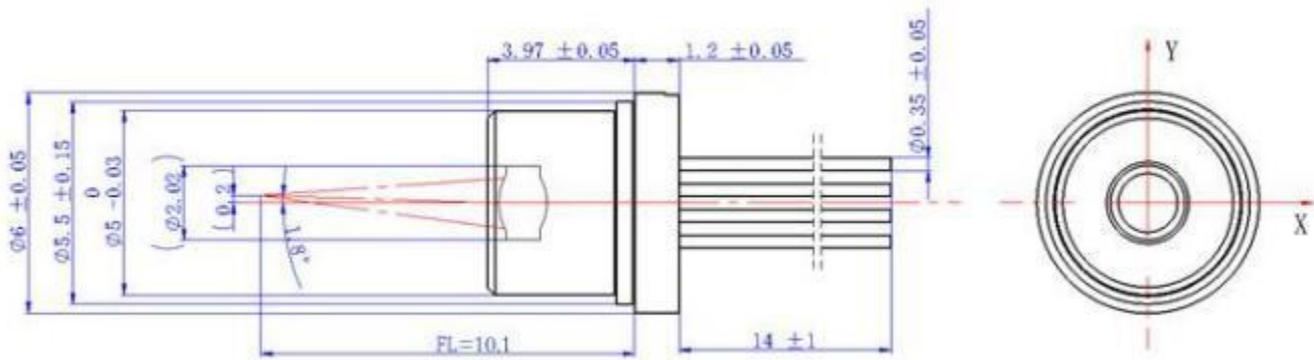
- Tunable diode laser absorption spectroscopy
- CH<sub>4</sub> Monitoring

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

Parameter	Symbol	Value			Units	Note
		Min	Typ.	Max		
Slope efficiency	$\eta$	0.06		0.15	mW/mA	
Threshold Current (BOL)	ITH	15		20	mA	
Laser Forward Voltage	VF			1.8	V	IF = IOP @ TOP
Operating Current	Iop			90	mA	
Threshold Power	PTH			80	$\mu$ W	IF = ITH
Output Power	POP	10		20	mW	IF = IOP @ TOP
Optical isolation	ISO	30			dB	TCASE = 75 °C
Central Wavelength	$\lambda_c$	1652.7	1653.7	1654.7	nm	Customer required CW, at TOP, IOP
Central Wavelength tuning coefficient	$\Delta\lambda/\Delta T$			0.1	nm/°C	
Central Wavelength Drift vs. Case Temperature	$\Delta\lambda_c/\Delta T_c$			0.35	pm/°C	TCASE = -10 to +75 °C
Linewidth (3 dB FWHM)	$\Delta\lambda_{3dB}$			10	MHz	CW, Ibias = IOP
Side-mode Suppression Ratio	SMSR	35			dB	CW, Ibias = IOP

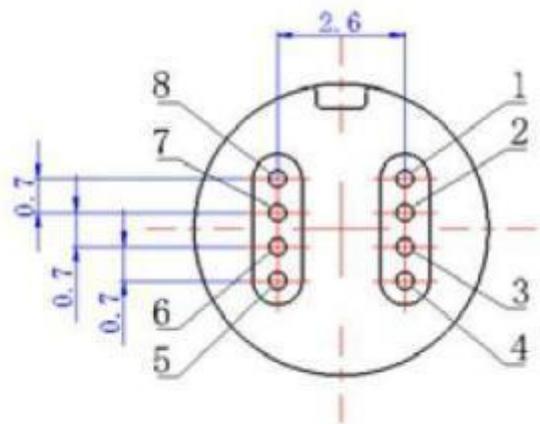
Monitor Dark Current	Id			5	nA	IF = 0, VRmon = 5 V
Thermistor resistance	Rth	9.5	10	10.5	kΩ	T = 25 °C
B constant of Rth	B	3800	3930	4000	K	
Thermistor current		10		200	μA	T = 25 °C
TEC Current	ITEC	---	---	0.5	A	T = 25 °C
TEC Voltage	VTEC	---	---	1.8	V	T = 25 °C
TEC Power	PTEC	---	---	0.5	W	T = 25 °C
TEC Capacity	ΔT	-90	---	50	°C	T = 25 °C

### Mechanical Dimension



### Pin Description

Pin	Standard
1	TEC ( - )
2	THERMISTOR ( + )
3	LD Anode
4	PDA node
5	PD Cathode
6	LD Cathode
7	THERMISTOR ( - )
8	TEC ( + )



### Environment Specification

Item	Unit	Min	Typ	Max
Operation Temperature	°C	-20		60
Storage Temperature	°C	-40		85