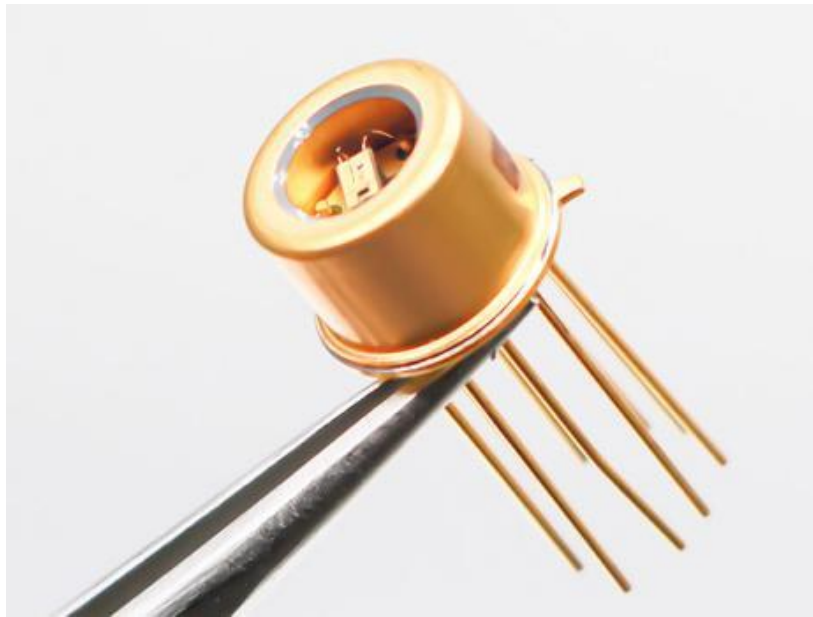


## 763nm 1mW TO8 SM VCSEL laser diode



### ● Product Description

Single-mode VCSEL lasers feature high optical output power, narrow linewidth and excellent consistency, which are highly favored by domestic research customers. Our available in-stock wavelengths include 760 nm and 764 nm. Among them, the 760 nm laser is applied for TDLAS oxygen detection; the 795 nm model is for Rb atomic clock experiments; and the 852 nm model is for Cs atomic cooling.

## ● Product features

Narrow linewidth output; Low power consumption operation; Single-mode fiber coupling; Compact package; High-speed modulation capability

## ● Part Number

MP-VCS-763-1-TO8-SM-TEC

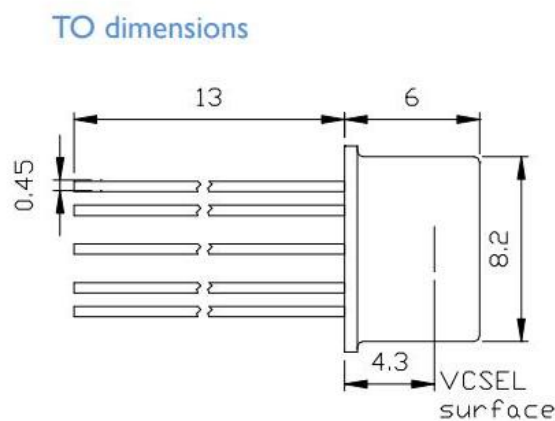
## ● Application area

Gas Sensing | Fiber Optic Gyroscope | Quantum Technology | Biomedical Engineering | Industrial Control

## ● Core parameters

Center Wavelength
763nm

## ● Dimension Drawing



## ● General Parameters

### Technical parameters

Parameters	symbol	Min. value	Typical values	Max. value	unit	Note:
Emission wavelength	$\lambda_R$	762	763	764	nm	T:20°C, $I_{tec}=0, P_{op}=0.3m$ W
Threshold current	$I_{TH}$		0.5		mA	
Output power	$P_{opt}$	0.25			mW	
Threshold voltage	$U_{TH}$		1.8		V	
Laser current	$I_{OP}$			2	mA	$P_{opt} = 0.3 \text{ mW}$
Laser voltage	$U_{OP}$		2		V	$P_{opt} = 0.3 \text{ mW}$
Electro-optical conversion rate	$\eta_{WP}$		12		%	$P_{opt} = 0.3 \text{ mW}$
Slope performance	$\eta_s$		0.3		W/A	
Differential series resistors	$R_s$		250		Oh	$P_{opt} = 0.3 \text{ mW}$
3dB modulation bandwidth	$\nu$ @3dB	0.10			GHz	$P_{opt} = 0.3 \text{ mW}$ (due to ESD



						protection diodes)
Relative noise intensity	RIN		-130	-120	dB/Hz	$P_{opt} = 0.3 \text{ mW @ 1 GHz}$
Wavelength-tuned current			0.6		nm/m A	
Wavelength Tuning Temperature			0.06		nm/K	
Thermal resistance	$R_{thermal}$	3		5	K/mW	
Edge mode suppression		25			dB	$I = 2 \text{ mA}$
Beam divergence	$\theta$	10		25	$^{\circ}$	$P_{opt} = 0.3 \text{ mW, full } 1/e^2 \text{ bandwidth}$
Spectral bandwidth			100		MHz	$P_{opt} = 0.3 \text{ mW}$
TEC current				500	mA	
NTC resistor		9.5	10	10.5	k $\Omega$	T:25 $^{\circ}\text{C}$
NTC temperature dependence			$10/\exp[38 \cdot 92 \cdot (I/298)$		k $\Omega$	TEC current < 200mA



			$k - I/T_{op}]$			
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## Absolute maximum

Storage temperature -40~125°C

TO operating temperature -40~85°C

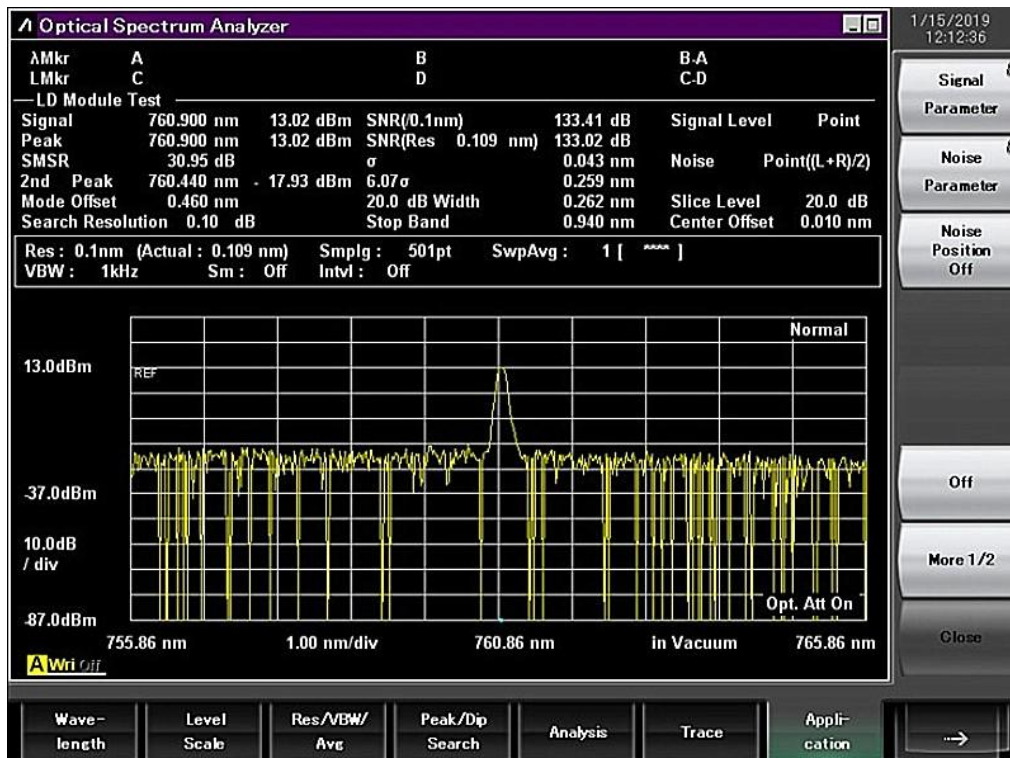
Forward laser current 3mA

VSEL Reverse Voltage 3V

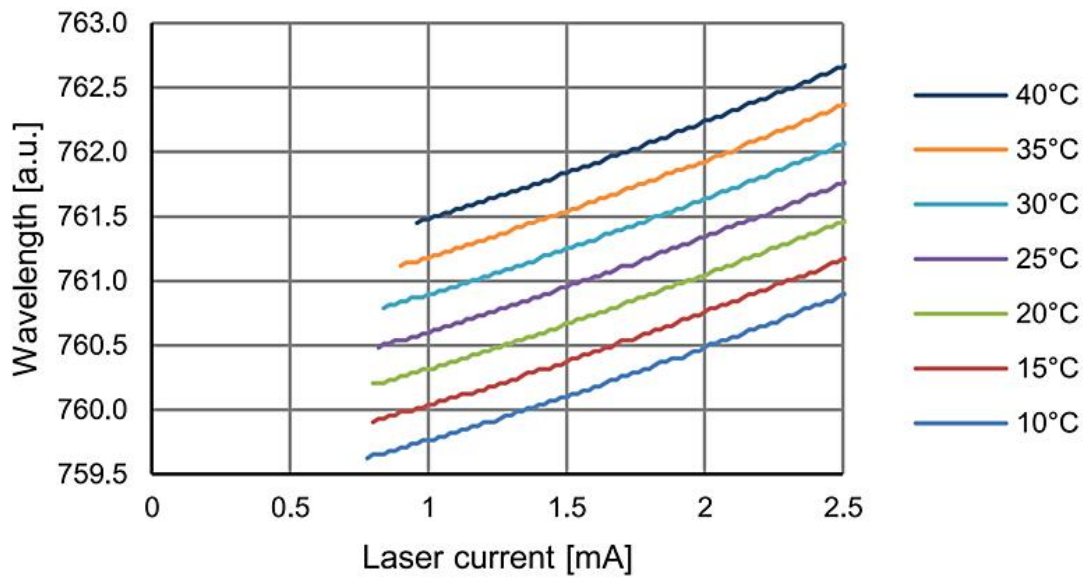
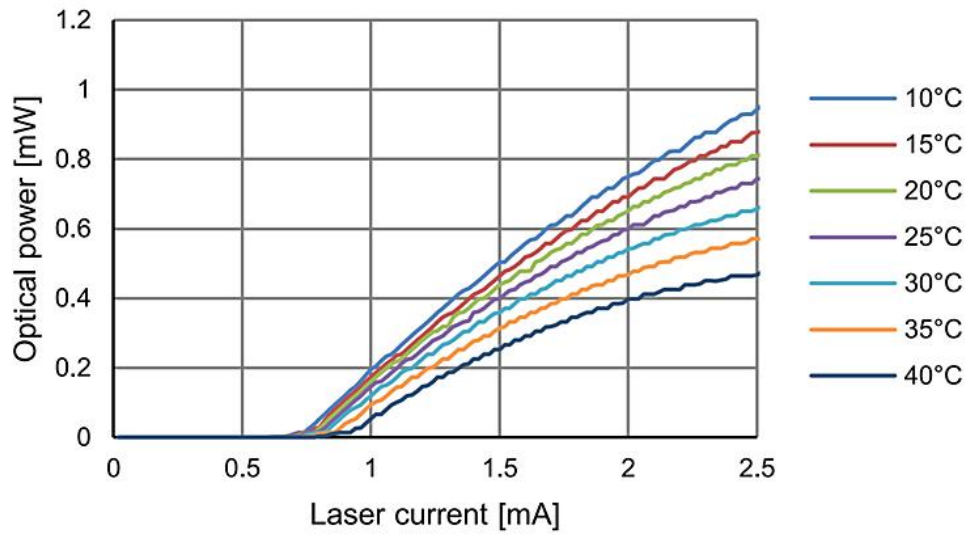
Welding temperature \* 270C°

\*TEC temperature must be below 150°C

## Spectral diagram

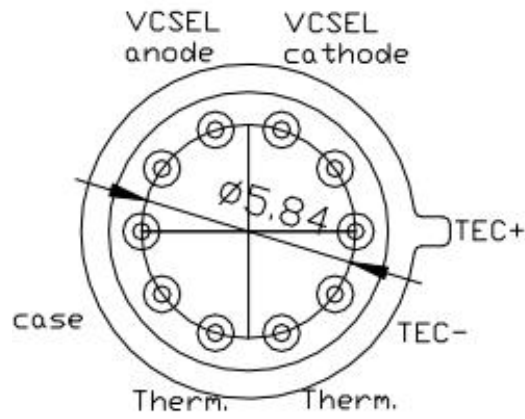


LIV



## Pin definition

### Pin configuration



top view

Unit: mm

