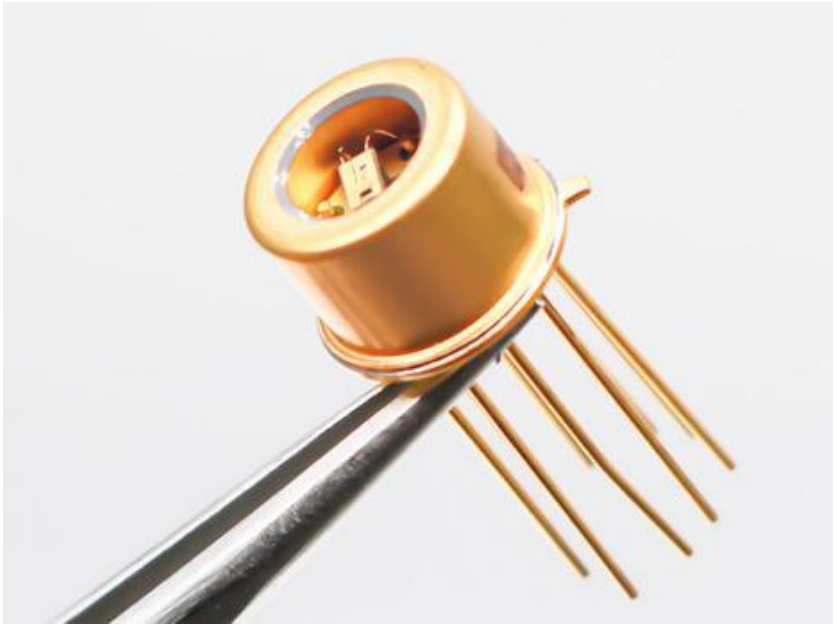
760nm 1mW TO8 SM VCSEL laser diode



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.control, it is a cost-effective option for rubidium atomic spectrum D1 transition research.

Product features

Matched with oxygen absorption lines ; Ultra-narrow spectral linewidth ; Low-power consumption design ; Single-mode fiber coupling ; Industrial-grade reliability

Part Number

MP-VCS-760-1-TO8-SM-TEC

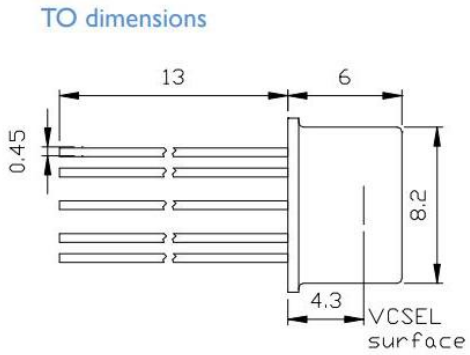
Application area

Medical respiratory monitoring | Industrial safety | Environmental monitoring | Combustion control | Scientific research experiments

Core parameters

Center Wavelength
760nm

Dimension Drawing



General Parameters

Technical parameters

Parameters	symbol	Min. value	Typical values	Max. value	unit	Note:
Emission wavelength	λ_R	Min:759nm,TPY.760nm ,MAX 761nm ,Note:T:20℃, I_{tec}=0 ,P_{op}=0.3mW				
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 mW
Laser voltage	U_{OP}		2		V	P_{opt} = 0.3 mW
Electro-optical conversion rate	η_{WP}		12		%	P_{opt} = 0.3 mW
Slope performance	η_S		0.3		W/A	
Differential series resistors	R_S		250		Oh	P_{opt} = 0.3 mW
3dB modulation bandwidth	v @3dB	0.10			GHz	P_{opt} = 0.3 mW (due to ESD protection

						diodes)
Relative noise intensity	RIN		-130	-120	dB/Hz	P_{opt}= 0.3 mW @ 1 GHz
Wavelength-tuned current			0.6		nm/mA	
Wavelength Tuning Temperature			0.06		nm/K	
Thermal resistance	$R_{thermal}$	3		5	K/mW	
Edge mode suppression		25			dB	I = 2 mA
Beam divergence	θ	10		25	°	P_{opt} = 0.3 mW,full 1/e^2bandwidth
Spectral bandwidth			100		MHz	P_{opt} = 0.3 mW
TEC current				500	mA	
NTC resistor		9.5	10	10.5	kΩ	T:25°C
NTC temperature dependence			10/exp[3892*(I/298k - I/T_{op})]		kΩ	TEC current<200mA

Absolute maximum

Storage temperature -40~125°C

TO operating temperature -40~85°C

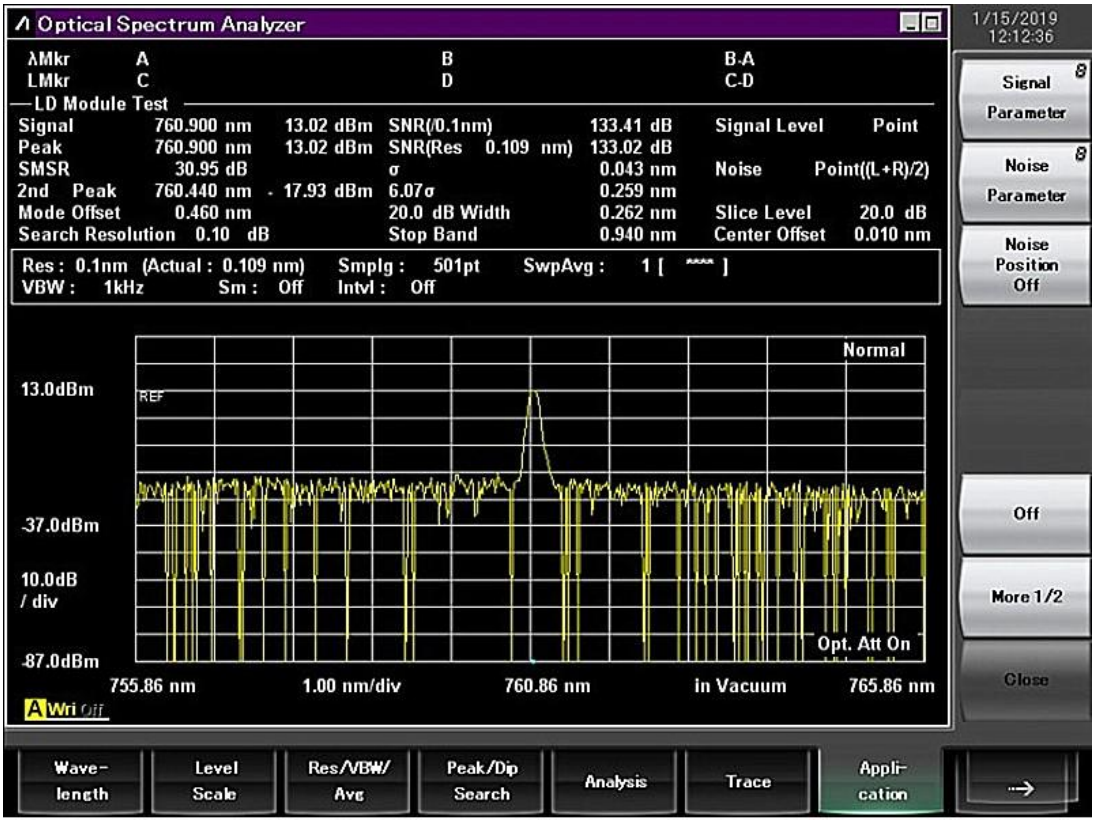
Forward laser current 3mA

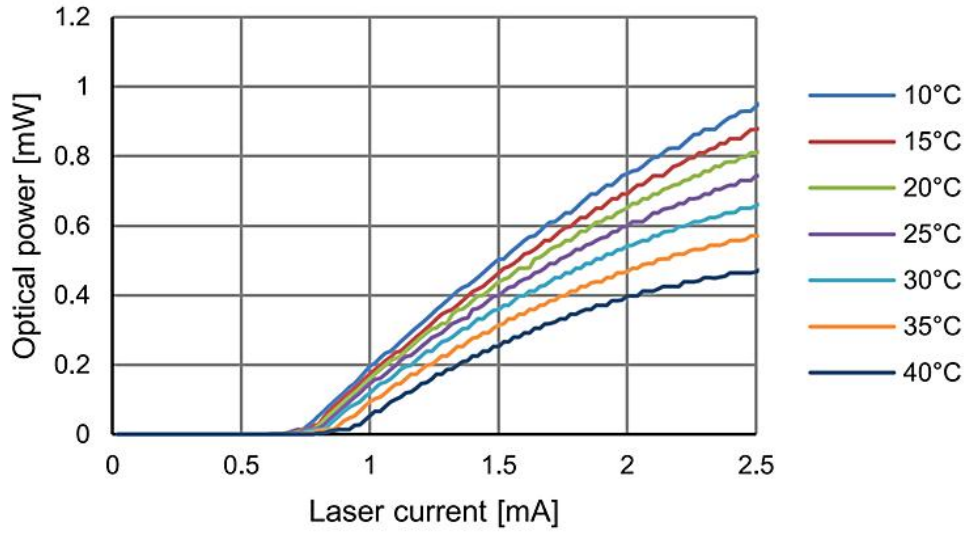
VSEL Reverse Voltage 3V

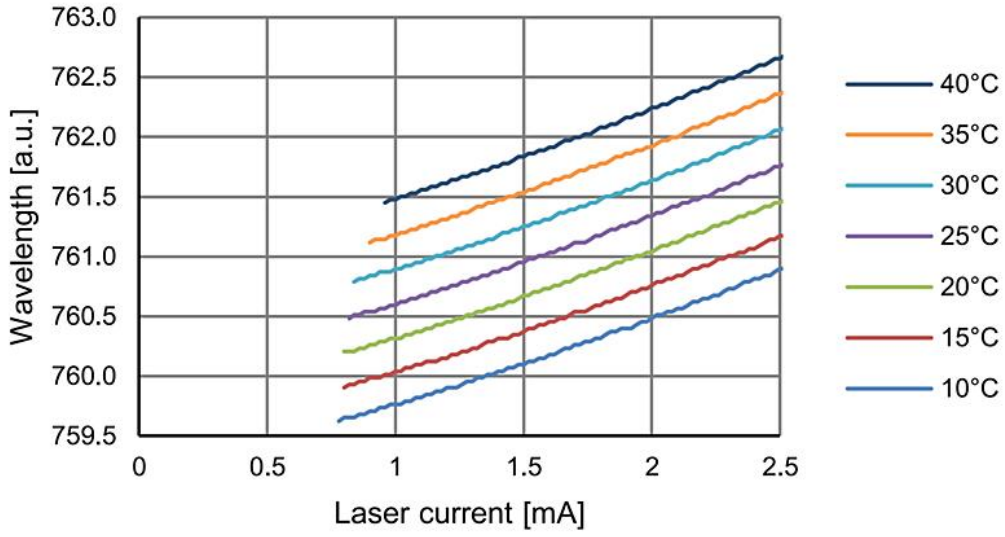
Welding temperature * 270C°

***TEC temperature must be below 150°C**

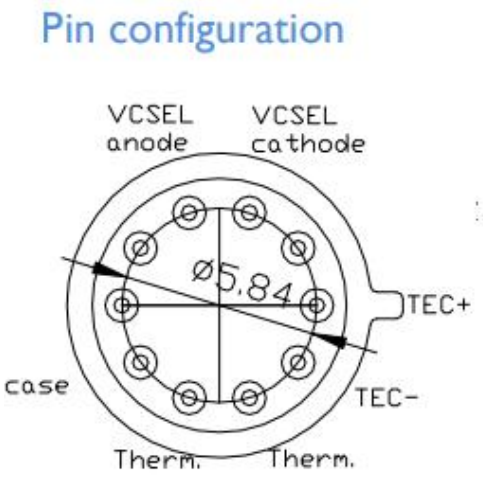
Spectral diagram




Optical power [mW]
1.2
1
0.8
0.6
0.4
0.2
0
0
0.5
1
1.5
2
2.5
Laser current [mA]
10°C
15°C
20°C
25°C
30°C
35°C
40°C


Wavelength [a.u.]
763.0
762.5
762.0
761.5
761.0
760.5
760.0
759.5
0
0.5
1
1.5
2
2.5
Laser current [mA]
40°C
35°C
30°C
25°C
20°C
15°C
10°C

Pin definition



Unit: mm