

1654nm pigtailed VCSEL laser test CH4



- **Product Description**

Idealphotonics' new 1654nm VCSEL laser uses the newly invented high contrast grating layer (HCG). HCG is about 50 times thinner than the traditional distributed Bragg reflector (DBR), but has higher reflectivity and wider spectral width. Our laser has a tuning range of up to 8nm and a tuning frequency of up to 100kHz, making it an ideal choice for testing CH4 gas.



● Product features

TO-56 package, 7Pin、 Single-mode fiber, FC/APC connector、 With TEC,
temperature stable、 CW continuous output power、 Single-mode VCSEL
(~1654nm) fast wavelength tuning、 Built-in optical isolator, isolation
ratio>20dB

● Part Number

MP-VCS-1654-2-SA-TEC

● Application area

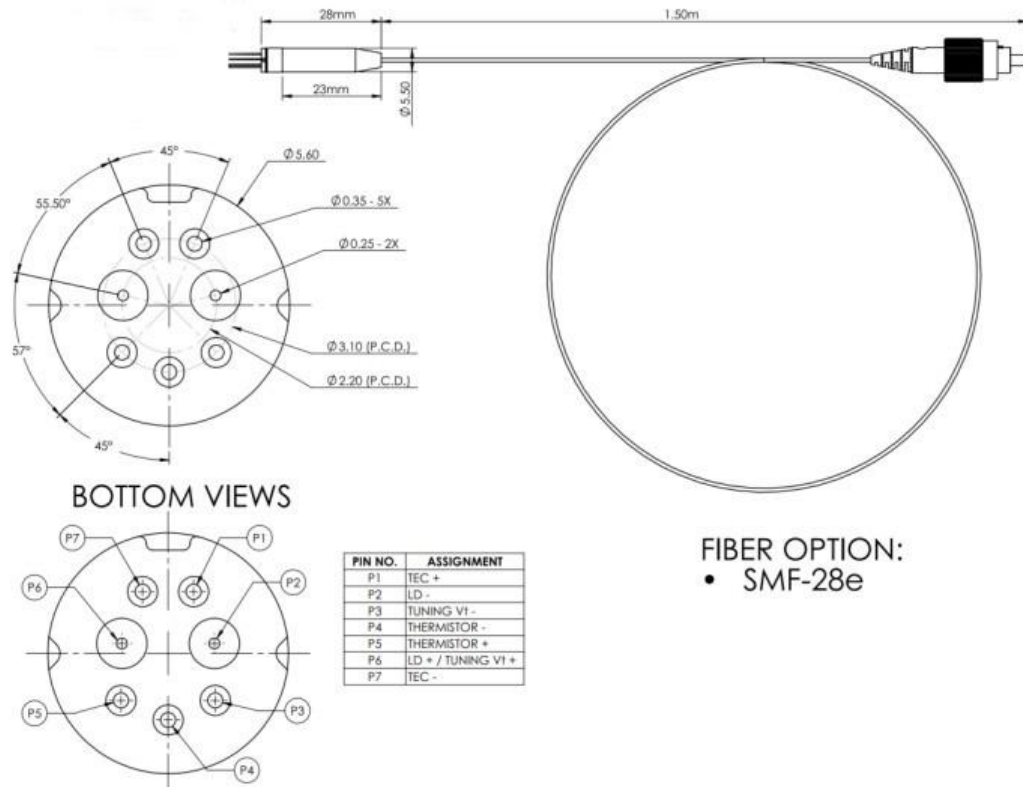
Optical gas sensing (CH4)、 Ranging、 Optical time domain reflectometer、
Optical communication system (U band)

● Core parameters

Wavelength	Linewidth
1654nm	300MHz



● Dimension Drawing



● General Parameters

Parameter

Parameter	Symbol	Value			Unit
		Min.	Typical	Max.	
Optical output peak power @ 25 °	P	-6		3	dBm
Operating current	I _{op}	0	18	25	mA
Operating TEC temperature range	T _{op}	5	20	35	°C
Threshold current	I _{th}		14	16	mA
Laser driver voltage	V _{cc}	0	1.5	2.5	V



Resistance	R_s		20		Ω
Center wavelength	λ		1654		nm
Tuning range	$\Delta\lambda$	4	8		nm
Guaranteed start wavelength at 25 ° C, I _{op} and V _{tune} =0V		1654			nm
Guaranteed stop wavelength at 25 ° C, I _{op} and V _{tune} =max				1653	nm
Maximum tuning response frequency	f_{max}	100			kHz
Side mode suppression ratio	SMSR	30	40		dB
Linewidth (-3 dB FWHM), CW I _{bias} =I _{op}	σ			300	MHz
Relative intensity noise	RIN			-128	dB/Hz
Tuning voltage	V_{tune}	0	Test sheet	Test sheet	V
Tuning current	I_{tune}	0	-	100	μA
TEC voltage	V_{TEC}		0.35	1.5	V
TEC current	I_{TEC}		0.05	0.6	A



Absolute Maximum Parameters

Parameter	Symbol	Value	Unit
Storage temperature	T_{stg}	-20 to +85	°C
Operating temperature	T_c	-5 to +70	°C
VCSEL forward current	I_{LD}	25	mA
VCSEL reverse voltage	V_{LD}	3	V
Soldering temperature	T_{sld}	350 (10 sec.)	°C

Ordering Information

Name: 1654nm pigtailed VCSEL laser

Model: MP-VCSEL-1654nm-3-SA

Operating wavelength: 1654nm

Output power: 3dB

Fiber type: SMF-28e

Connector: FC/APC