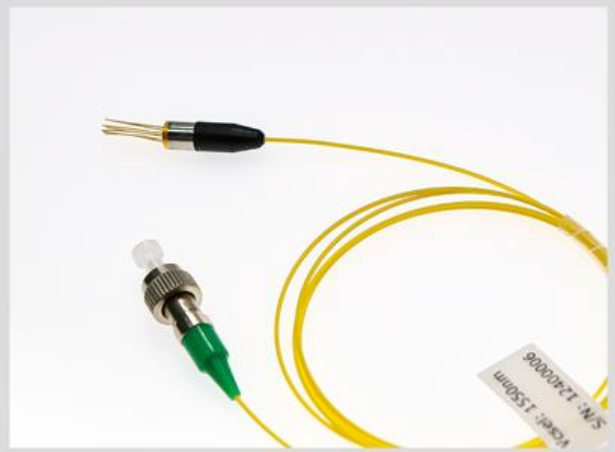
1550nm single mode VCSEL laser (without TEC)



Product Description

PL-VCSEL-1550-0-A81-CPSA 1550nm VCSEL is a vertical emitting MOVPE grown GaAsP/AlGaAs single mode diode laser. Wavelength tuning can be achieved by laser current and temperature tuning. Built-in TEC and PD. Our 1550 nm single mode VCSEL is designed for high speed, high performance communication applications.

Part Number

PL-VCSEL-1550-0-A81-CPSA

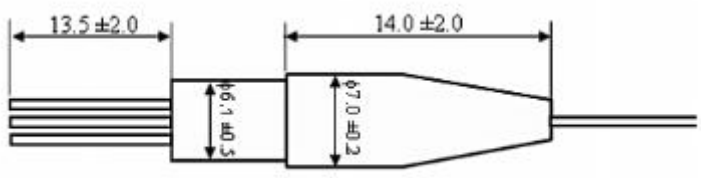
Product features

Low temperature dependence of electrical and optical properties、 Data rates from OC-3 to OC-48、 VCSEL、 Internal TEC and thermistor, ESD protection、 Narrow linewidth、 2 nm tunability

Application area

Long-distance access network、 Local area network、 Gigabit Ethernet

Dimensional Drawing



Parameters

Technical parameters:

Conditions: TOP = 20° C, IO P = 10.0 mA unless otherwise specified (TOP = chip backside temperature, controlled by TEC)

Parameters	Symbol	Min.	Typ.	Max.	Unit	Note
wavelength	λ R	1530-1570nm				
threshold current	ITH		2		mA	
output power	Popt	0.3	0.5	0.7	mW	
threshold voltage	UTH		1.8		V	
operating current	IOP			15	mA	Popt = 0.5mW
operating voltage	UOP		3		V	Popt = 0.5 mW
electric-optical conversion efficiency	η WP		12		%	Popt = 0.5 mW
slope efficiency	η S		0.3		W/A	
rise/fall time	Tr/Tf		90/120		Psec	
differential series resistance	RS		100	200	Ω	Popt = 0.5 mW
3dB modulation bandwidth	ν 3dB	0.10			GHz	Popt = 0.5 mW Due to ESD protection diode
Relative intensity noise	RIN		-130	-120	dB/Hz	Popt = 0.3 mW @ 1 GHz
Wavelength tuning current coefficient			0.6		nm/mA	

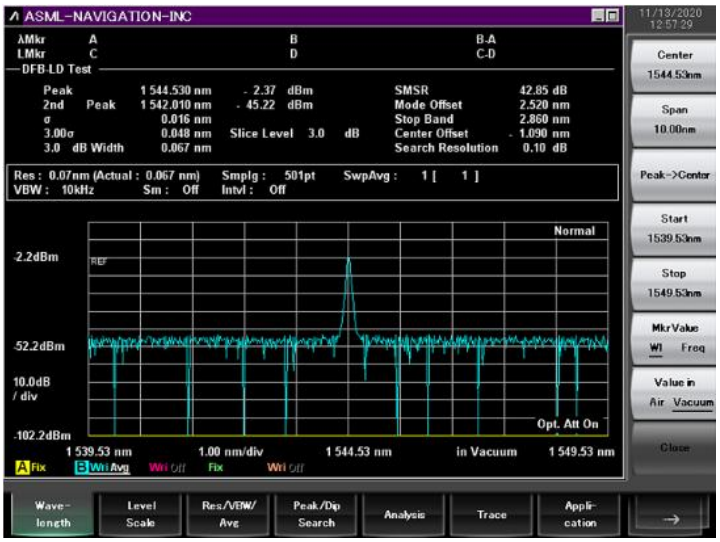
Wavelength tuning temperature coefficient			0.06		nm/K	
Thermistor (VCSEL chip)	Rthermal	3		5	K/mW	
SMSR		35			dB	I = 2 mA
Beam divergence angle	θ	10		25	°	Popt = 0.5mW, full width 1/e2
Line width			100		MHz	Popt = 0.5 mW

Tec Characteristics	Symbol	Min.	Typ.	Max.	Unit
Tec Current	mA	-150(Heating)		+300(Cooling)	Proper Heart Sink Required
NTC Thermistor	KΩ	9.5	10.0	10.5	T=25℃@10 KΩ
NTC Thermistor	KΩ	10/exp{3892-(1/289K-I/TOP)}			

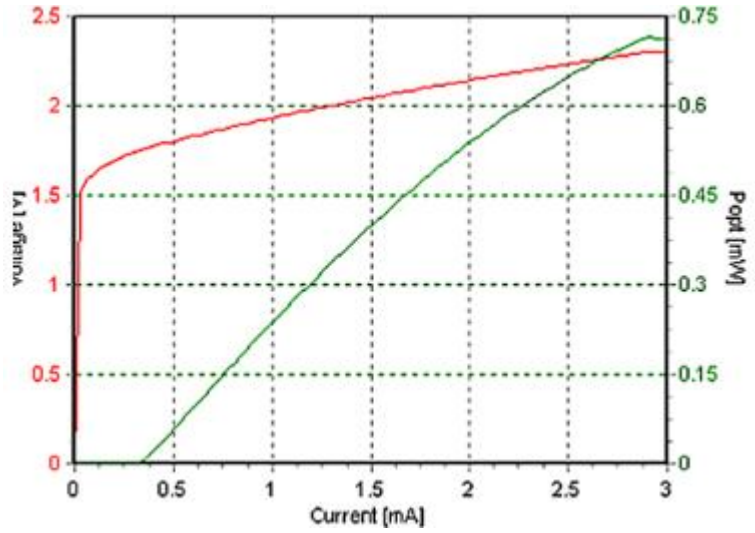
Absolute Maximum Parameters:

Parameters	Symbol	Min.	Typ.	Max.
Storage temperature	℃	-40	25	125
Chip temperature	℃	+10	25	40
Operating current	mA	0	3.0	15.0
Forward voltage	V	0.8	1.2	1.8
TEC current	mA	-150	-	+300
Soldering temperature*	℃	100	130	260
Power consumption	mw	-	-	5

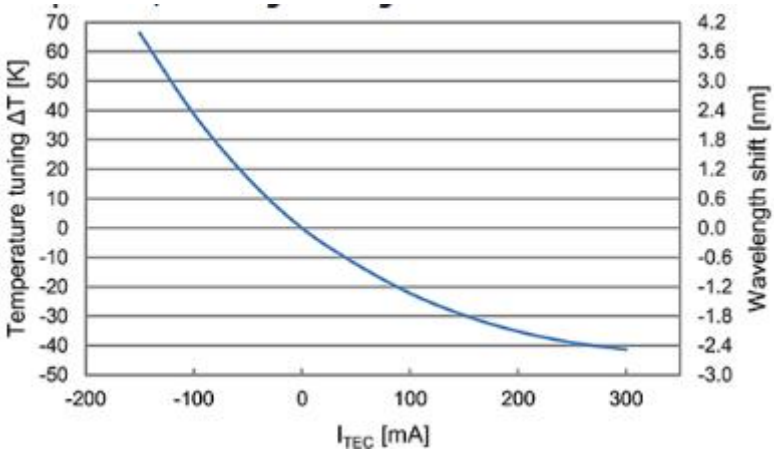
Spectrum:



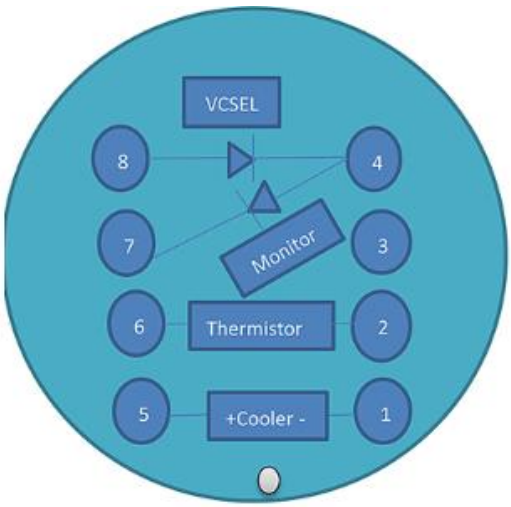
L-I Curve(T@25°C):



Temperature/wavelength tuning curve via TEC current:



Pin definition:



1	Thermoelectric Cooler (-)	5	Thermoelectric Cooler (+)
2	Thermistor	6	Thermistor
3	N/C	7	PD Monitor Cathode (+)
4	VCSEL Cathode (–)/PD Monitor Anode (-)	8	VCSELAnode (+)

Order Info:
PL-VCSEL-□□□□-☆-A8▽-XXXX

□□□□：Wavelength

0760:760nm
0850-850nm
*****

1550：1550nm

☆ ：TEC

0：Without TEC

1：With TEC

▽：Wavelength Tolerance

1：±0.5nm

2：±1.5nm

XXXX: Fiber and Connector
Type FS=Free Space
BFSA=Butterfly Package with SMF-28E+ FC/APC
CPSA=Coaxial Package with SMF-28E+ FC/APC
BFSP=Butterfly Package with SMF-28E+ FC/PC
CPSP=Coaxial Package with SMF-28E+ FC/PC
BFPP=PM Fiber+ FC/PC
BFPA=PM Fiber+ FC/APC