

■ Descriptions

The AVL-85013CL is an 850-nm Vertical Cavity Surface Emitting Laser (VCSEL) operating in single-transverse and single-longitudinal mode. With unique implantation process, AOC's SM VCSEL shows the performance advantages of high single-mode output power (>2.0mW) and high-speed modulation.

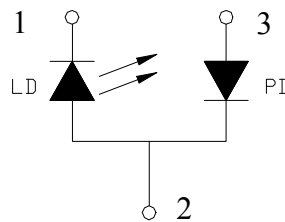
■ Features

- Signal mode operation
- TO-46 package
- Low I_{th}, High impedance
- Utilize unique implantation process.
- Side mode suppression ratio of 20 or higher.
- Symmetric emission profile.
- High output power.

■ Applications

- High speed telecommunication
- Position sensing.
- Free space optical communication

■ Pin connection



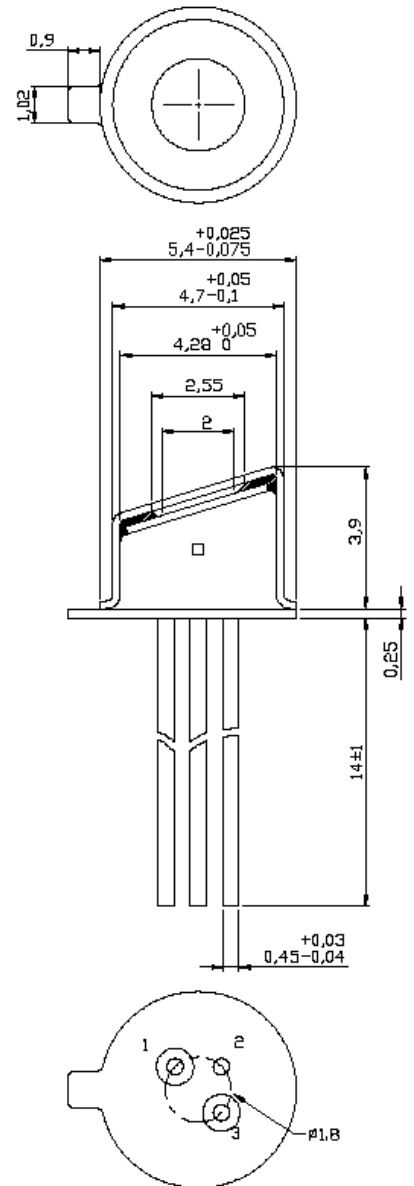
■ Absolute Maximum Ratings *1

Parameter	Symbol	Condition	Rating	Unit
Light output power	P _o	CW	2	mW
Forward current	I _f	CW	8	mA
Reverse voltage	V _r	-	8	V
Operation temperature	T _{op}	-	0~70	°C
Storage temperature	T _{store}	-	-40~+100	°C

■ Electrical and Optical Characteristics (T_c=25 °C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Threshold current	I _{th}	-	1.8	3.0	mA	
Operating current	I _{op}	-	3.0	4.0	mA	P _o =1mW
Operating voltage	V _{op}	1.9	2.2	2.4	V	P _o =1mW
Reverse voltage	V _r	-	8.0	-	V	I _r =10uA
Monitor current	I _m	30	40	-	uA	P _o =1mW
Minimum SM output power	P _{peak}	2.0	2.5	-	mW	
Peak wavelength	λ _p	840	850	860	nm	P _o =1mW
Wavelength Temp. coeff.	Δλ/ΔT	-	0.06	-	nm/°C	
Slope Efficiency	η	0.5	0.6	0.8	mW/mA	P _o =0.2-1mW
Beam divergence	θ	6	7	10	Degree	FWHM
Series resistance	Ω	-	100	150	Ohm	
Side Mode Suppression Ratio	SMSR	20	30	-	dB	P _o =1mW
Spectral Width	Δλ	-	-	0.1	nm	P _o =1mW

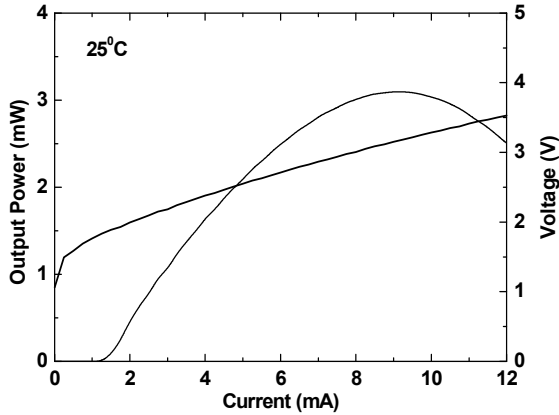
*1 Lasers shall be used within the absolute maximum ratings. Exceeding these limits may damage the laser chip and this doesn't mean



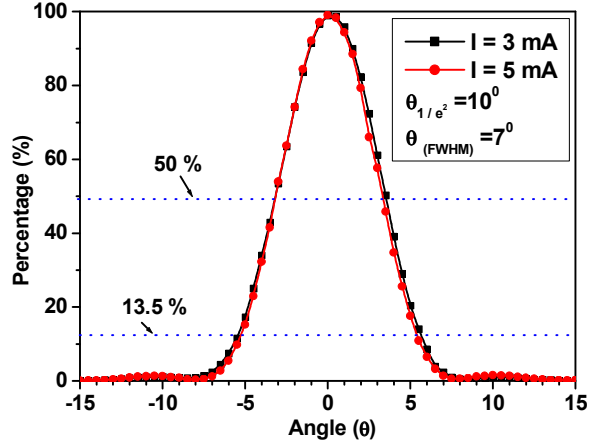
the guarantee of its lifetime.

Typical Curve (25°C)

L-I-V



Far-field Angle



Precautions

Care should be taken for the following points when using this product.

- Do not operate the device above maximum ratings. Doing so may cause unexpected and permanent damage to the device.
- Take precautions to avoid electrostatic discharge and/or momentary power spikes. A change in the characteristics of the laser or premature failure may result.
- Proper heat sinking of the device assures stability and lifetime. Always ensure that maximum operating temperatures are not exceeded.
- Observing visible or invisible laser beams with the human eye directly, or indirectly, can cause permanent damage. Use a camera to observe the laser.
- Specifications are subject to change without notice. Ensure that you have the latest specification by contacting us prior to purchase or use of the product.