LASERMATE GROUP, INC.
THE FRIEND OF LASERS

Model No. VCC-85A1G-OSL

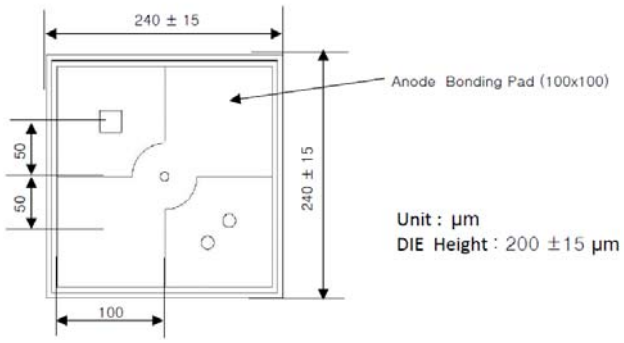
Features:

- 850nm VCSEL chip
- Single transverse mode and longitude mode
- Size: 240x240μm
- Low operating current
- High reliability
- -10 to 70 °C operating temperature

Applications:

- Safety sensor
- Consumer electronics
- Laser mouse
- Laser Printer
- Engine management system

Dimensions:



Absolute Maximum Ratings

Parameter	Rating
Storage Temperature	-40 to 85 °C
Operating Temperature	-10 to 70 °C
Continuous Forward Current	6mA
Continuous Reverse Voltage	5V (@10μA)

Electro-Optics Characteristics (Ta=25°C unless otherwise stated)

Parameters	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Threshold Current	I_{th}		2	3	mA	CW
I_{th} Temperature Variation	ΔI_{th}		1.5		mA	T_a = -10 to 70 °C
Slope Efficiency	η	0.2	0.35		W/A	I_f = 3.5mA
η Temperature Variation	$\Delta\eta / \Delta T$		-0.5		%/°C	T_a = -10 to 70 °C at 3.5mA
Optical Output Power	P_o	0.25	0.5		mW	I_f = 3.5mA
Peak Wavelength	λ_P	840	850	860	nm	I_f = 3.5mA
λ_P Temperature Coefficient	$\Delta\lambda / \Delta T$		0.06		nm/°C	T_a = -10 to 70 °C at 3.5mA
Beam Divergence	Θ	6	8		degree	Po= 0.5mW, (FWHM)
Operating Voltage	V_f		1.8	2.1	V	I_f = 3.5mA
Breakdown Voltage	V_b		-10		V	
Dynamic Resistance	R_d		70	90	Ohm	I_f = 3.5mA
Side Mode Suppression Ratio	SMSR	15	30		dB	I_f = 3.5mA
			10			I_f = 4mA

Note: * The specifications are subject to change without notice.

**The inherent design of this component causes it to be sensitive to electrostatic discharge (ESD). To prevent ESD induced damage and/or degradation to equipment, take normal ESD precautions when handling this product.

***The VCSEL is a class IIIb laser and should be treated as a potential eye hazard. Due to the size of the component, the applicable warning logotype, aperture label, and certification / identification label cannot be placed on the component itself.

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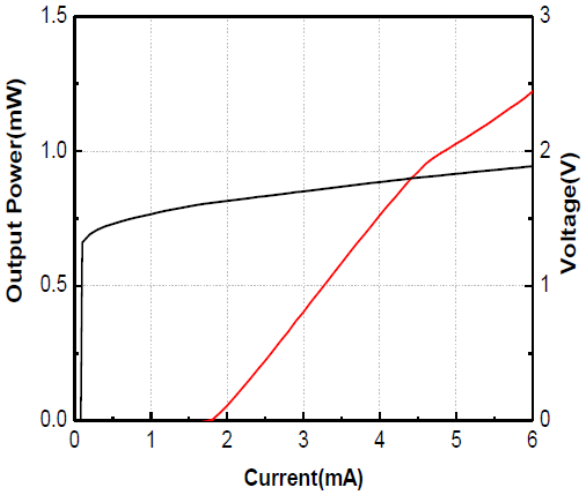
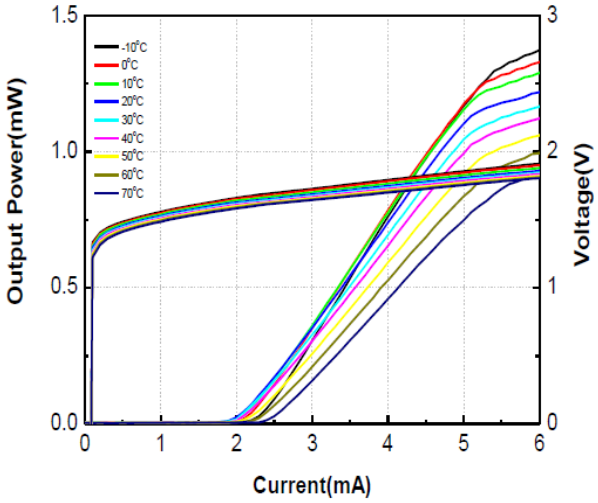
Typical Characteristics Curves

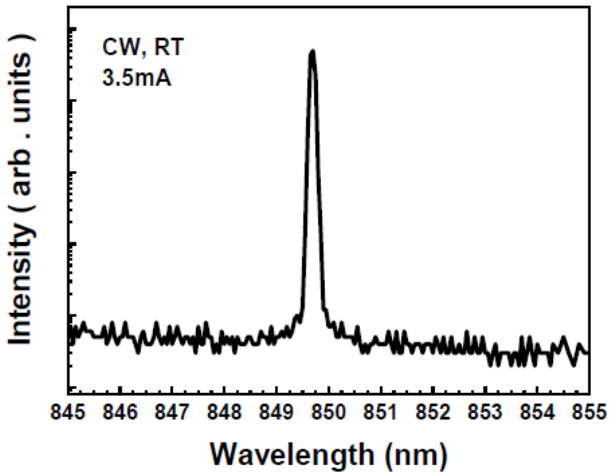
LIV Curve



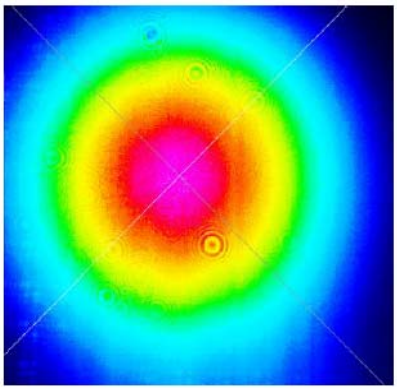
LIV vs. Temperature



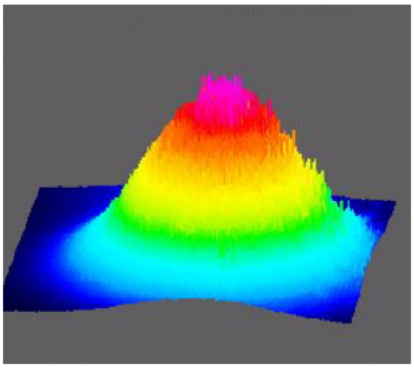
EL Spectrum



FFP



2D, 3.5mA



3D, 3.5mA

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