



# 850nm 8mW Single Mode VCSEL Chip

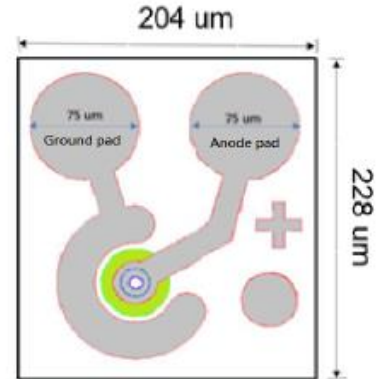
Part No. VCC-85A8H

## Features

- 850nm single emitter VCSEL chip
- Single longitudinal mode
- Power Conversion Efficiency (PCE): 31%
- Typical 8mW output power at 11.2mA
- Chip size: 204um x 228um
- Chip thickness: 150um

## Applications

- Proximity sensor
- Consumer electronics
- Active optical cables
- Medical application
- Range finder sensor
- Modulation and width >3GHz



## Specifications

Absolute Maximum Ratings					
Parameters	Symbol	Rating	Unit	Conditions	
Case Operating Temperature	Top	-25 to 60	°C		
Storage Temperature	Tstg	-40 to 85	°C		
Reflow Soldering Temperature	Tsol	320	°C	10 seconds	
Reverse Voltage	Vr	5	V		
Maximum Continuous Current	I <sub>max</sub>	20	mA		
ESD Exposure (Human Body) Model	ESD	2K	V		

Notes:

- Stresses greater than those listed under “Absolute Maximum Ratings” may cause permanent damage to the device. This is a stress rating only and functional operation of the device at these or other conditions above those indicated in the operations section for expanded periods of time may affect reliability.
- In its maximum rating diode laser operation could damage its performance or cause potential safety hazard such as equipment failure.
- Electrostatic discharge is the main reason for laser fault of the diode. Take effective precautions against ESD. When dealing with laser diodes, use wrist strap, grounding work surface and strict antistatic technology.

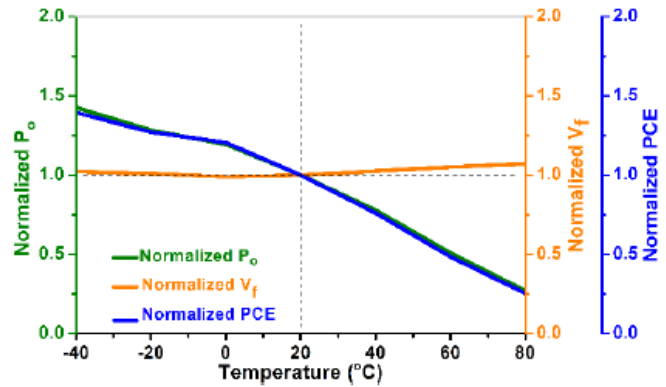
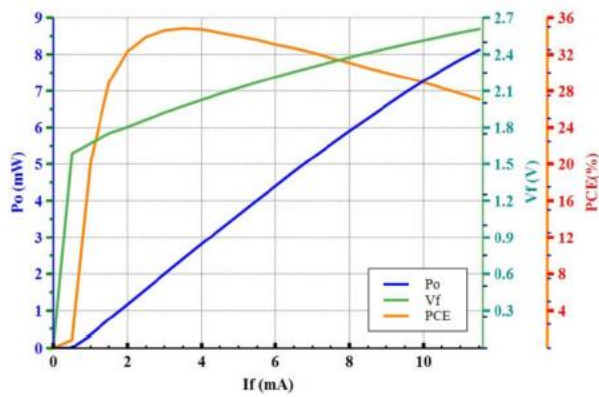
Electro-Optical Characteristics (T <sub>op</sub> =25°C, CW mode)						
Parameters	Symbol	Min.	Typ.	Max.	Unit	Conditions
Optical Output Power	P <sub>o</sub>	-	8	10	mW	I <sub>F</sub> =11.2mA
Threshold Current	I <sub>th</sub>	-	0.5	-	mA	
Power Conversion Efficiency	PCE	-	27.5	-	%	I <sub>F</sub> =11.2mA
Slope Efficiency	η	-	0.6	-	mW/mA	P <sub>o</sub> =8mW
Peak Wavelength	λ <sub>P</sub>	840	850	860	nm	I <sub>F</sub> =11.2mA
Forward Voltage	V <sub>F</sub>	-	2.5	2.7	V	I <sub>F</sub> =11.2mA
Series Resistance	R <sub>S</sub>	-	60	-	Ohm	I <sub>F</sub> =11.2mA
Wavelength Temperature Drift	Δλ <sub>P</sub> / ΔT	-	0.07	-	nm/°C	I <sub>F</sub> =11.2mA
Beam Divergence	FWHM <sub>B</sub>	-	19	-	deg	
Emission Area			70x70		um <sup>2</sup>	
Number of Emission Aperture		-	1	-		

Note: Electro-optical characteristic with a package or diffuser would require further evaluation. Values are based on limited sample size and estimated values.

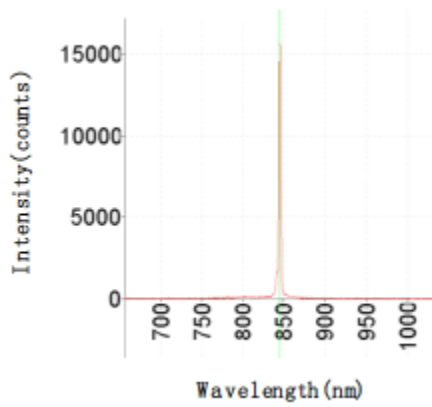


### Typical Characteristics

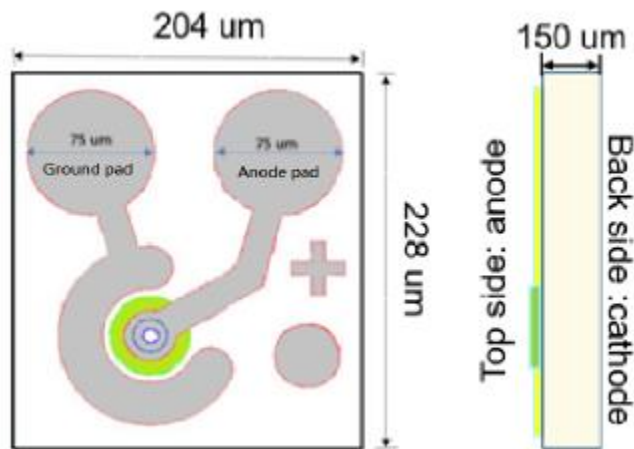
#### LIV Graph



#### Typical Spectral Width



#### Outline Diagram (unit: um)



Note: Specifications are subject to change without notice.