



850nm 4mW VCSEL Chip

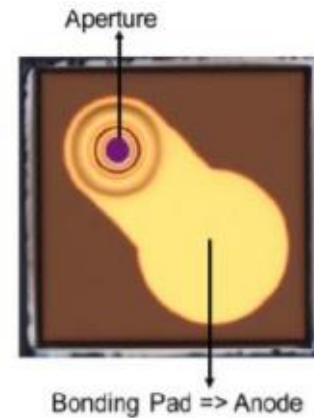
Part No. VCC-85A4H

Features

- 850nm VCSEL chip
- Typical 4mW output power at 9mA
- Chip size: 210 x 210 ± 15 μm
- Chip thickness: 150 ± 15 μm
- Electrode side: Gold alloy on both anode P (emission side) and cathode N (backside)

Applications

- Sensor light source
- Consumer electronics



Specifications

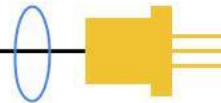
Absolute Maximum Ratings				
Parameters	Symbol	Rating	Unit	Conditions
Storage Temperature	T _{stg}	-40 to 150	°C	
Operating Temperature	T _{op}	-20 to 85	°C	
Junction Temperature	T _j	≤ 80	°C	
Forward Current	I _f	12	mA	

Note: The maximum CW laser current in the Absolute Maximum Ratings is valid for the operating temperature noted at the table above. Stresses beyond those listed under Absolute Maximum Ratings may cause permanent damage to the device.

Electro-Optical Characteristics (T _a =25°C unless otherwise stated)						
Parameters	Symbol	Min.	Typ.	Max.	Unit	Conditions
Threshold Current	I _{th}	1		2	mA	
Slope Efficiency	η		0.5		W/A	I _f =9mA
Optical Output Power	P _o	3.5	4	5.5	mW	I _f =9mA
Center Wavelength	λ _c	840	850	860	nm	I _f =9mA
Beam Divergence	Θ		36	39	°	I _f =9mA (Full Width 1/e ²)
Forward Voltage	V _f	2.1	2.2	2.4	V	I _f =9mA
Variation in Output Power	Δ P _o		-0.4		%/°C	T _a =25 to 85°C
ESD Threshold	V _{ESD}		200		V	Human body mode / 3 pulse

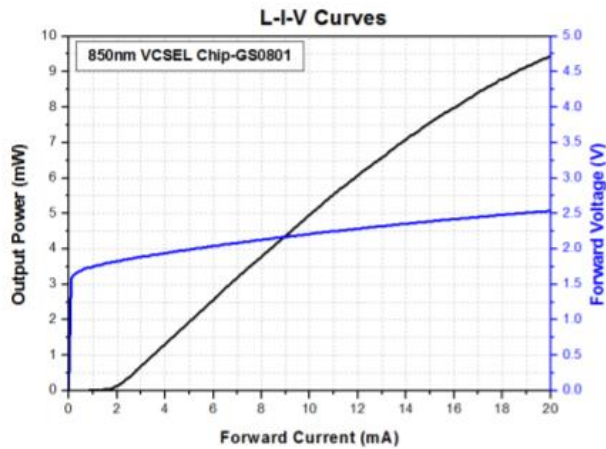
Notes:

- Forward Voltage (V_f) measurement allowance is ±0.1V.
- Center Wavelength (λ_c) measurement allowance is ±1.5nm.
- Others measurement allowance is ±10%.
- All parameters except mentioned are measured at I_f=9mA, T_a=25°C, CW.

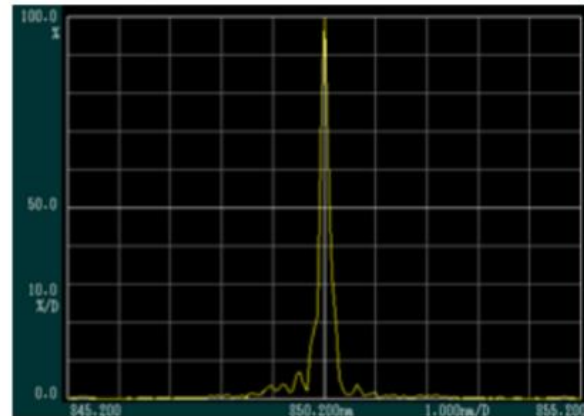


Typical Characteristics

LIV Curves

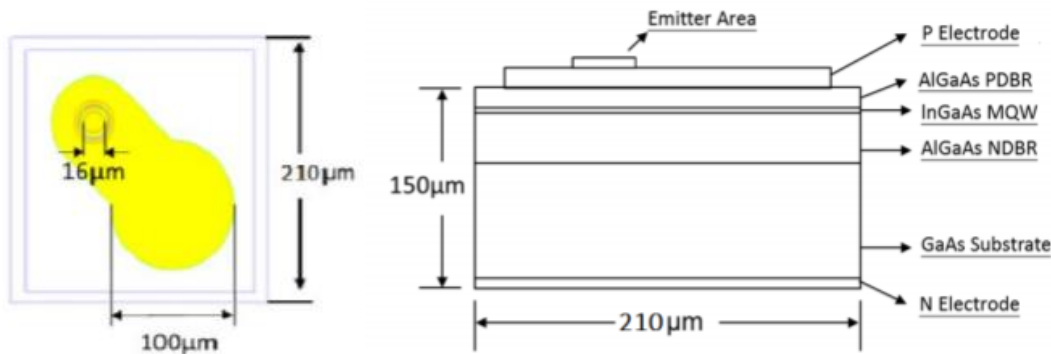


Emission Spectrum (@ 9mA)



Note: Data measure at ambient temperature 25°C.

Outline Dimensions (unit: μm)



Note: Chip size includes die saw street.

Specification	Min.	Typ.	Max.
Chip width	195	210	210
Chip length	195	210	225
Chip thickness	135	150	165
Bond pad width	-	100	-

Additional Notes

- 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.
- Specifications are subject to change without notice.