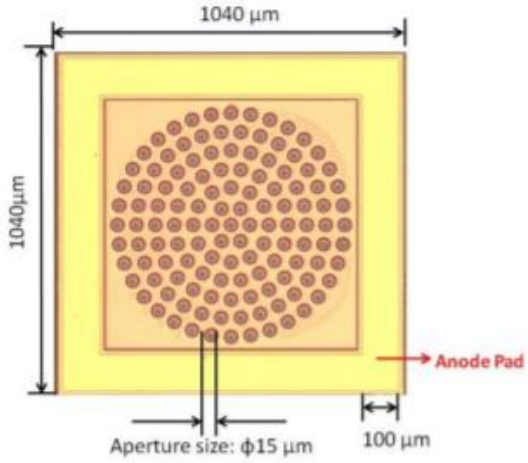
810nm 300mW VCSEL Chip

Part No. VCC-81A300H

Features

- 810nm mult emitter VCSEL chip
- Typical 300mW output power at 600mA
- Chip size: 1040 x 1040 ± 15 um
- Chip thickness: 150 ± 15 um
- Electrode side: Gold alloy on both anode P (emission side) and cathode N (backside)



Applications

- Iris recognition
- Sensor light source
- Consumer electronics
- Security camera light source

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	
Maximum Package SMT Solder reflow temperature	-	260	°C	10 seconds
Forward Current	I_f	600	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}		150		mA	
Slope Efficiency	η		0.6		W/A	I_f=600mA
Optical Output Power	P_o	300	350		mW	I_f=600mA
Center Wavelength	λ_C	800	810	820	nm	I_f=600mA
Beam Divergence	Θ		25		°	I_f=600mA (FWHM)
Forward Voltage	V_f	1.8	2.0	2.4	V	I_f=600mA

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=600mA, T_a=25°C, CW.

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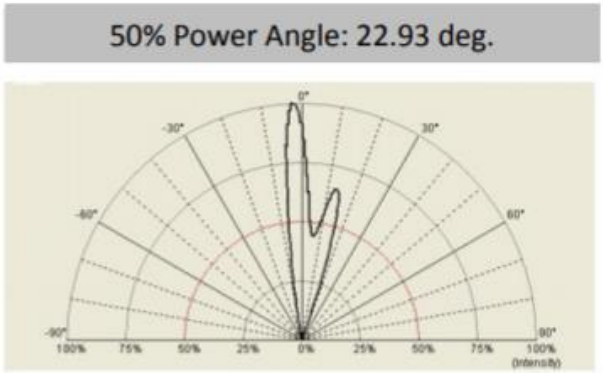
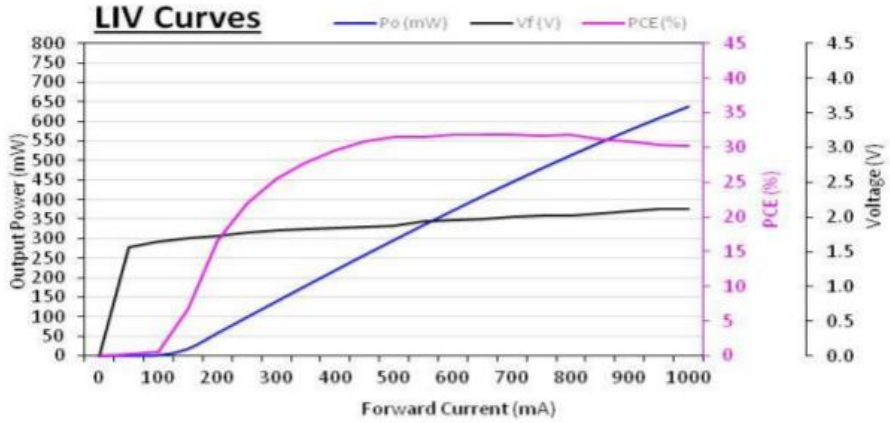
Typical Characteristics

Beam Divergence

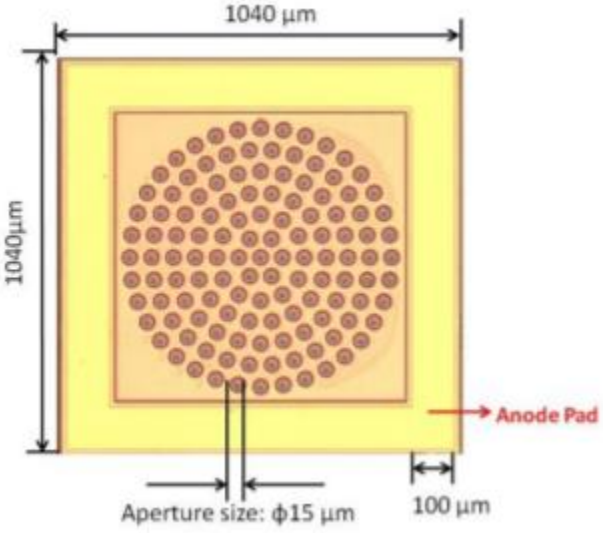


LIV Graph at 25ºC



Note: Data measure at ambient temperature 25ºC.

Outline Dimensions (unit: μm)



Specification	Min.	Typ.	Max.
Number of emitters		127	
Chip width	1025	1040	1055
Chip length	1025	1040	1055
Chip thickness	135	150	165
Emitter surface area diameter opening	-	15	-
Bond pad width	-	100	-

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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.

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