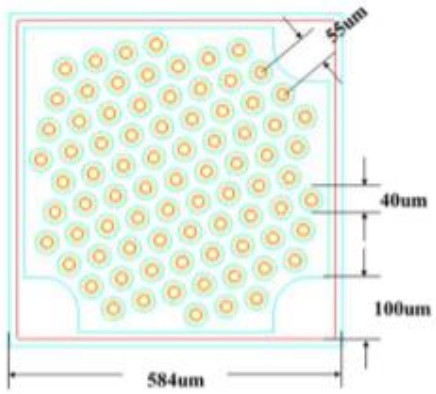
850nm 380mW VCSEL Chip

Part No. VCC-85A380H

Features

- 850nm VCSEL chip
- >380mW output power at 700mA
- Number of emitters: 82
- -10 to 85ºC operating temperature
- Beam Divergence typ. 25 degree at FWHM
- Chip size: 584 x 584 ± 15 μm



Applications

- Infrared illumination light source
- Night vision lighting
- Consumer electronics
- Gesture sensor light source

Specifications

Absolute Maximum Ratings				
Parameters	Symbol	Rating	Unit	Conditions
Storage Temperature	T_{stg}	-40 to 125	°C	
Operating Temperature	T_{op}	-10 to 85	°C	
Forward Current	I_f	700	mA	
Junction Temperature	T_j	≦ 120	°C	

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=25ºC unless otherwise stated)						
Parameters	Symbol	Min.	Typ.	Max.	Unit	Conditions
Threshold Current	I_{th}		120		mA	
Slope Efficiency	η		0.6		W/A	I_f=700mA
Optical Output Power	P_o	380	400	450	mW	I_f=700mA
Center Wavelength	λ_C	840	850	860	nm	I_f=700mA
Variation in Output Power	ΔP_o		1		%/°C	T_a=25 to 85°C
Beam Divergence	Θ		25		°	I_f=700mA (FWHM)
Forward Voltage	V_f	1.8	2.4	2.6	V	I_f=700mA
ESD Threshold	V_{ESD}		4000		V	Human Body Model/3 pulse

Notes:

- All parameters except mentioned are measured at I_f=700mA, T_a=25ºC, CW.
- Forward Voltage (V_f) measurement allowance is ±0.1V.
- Center Wavelength (λ_C) measurement allowance is ±1.5nm.
- Others measurement allowance is ±10%.

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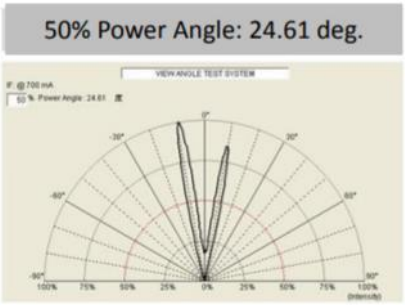
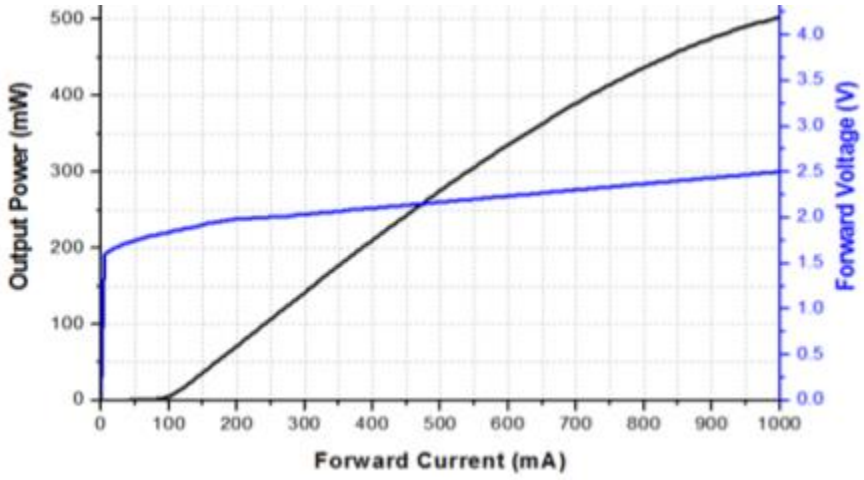
Typical Characteristics

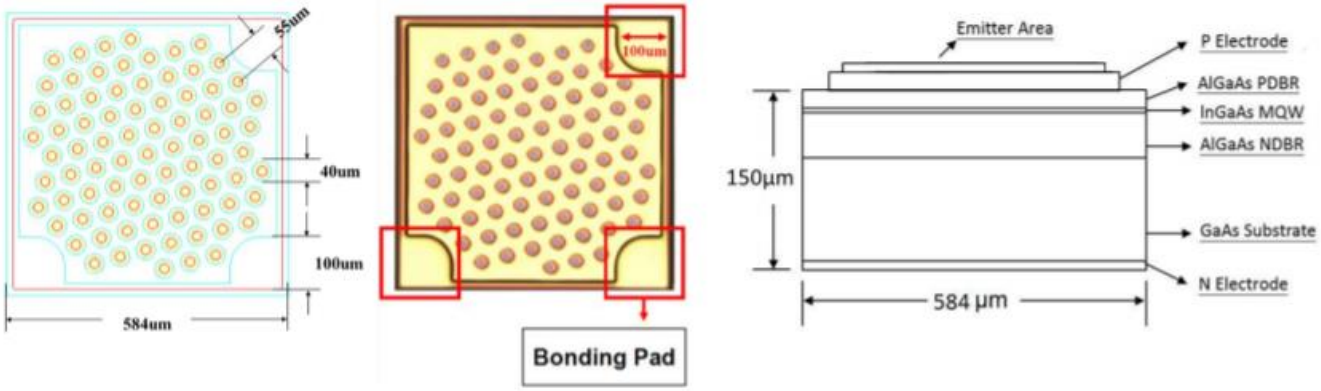
Beam Divergence



LIV Graph at 25°C



Outline Dimensions (unit: μm)



Specification	Min.	Typ.	Max.
Chip width	569	584	599
Chip length	569	584	599
Chip thickness	135	150	165
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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