



850nm 630mW VCSEL Chip

VCC-85A630H



Description

The Lasermate VCC-85A630H is an 850nm wavelength, 630mW output power, multi-emitter, Vertical Cavity Surface Emitting Laser (VCSEL) chip designed for use in sensing applications.

Features

- 850nm multi-emitter VCSEL chip
- Typical 630mW output power at 1000mA
- Number of emitters: 125
- -10 to 85°C operating temperature
- Beam Divergence typ. 30 degree at FWHM
- Chip size: 1016µm x 1016µm

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	1000	mA	
Junction Temperature	T _j	≤ 130	°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.

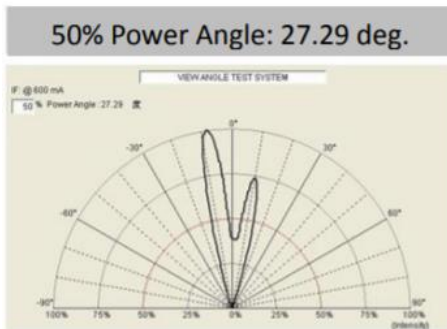
Electro-Optical Characteristics (T _a =25°C unless otherwise stated)						
Parameters	Symbol	Min.	Typ.	Max.	Unit	Conditions
Threshold Current	I _{th}		180		mA	
Slope Efficiency	η		0.7		W/A	I _f =600mA
Optical Output Power	P _o	300	400	450	mW	I _f =600mA
		630				I _f =1000mA
Center Wavelength	λ _c	840	850	860	nm	I _f =600mA
Variation in Output Power	Δ P _o		1		%/°C	T _a =25 to 85°C
Beam Divergence	Θ		30		°	I _f =600mA (FWHM)
Forward Voltage	V _f	1.8	2.4	2.6	V	I _f =600mA
ESD Threshold	V _{ESD}		4000		V	Human Body Model/3 pulse

Notes:

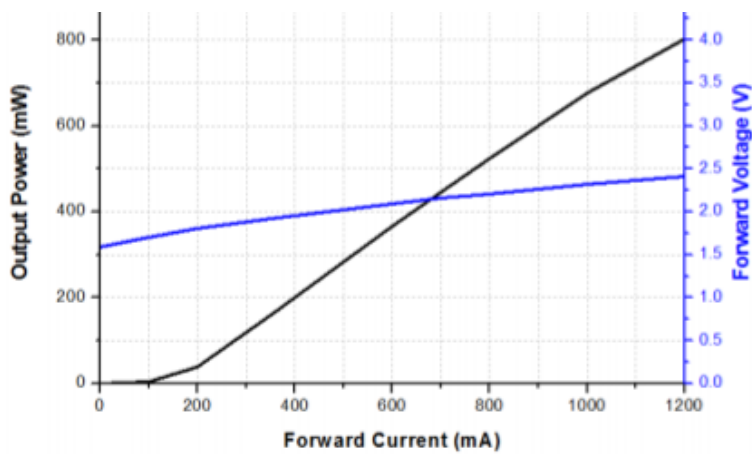
- All parameters except mentioned are measured at I_f=600mA, T_a=25°C, CW.
- Forward Voltage (V_f) measurement allowance is ±0.1V.
- Center Wavelength (λ_c) measurement allowance is ±1.5nm.
- Others measurement allowance is ±10%.

Typical Characteristics

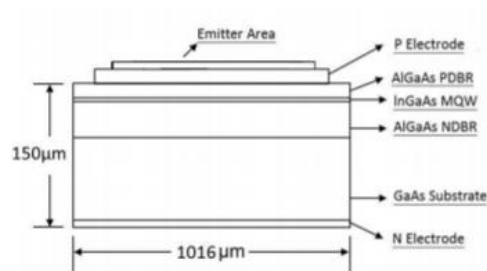
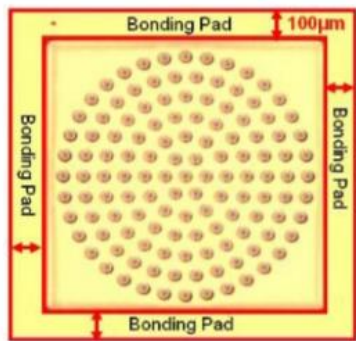
Beam Divergence



LIV Graph at 25°C



Outline Dimensions (unit: μm)



Specification	Min.	Typ.	Max.
Chip width	1001	1016	1031
Chip length	1001	1016	1031
Chip thickness	135	150	165

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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