

850nm VCSEL Array – 150mW Bare Chip

Part Number: VA2-850M-150mW-BC-A

Product Description & Features

- 850nm Vertical-Cavity Surface-Emitting Laser array with output power of 150mW
- Very low wavelength-temperature sensitivity
- Chip on submount is available upon request

Typical Applications

- Gesture Recognition
- Time of Flight
- 3D sensing

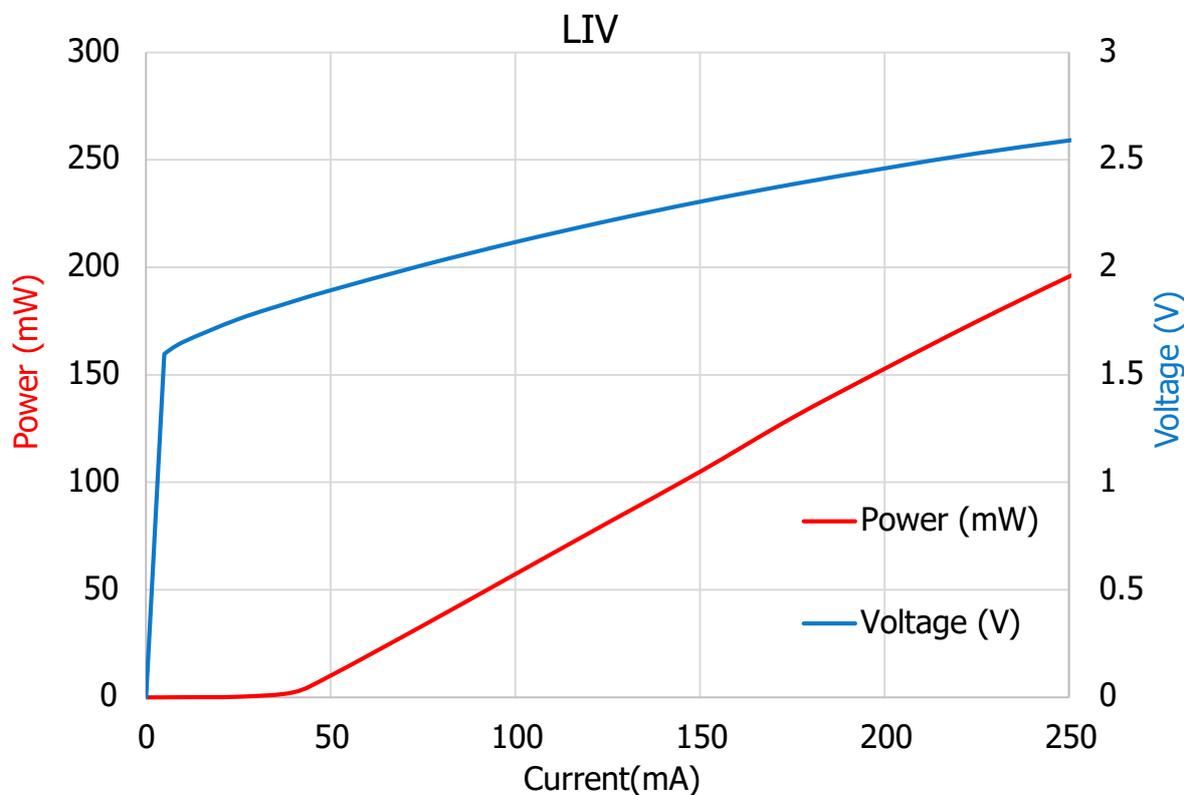
Electro-Optical Characteristics

Parameters	Symbol	Min	Typical	Max	Units	Test Condition
Optical Output Power	P_{op}	130	150	–	mW	CW $I_{op} = 200mA$
Threshold Current	I_{th}	–	40	50	mA	
Operating Current	I_{op}	–	200	–	mA	
Differential Resistance	R_s	–	2.5	3.5	Ω	CW $I_{op} = 200mA$
Operating Voltage	V_{op}	–	2.4	2.5	V	CW $I_{op} = 200mA$
Slope Efficiency	η_s	0.8	0.9	–	W/A	CW $I_{op} = 200mA$
Power Conversion Efficiency	PCE	–	30	–	%	CW $I_{op} = 200mA$
Center Wavelength	λ_{peak}	840	850	860	nm	CW $I_{op} = 200mA$
Spectral Width (RMS)	$\Delta\lambda$	–	1	–	nm	CW $I_{op} = 200mA$
Beam Full Divergence Angle ($1/e^2$)	φ	19	25	31	$^\circ$	CW $I_{op} = 200mA$
Wavelength Temperature Coefficient	$d\lambda/dT$	–	0.07	–	nm/ $^\circ C$	

All tests are under CW condition with heatsink temperature 25 $^\circ C$ unless otherwise specified.

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Typical Performance Curves at 25°C



Absolute Maximum Ratings

Parameter	Conditions	Units
CW Forward Current	350	mA
Pulse Forward Current (2% duty cycle, 200us Pulse Width)	600	mA
Reverse Voltage	5	V
Maximum Solder Temperature (10s)	285	°C
Operating Temperature	5 to 80	°C
Storage Temperature	-40 to 100	°C

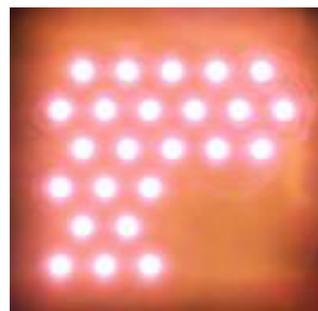
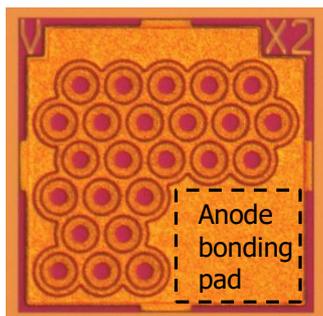
Stresses beyond the parameters listed under Absolute Maximum Ratings may cause permanent damage to the chips.

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Mechanical Characteristics

Parameter	Rated	Units
Chip Width	325	μm
Chip Length	325	μm
Chip Height	105	μm
Anode Contact	Emission side, Au surface	
Anode bonding pad	100 X 100	$\mu\text{m} \times \mu\text{m}$
Cathode Contact	Backside, Au surface	

Sample Photo



Shipping Instruction

The unmounted chips are shipped on adhesive blue tape or Gel-Pak boxes.

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Note: No responsibility is assumed for the use of these products. The products can emit Class IIIB radiation and must be operated with extreme care. Avoid directly viewing the laser beam or exposure to specular reflections. Proper eye-wear must be worn at all times when operating. VCSEL Chips are electrostatic-sensitive device and proper ESD protection is required for handling.



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