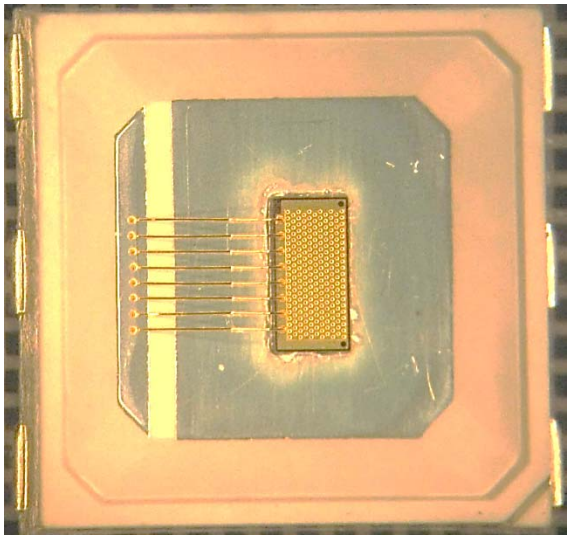
850nm Power Array VCSEL with power emission of 4W to 6W pulsed in a PLCC 5052 package



850PA on a PLCC 5052 package

Near Infra-Red Vertical Cavity Surface Emitting Laser (VCSEL)
Model: Multi Mode Array VCSEL

Applications

- Automotive Sensing
- 3D Scanning
- Motion Control
- Time of Flight
- Gesture Recognition
- IR illumination for Security

Package Details: This VCSEL array is delivered in a PLCC 5052 package (shipped in tape on reel for minimum quantities of 1000 pcs) with an encapsulant. The PLCC package is compatible with standard SMT solder reflow.

COMPLIES WITH IEC 60825-1, 2nd Edition 2007.
COMPLIES WITH 21 CFR 1040.10 AND 1040-10.11 EXCEPT FOR DEVIATIONS PURSUANT TO LASER NOTICE NO.50 DATED 27 MAY 2001.

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Absolute Maximum Ratings

Parameter	Rating	Notes
Storage temperature	-40 to 100 °C	
Operating temperature (VCSEL)	-20 to 80 °C	
Maximum package SMT solder reflow temperature	260°C, 10 seconds	
Maximum pulsed current	10 A	100µs pulse width, 10% duty cycle, T=25°C (Note 1)

Note 1: For details refer to the Vixar Application Note "Operation of VCSELs Under Pulsed Conditions". (http://www.vixarinc.com/technology/applicationnotes.html)

Stresses beyond those listed under Absolute Maximum Ratings may cause permanent damage to the device. These are stress ratings only. Functional operation of the device at these or any other conditions beyond those indicated for extended periods of time may affect device reliability.

Electro-Optical Characteristics

VCSEL Operating Temp (Top) =25°C, pulsed operation of 100 micro second pulse width and 10% duty cycle unless otherwise noted

Parameter	Symbol	Units	Minimum	Typical	Maximum	Notes
Threshold current	Ith	A	1.3	2.0	3.0	
Operating voltage	Vf	Volts	--	2.7	3.2	Iop= 6A
Optical Operating power	Lop	W	3.6	4.0	5.2	Iop= 6A
Slope efficiency	SE	W/A	--	0.9	--	Iop= 6A
Power conversion efficiency	PCE	%	35	--	--	
Reverse breakdown voltage		V	10	--	--	Ir ≤ 1nA
Beam divergence	FWHM	deg	20	24	27	
Beam divergence	1/e2	deg	22	28	31	
Operating wavelength	λop	nm	840	850	860	
Rise time		ps	--	--	500	20%-80%
Fall time		ps	--	--	500	20%-80%

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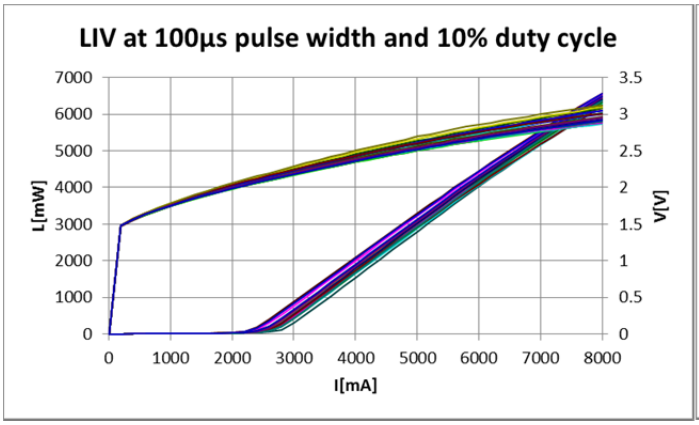
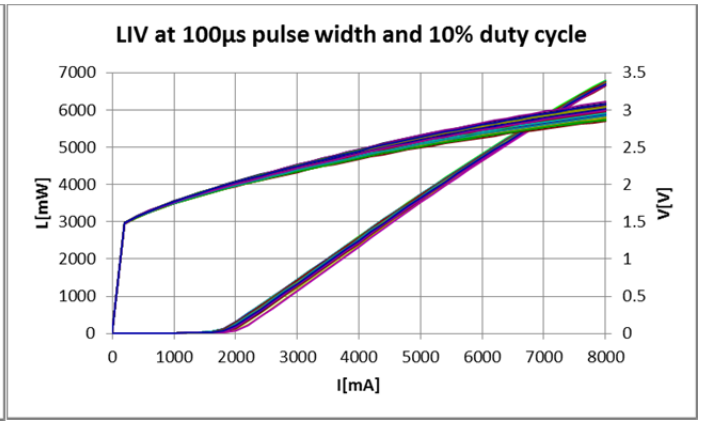
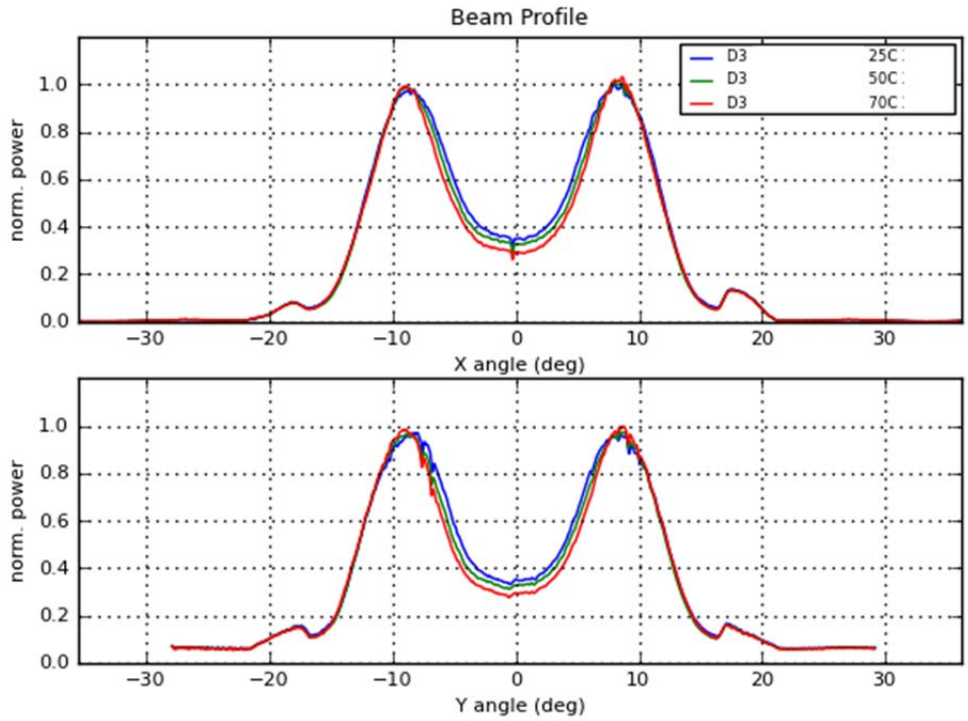
Sampled pulse data over the specification range at room temperature:





Beam divergence data over temperature (25°C, 50°C, 70°C)



ORDERING INFORMATION

Description	Package	Part Number
4 Watts 850 nm Power array VCSEL on a PLCC package with encapsulant	PLCC 5052	I0-0850M-0000-OP06
4 Watts 850 nm Power array bare VCSEL		I0-0850M-0000-AP06

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