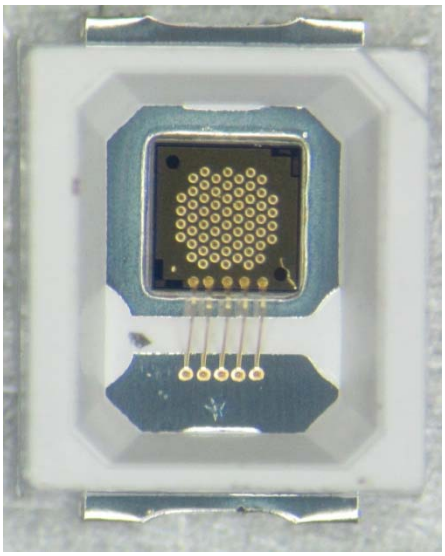
680nm Power Array VCSEL with optical power to 350mW in a PLCC 2835 package



Visible Red Vertical Cavity Surface Emitting Laser (VCSEL)
Model: Multi Mode Array VCSEL
Specifically designed for high power multi mode applications up to 350 milliwatt optical operating power.

Applications

- Time of Flight
- Medical Scanning
- Low light laser therapy

Package Details: This VCSEL array is delivered in a PLCC 2835 package (shipped in tape on reel for minimum quantities of 2000 pcs) with an encapsulant. The PLCC package is compatible with standard SMT solder reflow processing.

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.

Absolute Maximum Ratings

Parameter	Rating	Notes
Storage temperature	-40 to 100 °C	
Operating temperature (VCSEL)	-20 to 50 °C	
Maximum package SMT solder reflow temperature	260°C, 10 seconds	
CW current (VCSEL)	700mA	(Note 1)
Maximum pulsed current	1.2A	100µs pulse width, 10% duty cycle, T=25°C (Note 2)

Note 1: The maximum CW laser current in the Absolute Maximum Ratings is valid for the operating temperature noted at the top of this table; however, the maximum CW laser current decreases with increasing temperature. Contact Vixar for maximum CW laser current values at other temperatures.

Note 2: For details refer to the Vixar Application Note "Operation of VCSELs Under Pulsed Conditions". (http://www.vixarinc.com/technology/applicationnotes.html)

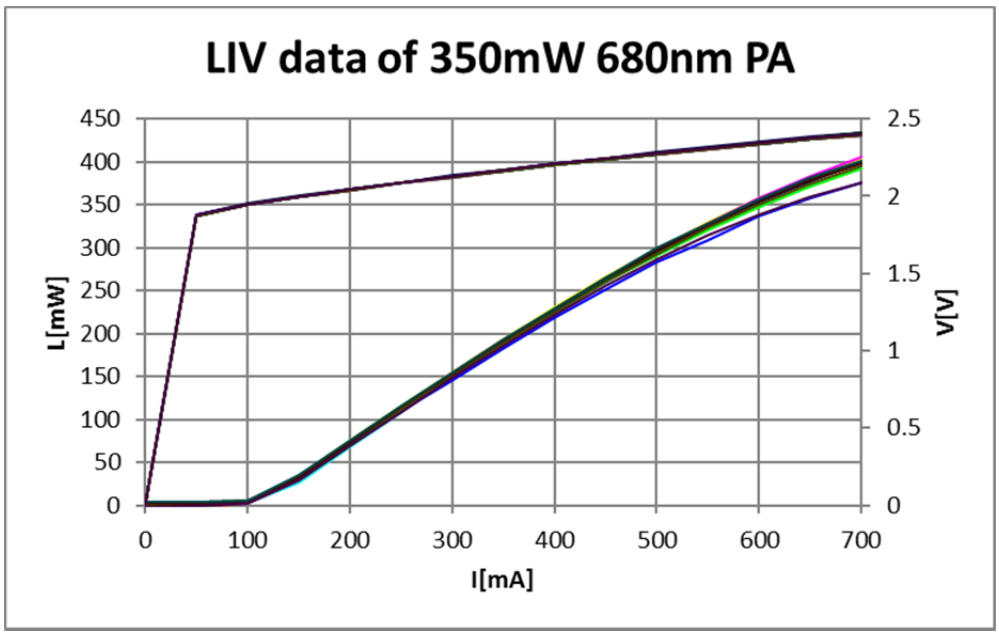
Stresses beyond those listed under Absolute Maximum Ratings may cause permanent damage to the device. These are stress ratings only. Functional operation of the device at these or any other conditions beyond those indicated for extended periods of time may affect device reliability.

Electro-Optical Characteristics

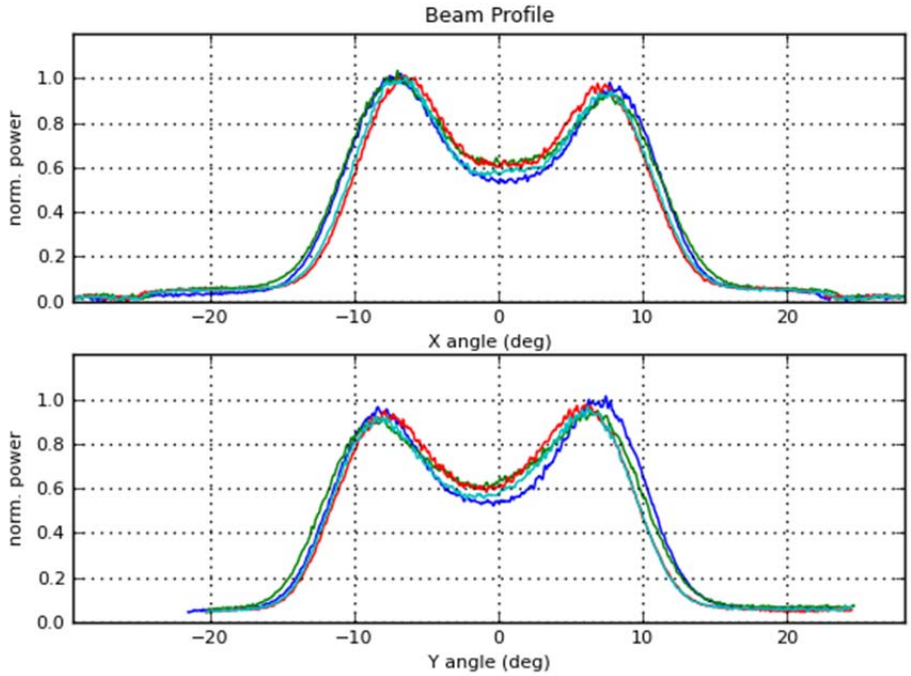
VCSEL Operating Temp (Tv) =25°C, CW operating condition unless otherwise noted

Product ID			Minimum	Typical	Maximum	Notes
Parameter	**Symbol**	**Units**				
Threshold current	Ith	mA	50	100	150	
Operating voltage	Vf	Volts	--	2.4	2.8	at 600mA
Optical Operating power	Lop	mW	275	350	--	at 600mA
Slope efficiency	SE	W/A	--	0.5	--	at 600mA
Power conversion efficiency	PCE	%	--	25	--	
Reverse breakdown voltage		V	10	--	--	Ir ≤ 1nA
Beam divergence	FWHM	deg		20		
Operating wavelength	λop	nm	670	680	690	
Wavelength-temp tuning		nm/°C		0.04		
Rise time		ps	--	--	500	20%-80%
Fall time		ps	--	--	500	20%-80%

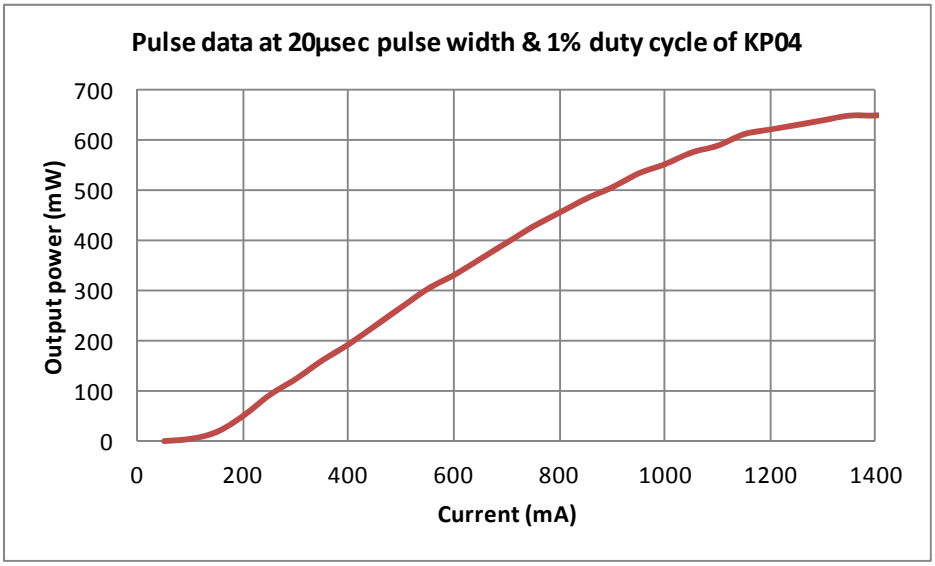
TYPICAL PERFORMANCE CURVES AT 25°C:



Beam divergence data at Room temperature



Sample Pulse data



ORDERING INFORMATION

Description	Package	Part Number
350milliwatts 680 nm Power array VCSEL on a PLCC package	PLCC 2835	680M-0000-KP04

2950 Xenium Lane, Suite 104
Plymouth, MN 55441
763-746-8045
email:info@vixarinc.com
website: www.vixarinc.com