Optowell Co., Ltd.

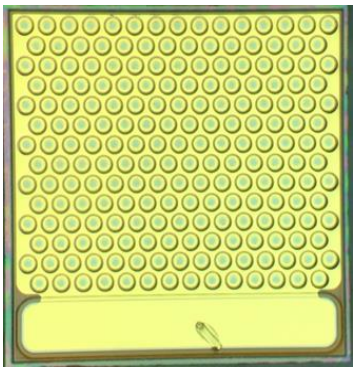
HV94-1000P1 Rev 3.0

Peak 1W 940 nm VCSEL Chip by pulse operation

Features

- 940nm wavelength range
- Peak 1W VCSEL by pulse mode operation
- Multi_mode beam profile
- High reliability
- Other configurations available on request

Description



Applications

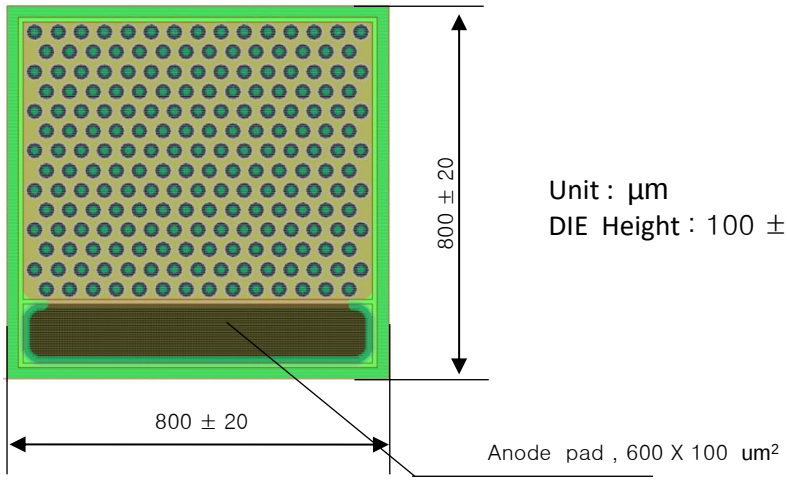
- Consumer electronics
- Safety sensor
- Illumination light source
- Gesture sensor light source

Absolute Maximum Ratings

Parameter	Rating
Storage Temperature	-40 to 85 ℃
Operating Temperature	-10 to 70 ℃
Continuous Forward Current	500mA

Dimensions

Mesa array area
0.75 X 0.61 mm^2



Unit : µm
DIE Height : 100 ±15 µm

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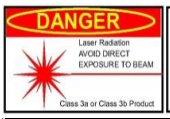
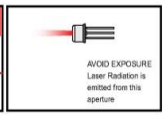
Electro-Optics Characteristics (T_a=25℃ unless otherwise stated)

Parameters	Symbol	Specified			Unit	Test Conditions
		Min.	Typ.	Max.		
Threshold Current	I_{th}		230		mA	CW
I_{th} Temperature Variation	ΔI_{th}		120		mA	T_a= -10 to 70 ℃
Slope Efficiency	η		1.0		W/A	I_f = 500 mA
η Temperature Variation	Δη / ΔT		-0.8		% / °C	T_a= -10 to 70 ℃ at 500mA
Peak Optical Output Power	P_o		1		W	Peak Pulse Current 1.25 A (12.5% dutye ratio)
Peak Wavelength	λ_P	930	940	950	nm	Peak Pulse Current 1.25 A (12.5% dutye ratio)
λ Temperature Varation	Δ λ / ΔT		0.06		nm/ °C	T_a= -10 to 70 ℃ at 500mA
Spectral Bandwidth (RMS)	Δ λ			2	nm	I_f = 500 mA
Beam Divergence	Θ		22		°	Peak Po = 1 W (FWHM)
Operating Voltage	V_f		2.1	2.5	V	Peak current = 1.25 A
Breakdown Voltage	V_b	-10			V	Ir = 10uA
Dynamic Resistance	R_d			1	Ohm	Peak current = 1.25 A

Notes

* These specifications are subject to change without notice.





NOTICE	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
DANGER	The VCSEL is a class IIIb laser and should be treated as a potential eye hazard. Due to the size of the component, the applicable warning logotype, aperture label, and certification / identification label cannot be placed on the component itself.

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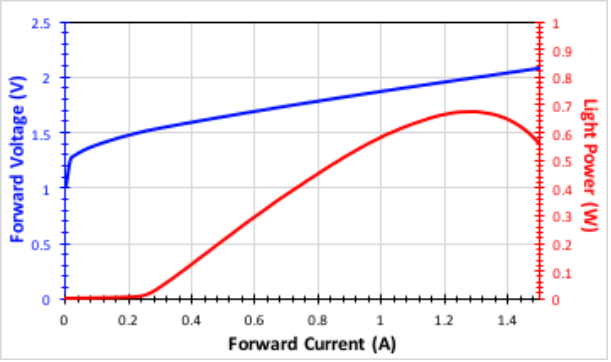
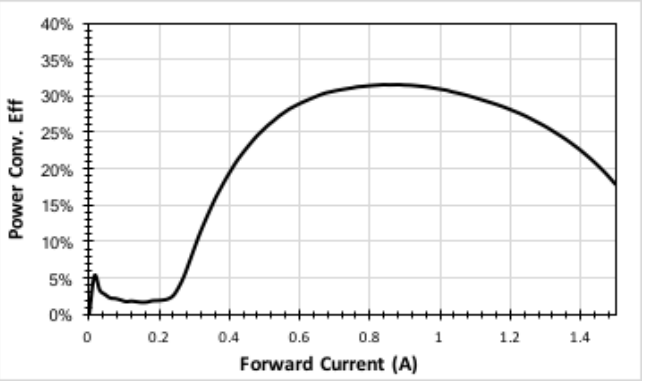
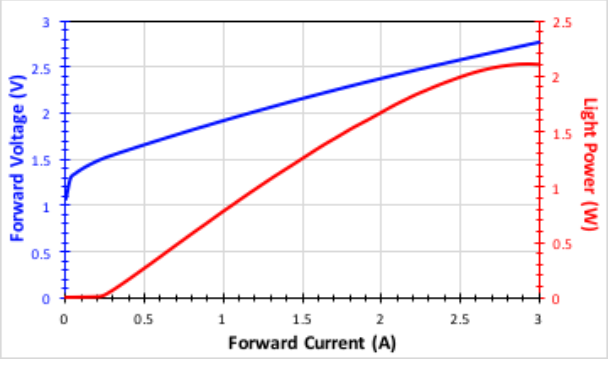
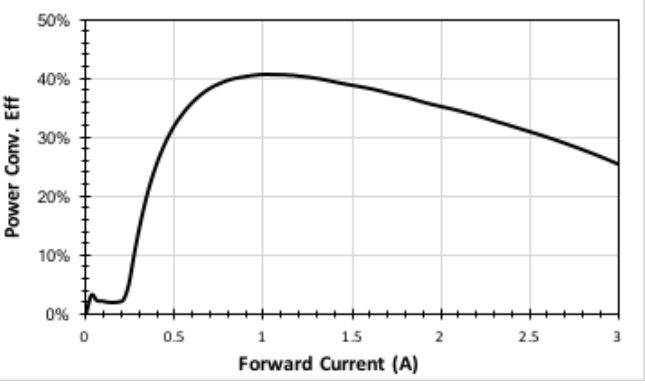
Characteristics Curves

LIV Curve	Power conversion efficiency
	

Test PKG sample : To-Can type, To-46
Test condition : CW Mode : IF step interval 15mA, Delay time 2msec

LIV Curve	Power conversion efficiency
	

Test PKG sample : To-Can type, To-46
Test condition : QCW Mode : IF step interval 30mA, 1kHz, 12.5% duty ratio.