

## 940nm 500mW VCSEL Chip VC-0940C-500M-30-0A0

### FEATURES

- 940nm single wavelength
- Low wavelength drift
- Oxide isolation technology
- Low threshold current
- Small emission area
- Easy to collimate

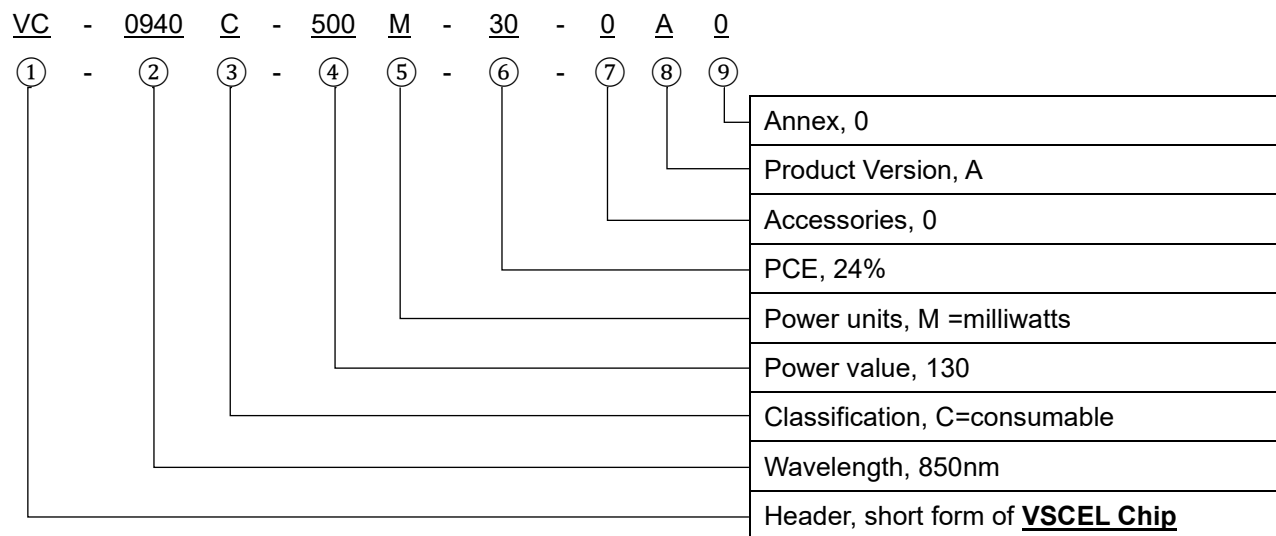
### APPLICATIONS

- 3D sensors
- Gesture recognition
- IR illuminations
- Medical applications
- Broadband access network
- Smart home applications

Part Number	Description
VC-0940C-500M-30-0A0	940nm 500mW VCSEL Chip

## PRODUCT IDENTIFY

### Code Rules



### I. Absolute maximum ratings

Parameter	Symbol	Rating	Unit
Case Operating Temperature	$T_{op}$	-40 to +60	°C
Storage Temperature	$T_{sto}$	-40 to +85	°C
Reflow Soldering Temperature	$T_{sdr}$	320°C (10s)	\
Reverse Voltage	$V_r$	5	V
Maximum Continuous Current	$I_{max}$	1	A
ESD exposure (Human body) model	ESD	1K	V

#### Note:

1. Stresses greater than those listed under "Absolute Maximum Ratings" may cause permanent damage to the device. This is a stress rating

only and functional operation of the device at these or other conditions above those indicated in the operations section for extended periods of time may affect reliability.

2. In its maximum rating diode laser operation could damage its performance or cause potential safety hazard such as equipment failure.
3. Electrostatic discharge is the main reason for the laser fault of the diode. Take effective precautions against ESD. When dealing with laser diodes, use the wrist strap, grounding work surface and strict antistatic technology.

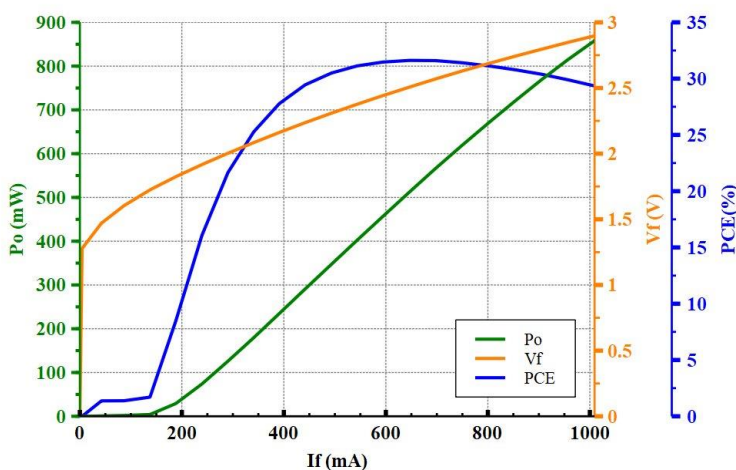
## II. Optical-electrical characteristics @25°C , CW mode

Parameters	Symbol	Condition	Min.	Typ.	Max.	Unit
Threshold Current	$I_{th}$		-	160	-	mA
Forward Current	$I_F$		-	635	-	mA
Optical Power	$P_o$	$I_F=635mA$	-	500	-	mW
Laser Forward Voltage	$V_f$	$I_F=635mA$	-	2.5	-	V
Power conversion efficiency	$\eta$	$I_F=635mA$	-	31	-	%
Slope efficiency	SE	$P_o=500mW$	-	1.06	-	W/A
Series Resistance	R	$I_F=635mA$	-	1.23	-	$\Omega$
Peak Wavelength	-	$I_F=635mA$	930	940	950	nm
Wavelength-Temp. Drift	$\Delta\lambda/\Delta T$	$I_F=635mA$	-	0.07	-	nm/°C
Beam divergence	$FWHM_B$		-	25	-	deg
Emission area				370x370		$\mu m^2$
No. of Emission Aperture				116		

**Note:** Electro-Optical Characteristic with a package or diffuser would require further evaluation. Values are based on limited sample size and estimated values.

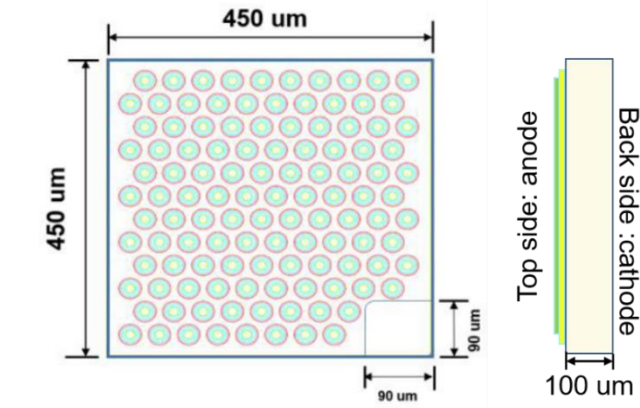
## III. Typical Performance

### a. LIV curve and Spectral Width



#### IV. Mechanical Schematics (unit : $\mu\text{m}$ )

VC-0940C-500M-30-0A0 with No. of Emission Aperture [116]



**Note:** There may be some changes between sample and drawing · thus · the actual spec please refer to the sample that you received. And if any inquires please contact us.

#### V. Revision History

Revision	Date	Description
SpecV.01	2020/08/04	The first official edition [B6 <sub>n</sub> ]

**Note:** Brightlaser reserves the right to make modification at any time due to improved design from time to time, the merit behind is to supply the best product possible.