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940nm 160mW VCSEL Chip
VC-0940C-160M-27-0A0

FEATURES

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

APPLICATIONS

- Proximity Sensor
- Consumer electronics
- Laser Curtain
- Medical applications
- Range finder sensors

Part Number	Description
VC-0940C-160M-27-0A0	940nm 160mW VCSEL Chip

PRODUCT IDENTIFY

Code Rules

VC - 0940 C - 130 M - 270 - 0 A 0

① - ② ③ - ④ ⑤ - ⑥ - ⑦ ⑧ ⑨

⑨	Annex, 0
⑧	Product Version, A
⑦	Accessories, 0
⑥	PCE, 27%
⑤	Power units, M =milliwatts
④	Power value, 160
③	Classification, C=consumable
②	Wavelength, 940nm
①	Header, short form of **VSCEL Chip**

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	2	V
Maximum Continuous Current	I_{max}	0.5	mA
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

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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.

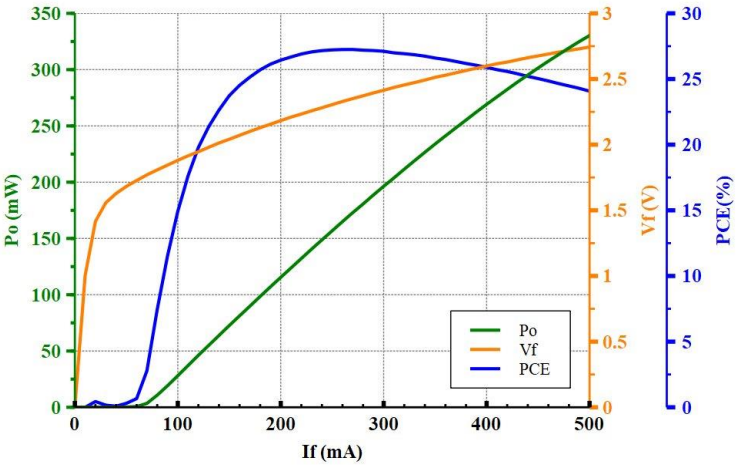
II. Optical-electrical characteristics @25℃ , CW mode

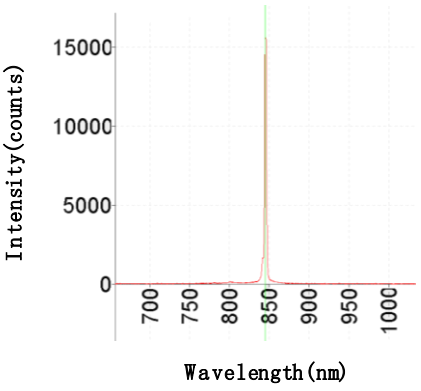
Parameters	Symbol	Condition	Min.	Typ.	Max.	Unit
Threshold Current	I_{th}		-	70	-	mA
Forward Current	I_F		-	250	-	mA
Optical Power	P_o	I_F=230mA	-	160	-	mW
Laser Forward Voltage	V_f	I_F=230mA	-	2.3	-	V
Power conversion efficiency	η	I_F=230mA	-	27	-	%
Slope efficiency	SE	P_o=160mW	-	0.81	-	mW/mA
Series Resistance	R	I_F=230mA	-	2.34	-	Ω
Peak Wavelength	-	I_F=230mA	930	940	950	nm
Wavelength-Temp. Drift	Δλ/ΔT	I_F=230mA	-	0.07	-	nm/℃
Beam divergence	$FWHM_B$			25		deg
Emission area				220x210		um^2
No. of Emission Aperture				39		

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





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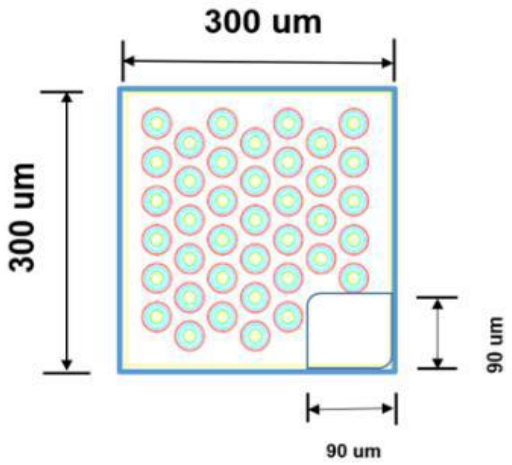
IV. Mechanical Schematics (unit : um)

VC-0940C-160M-27-0A0 with No. of Emission Aperture [39]



Chip thickness =170um

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
Spec V.01	2020/08/06	The first official edition [A5A]

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.