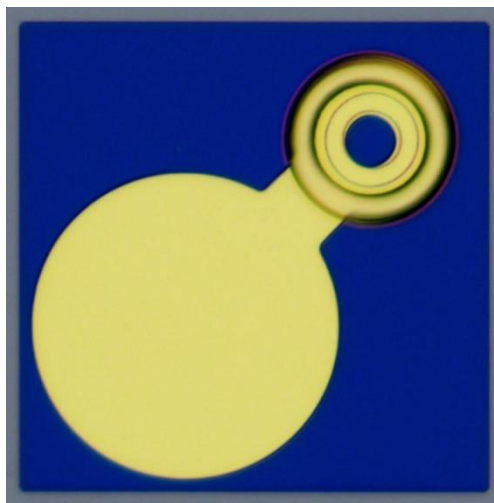


# 850nm 5mW VCSEL Laser Chip

Part No.: D-V0850M-0005-0007

Suitable for pulse power applications and the power is 5mW



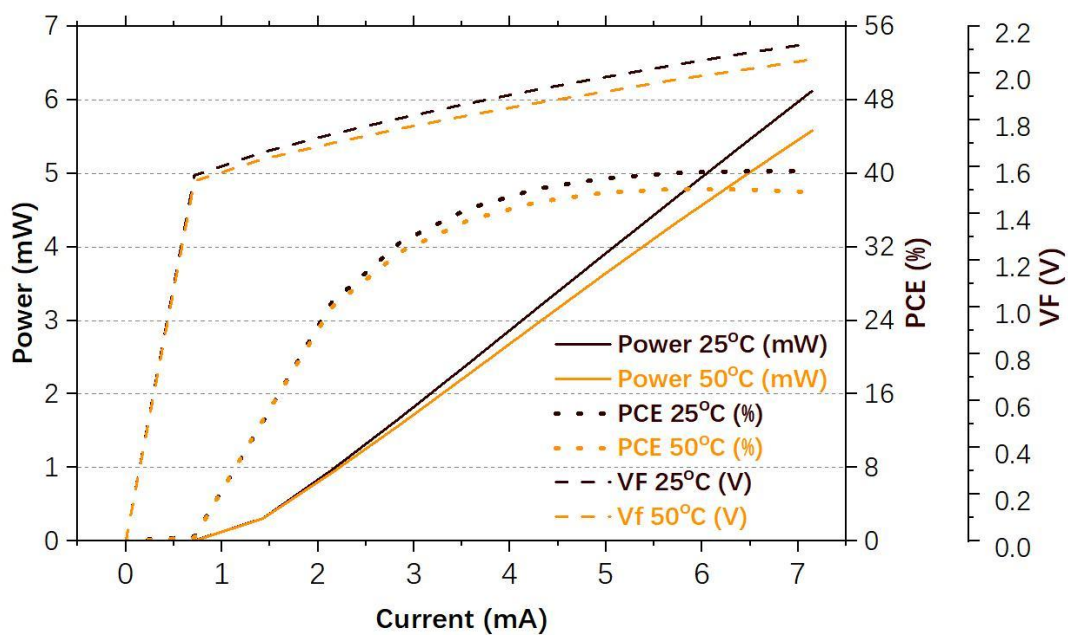
## Features

- VCSEL (Vertical-Cavity Surface-Emitting Laser)
- High efficiency and reliability
- Stable central wavelength, narrow line width
- Doughnut shaped, symmetrical far field
- Surface mountable

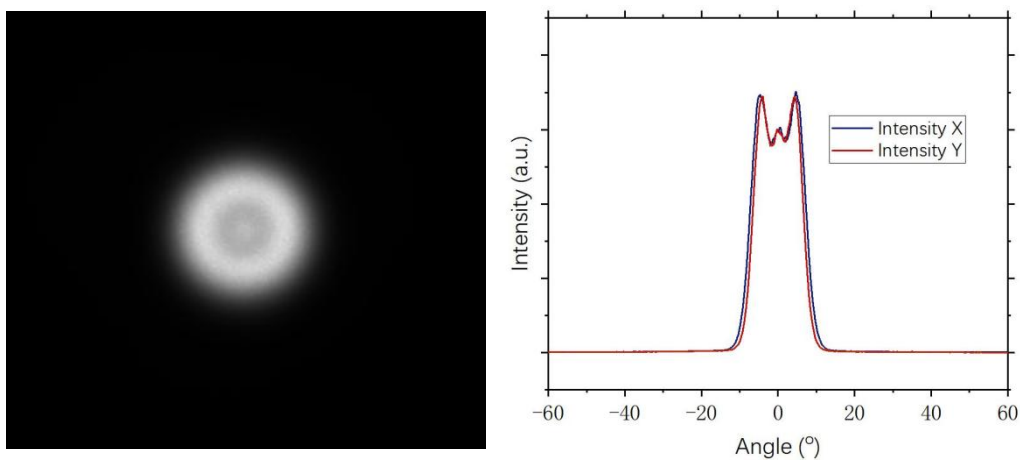
## Applications

- Sensor light source
- Consumer electronic products
- Machine vision
- Red lighting
- Industrial

### L-I-V Curve



### FFDA (Far-Field Divergence Angle)

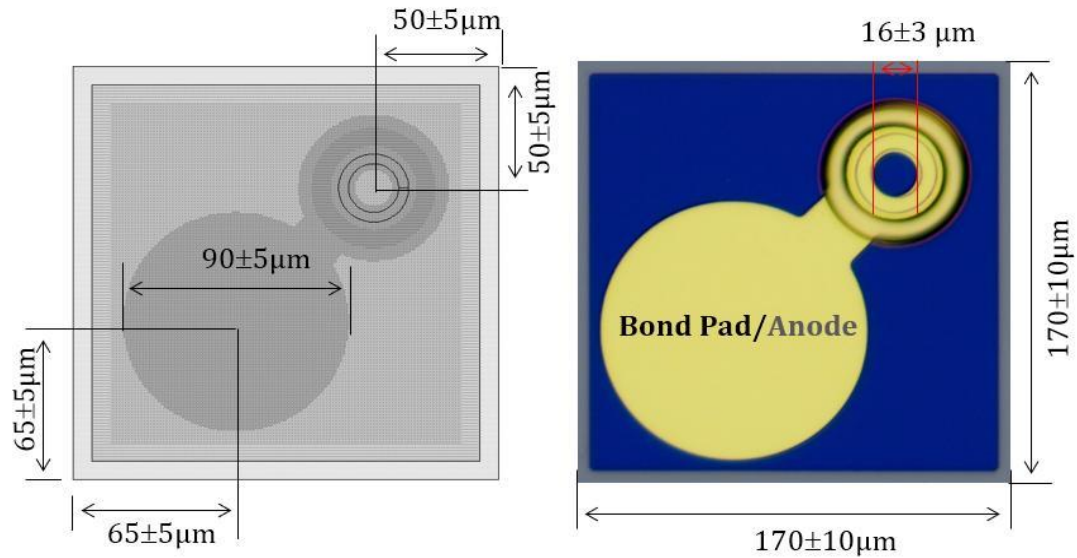


## Electrical Optical Characteristics

| Parameter                           | Symbol          | Unit | Min. | Typ. | Max | Note                 |
|-------------------------------------|-----------------|------|------|------|-----|----------------------|
| Threshold Current                   | I <sub>th</sub> | mA   | 0.7  | 1.3  | 2.0 |                      |
| Forward Voltage                     | V <sub>F</sub>  | V    | 1.8  | 2.0  | 2.2 | I <sub>F</sub> = 7mA |
| Differential Resistance             | R <sub>s</sub>  | Ohms | --   | 75   | --  |                      |
| Slop Efficiency                     | SE              | W/A  | 0.9  | 1.0  | --  |                      |
| Output Power                        | P <sub>op</sub> | mW   | 5    | 6    | --  | I <sub>F</sub> = 7mA |
| Power Conversion Efficiency         | PCE             | %    | 39   | 41   | --  | I <sub>F</sub> = 7mA |
| Wavelength                          | λ <sub>op</sub> | nm   | 840  | 850  | 860 |                      |
| Divergence Angle(1/e <sup>2</sup> ) |                 | deg  | 17   | 20   | 23  | I <sub>F</sub> = 7mA |

25°C, QCW Model (Pulse length 0.5ms, 1% Duty Cycle )

## Mechanical Specifications



| 参数<br>Parameter                                  | 规格<br>Specification                                    |
|--------------------------------------------------|--------------------------------------------------------|
| 芯片尺寸<br>Die size                                 | $170 \pm 10 \mu\text{m} \times 170 \pm 10 \mu\text{m}$ |
| 芯片厚度<br>Die Thickness                            | $130 \pm 10 \mu\text{m}$                               |
| 光孔数目<br>Number of Emitters                       | 1                                                      |
| 焊盘尺寸 (正极)<br>Bond Pad Size (Anode Pad)           | $90 \pm 5 \mu\text{m}$                                 |
| 背面电极尺寸 (负极)<br>Back Electrode Size (Cathode Pad) | $170 \pm 10 \mu\text{m} \times 170 \pm 10 \mu\text{m}$ |

