



850nm Single Mode VCSEL Chip for Sensor

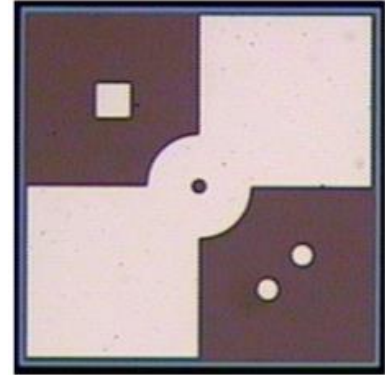
Part No. VCC-85A1G-OSL

Features

- 850nm VCSEL chip
- Single transverse mode and longitudinal mode
- Size: 240x240um
- Low current operation
- High reliability
- High resistance to ESD

Applications

- Consumer electronics
- Laser mouse
- Laser printer
- Safety sensor
- Engine management system



Specifications

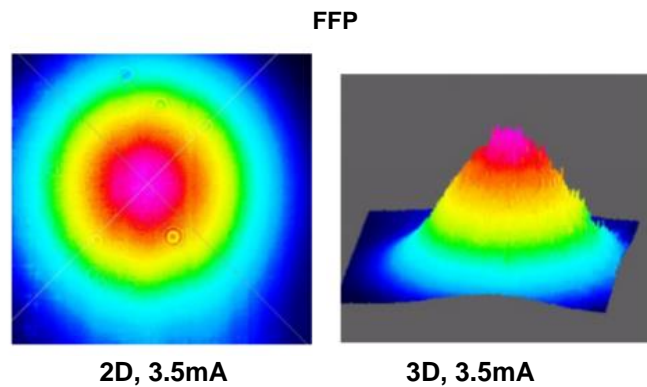
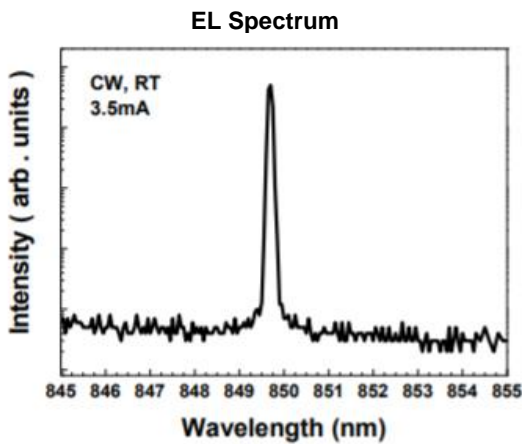
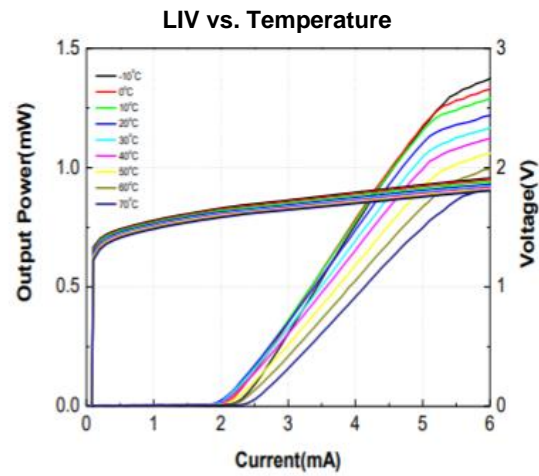
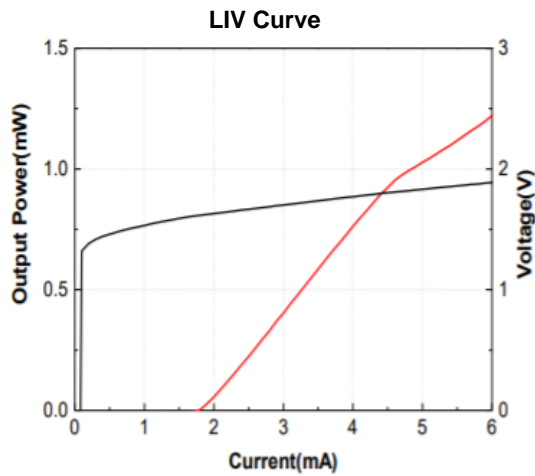
| Absolute Maximum Ratings | | | | |
|----------------------------|------|------|------|------------|
| Parameters | Min. | Max. | Unit | Conditions |
| Storage Temperature | -40 | 85 | °C | |
| Operating Temperature | -10 | 70 | °C | |
| Continuous Forward Current | | 6 | mA | |
| Continuous Reverse Voltage | | 5 | V | 10uA |

| Electro-Optical Characteristics (T _a =25°C unless otherwise stated) | | | | | | |
|--|-----------------|------|------|------|------|--|
| Parameters | Symbol | Min. | Typ. | Max. | Unit | Conditions |
| Threshold Current | I _{th} | | 2 | 3 | mA | CW |
| Slope Efficiency | η | 0.2 | 0.35 | | W/A | I _f =3.5mA |
| Optical Output Power | P _o | 0.25 | 0.5 | | mW | I _f =3.5mA |
| Peak Wavelength | λ _P | 840 | 850 | 860 | nm | I _f =3.5mA |
| Beam Divergence | Θ | 6 | 8 | | ° | P ₀ =0.5mW, (Full Width, 1/e ²) |
| Forward Voltage | V _f | | 1.8 | 2.1 | V | I _f =3.5mA |
| Breakdown Voltage | V _b | | -10 | | V | |
| Dynamic Resistance | R _d | | 70 | 90 | Ohm | I _f =3.5mA |
| Side Mode Suppression Ratio | SMSR | 15 | 30 | | dB | I _f =3.5mA |
| | | | 10 | | | I _f =4.0mA |

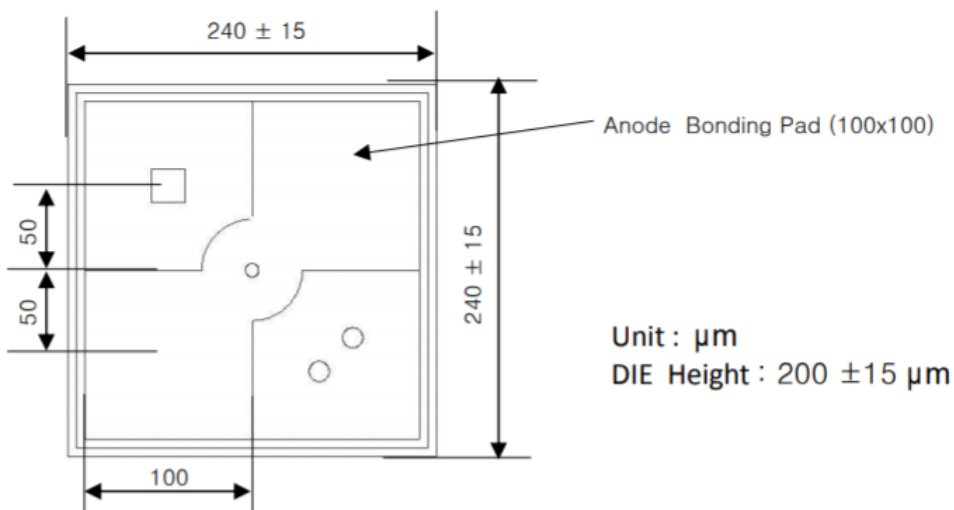
| Thermal Characteristics | | | | | | |
|---------------------------------------|------------------|------|------|------|-------|--|
| Parameters | Symbol | Min. | Typ. | Max. | Unit | Conditions |
| I _{th} Temperature Variation | ΔI _{th} | | 1.5 | | mA | T _a =-10 to 70°C |
| η Temperature Coefficient | Δη/ΔT | | -0.5 | | %/°C | T _a =-10 to 70°C, I _f =3.5mA |
| λ Temperature Coefficient | Δλ/ΔT | | 0.06 | | nm/°C | T _a =-10 to 70°C, I _f =3.5mA |



Typical Characteristics



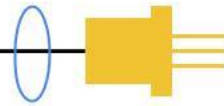
Outline Dimensions (unit: μm)





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Additional Notes

- 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.
- Specifications are subject to change without notice.

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