

High Power 850nm Single-Mode VCSEL Chip

- High power single-mode of > 4.0 mW with a minimum 15 dB SMSR ALVL-85-C02
- Chips are made by proprietary implant process, which guarantee a high ESD threshold of > 400V

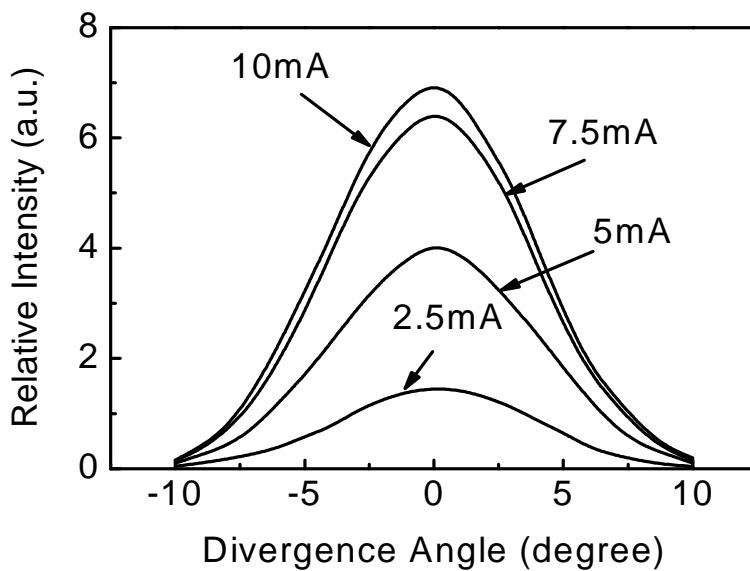
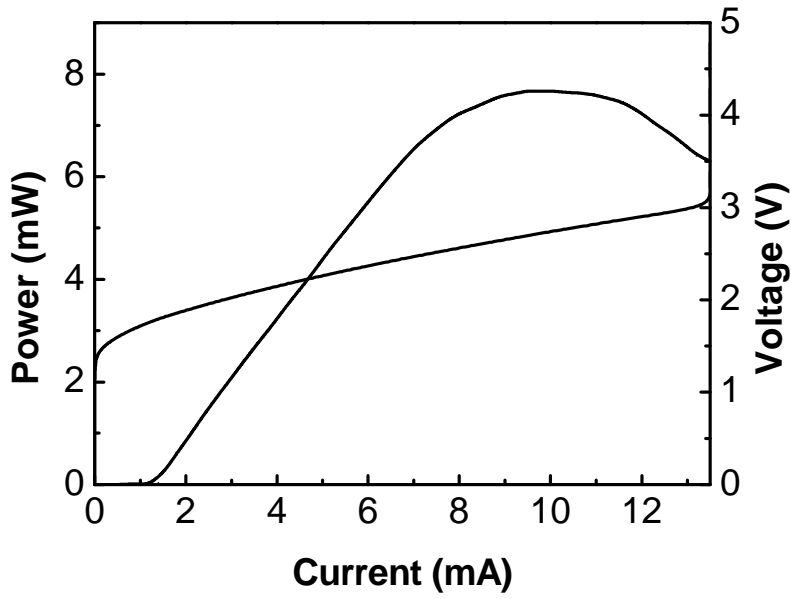
Absolute Maximum Ratings:

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Optical Power	P _o	4.0		6.0	mW	CW
Storage Temperature		-40		85	°C	
Operating Temperature		-0		70	°C	
Reverse Voltage	V _R	5			V	

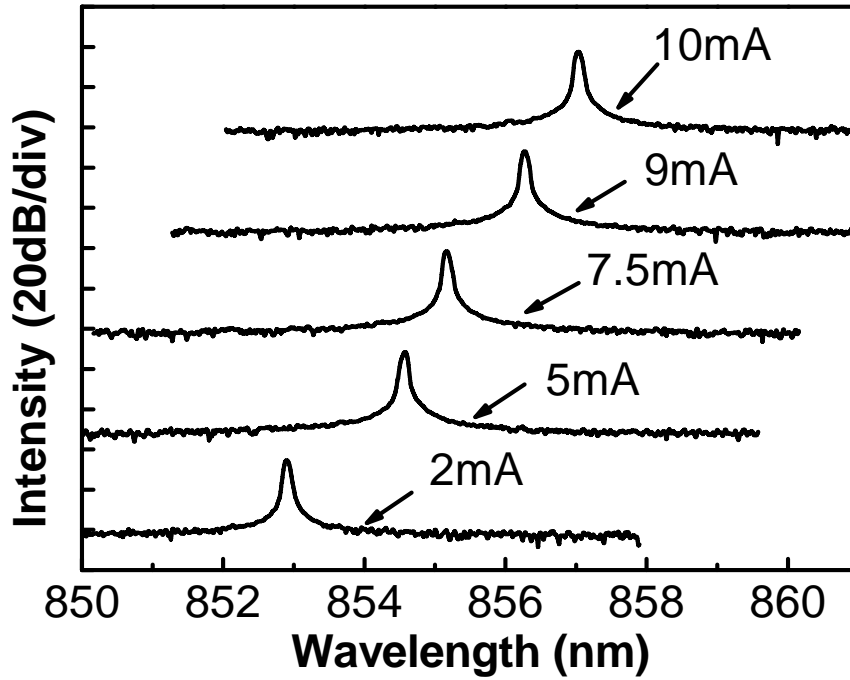
Optical / Electrical Characteristics (T=25°C):

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Optical Output Power	P _o	4.0		6.0	mW	I _F =15 mA
Forward Voltage	V _F			2.7	V	I _F =15 mA
Threshold Current	I _{th}	1		10	mA	
Operating Current	I _{op}	2		20	mA	P _o = 4.0 mW
Operating Voltage	V _{op}			3.0	V	P _o =4.0 mW
Center Wavelength	λ _c	840	850	870	nm	
Side Mode Suppression Ratio	SMSR	15			dB	
Beam Divergence	θ _{FWHM}		8		deg	I _F =15 mA
Slope Efficiency	η	0.1			mW/mA	0.5~1.5mW
Series Resistance	R _s			150	Ω	
ESD Threshold	ESD	1 k			V	Human body mode

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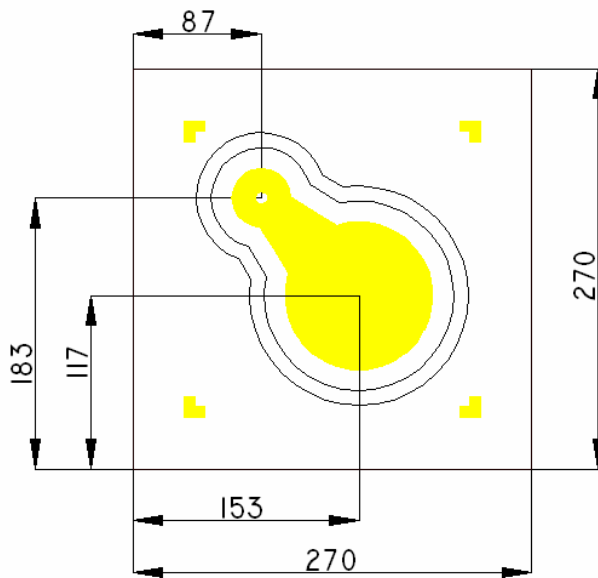


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Chip configuration:

1. **Top contact: Anode; Bottom contact: Cathode.**
2. **Dimension: 270 μm (width) x 270 μm (length) x 130 μm (thickness)**
Tolerance: $\pm 12.5\mu\text{m}$
3. **Bond pad size: 100 μm diameter.**

VL-85-C02 single-mode VCSEL chip drawing



Unit : μm