



## 850 nm Single Mode VCSEL Chip

## CG1163 Series

**Application:** Position Sensing / Pointing device for computer

### Absolute Maximum Ratings (T = 25°C)

Parameter	Symbol	Unit	Min.	Max.	Note
Forward current	I <sub>max</sub>	mA		10	
Reverse voltage	V <sub>r</sub>	V	5		I <sub>r</sub> = -10uA
Operating temperature	T <sub>op</sub>	°C	0	45	
Storage temperature	T <sub>stg</sub>	°C	-40	85	
Maximum die exposure	T <sub>max</sub>	°C		260	for 10 sec.

### Electro-Optical Characteristics (T = 25°C, unless noted otherwise):

Parameter	Symbol	Unit	Min.	Typ	Max.	Test Condition
Threshold Current	I <sub>th</sub>	mA	1	2	4	—
Operating Current	I <sub>op</sub>	mA	2.5	—	5	@0.25mW
Operating Voltage	V <sub>op</sub>	V	—	2.0	2.5	@0.25mW
Differential resistance	R <sub>s</sub>	Ω	—	60	130	I <sub>f</sub> =5mA
Reverse voltage	V <sub>r</sub>	V	5	—	—	I <sub>r</sub> =-10uA
Slope efficiency	η	mW/mA	0.1	0.2	0.3	I <sub>f</sub> =5mA
Side mode suppression ratio	SMSR	dB	20	30	—	@0.25mW
Peak Emission Wavelength	λ	nm	830	845	860	@0.25mW
Beam Divergence Angle	θ	deg	—	17	—	full width, 1/e <sup>2</sup>
Optical output power	P <sub>o</sub>	mW	0.6	1.6	2.0	I <sub>f</sub> =10mA

### ■ Outline Dimensions (unit: um)

Chip configuration:

1. Top contact: Anode; Bottom contact: Cathode.
2. Dimension: 270 um (width) x 270 um (length) x 100 um (thickness)  
Tolerance: ±12.5um
3. Bond pad size: 100um diameter

