850 nm Single Mode VCSEL Chip

CG1165 Series

Application: Position Sensing / Pointing device for computer

Absolute Maximum Ratings (T = 25°C)

Parameter	Symbol	Unit	Min.	Max.	Note
Forward current	Imax	mA		12	
Reverse voltage	V_r	V	5		Ir = −10uA
Operating temperature	T_{op}	℃	0	45	
Storage temperature	T_{stg}	℃	-40	85	
Maximum die exposure	Tmax	℃		260	for 10 sec.

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

Parameter	Symbol	Unit	Min.	Typ	Max.	Test Condition
Threshold Current	I_{th}	mA	1	2	3	—
Operating Voltage	V_{op}	V	—	2.0	2.5	@0.5mW
Differential resistance	Rs	Ω	—	60	130	If=5mA
Reverse voltage	Vr	V	5	—	—	Ir=-10uA
Slope efficiency	η	mW/mA	0.1	0.2	0.4	If=5mA
Side mode suppression ratio	SMSR	dB	20	30	—	@0.5mW
Peak Wavelength	λ	nm	830	845	860	@0.5mW
Beam Divergence Angle	θ	deg	—	12	—	full width, 1/e2
Optical output power	Po	mW	Bin A: 0.25~0.30			@3.5mA
			Bin B: 0.30~0.40			
			Bin C: 0.40~0.50			
			Bin D: 0.50~0.60			
			Bin E: 0.60~0.70			
			Bin F: 0.70~0.90			

■ Outline Configuration (unit: um)

1. Top contact: Anode; Bottom contact: Cathode.
2. Dimension: 220 um (width) x 220 um (length) x 100 um (thickness)
   Tolerance: ±12.5um
3. Bond pad size: 80um diameter

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