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850 nm Single-Mode VCSEL

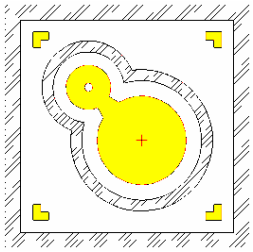
VG0A-7000-5X series

Part Number: VG0A-7000-5X

Applications: Position Sensing / Pointing device for computer

Absolute Maximum Ratings (T = 25°C):

Parameter	Symbol	Unit	Min.	Max.	Note
Forward Current	I_{max}	mA		12	
Reverse Voltage	V_r	V	5		Ir = −10uA
Operating Temperature	T_{op}	°C	0	45	
Storage Temperature	T_{stg}	°C	- 40	85	
Maximum Die Exposure	T_{max}	°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_{th}	mA	0.5	2	3	
Output power	Po	mW	0.25		0.90	@3.5 mA
Operating voltage	Vop	V			2.5	@0.5 mW
Differential Resistance	R_s	Ω		60	130	@5 mA
Reverse Voltage	V_r	V	5			@−10 μA
Slope Efficiency	η	mW/mA	0.1	0.2	0.4	@5 mA
Side Mode Suppression Ration	SMSR	dB	20	30		@0.5 mW
Peak Wavelength	λ	nm	830	845	860	@0.5 mW
Beam Divergence	θ	deg	11		13	full width, $1/e^2$

Output power binning criteria:

Bin #	Criteria		Product number
	Output power	Ith	
Bin 1	0.25mW~0.30mW	0.5mA~1.5mA	VG0A-7000-5A1
Bin 2	0.25mW~0.30mW	1.5mA~2.5mA	VG0A-7000-5A2
Bin 3	0.30mW~0.40mW	0.5mA~1.5mA	VG0A-7000-5A3
Bin 4	0.30mW~0.40mW	1.5mA~2.5mA	VG0A-7000-5A4
Bin 5	0.40mW~0.50mW	0.5mA~1.5mA	VG0A-7000-5A5
Bin 6	0.40mW~0.50mW	1.5mA~2.5mA	VG0A-7000-5A6

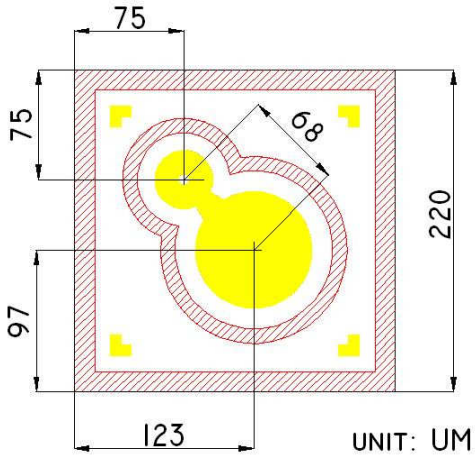
Specifications are subjected to change without notice.
Ver.8.0, Aug., 2006

Bin 7	0.50mW~0.60mW	0.5mA~1.5mA	VG0A-7000-5A7
Bin 8	0.50mW~0.60mW	1.5mA~2.5mA	VG0A-7000-5A8
Bin 9	0.60mW~0.70mW	0.5mA~1.5mA	VG0A-7000-5A9
Bin 10	0.60mW~0.70mW	1.5mA~2.5mA	VG0A-7000-5A10
Bin 11	0.70mW~0.90mW	0.5mW~1.5mA	VG0A-7000-5A11

Chip configuration:

1. Top contact: Anode; Bottom contact: Cathode.
2. Dimension: 220 um (width) x 220 um (length) x 110 um (thickness)
   Tolerance: ±12.5um
3. Bond pad size: 80um diameter.

VG0A-7000-5X series single-mode VCSEL chip dimension



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