

# 850nm Multi Mode High Power VCSEL Chip

## Specification

### Features

- High conversion efficiency
- High reliability
- Small foot print

### Ordering Information

Part Number	Description
APA6101010002	850nm MM High Power VCSEL Chip

### Electro-Optical Characteristics

All parameters at 20°C, pulsed (0.3ms on, 2.2ms period), unless otherwise noted.

PARAMETERS	SYMBOL CONDITIONS	MIN	TYP	MAX	UNIT	CONDITION
Threshold Current	$I_{th}$		120		mA	
Operating Current	$I_{op}$		1000	1300	mA	$P_{op}=900mW$
Operating Voltage	$U_{op}$		2.6	3.1	V	$I=I_{op}$
Differential Efficiency <sup>1</sup>	$\eta_{diff}$		0.85		W/A	$I=I_{op}$
Differential resistance <sup>1</sup>	$R_{diff}$		0.8		Ohm	$I=I_{op}$
Optical Output Power 50°C	$P_{50C}$	700	800	950	mW	$T=50^{\circ}C, I=I_{op}$
Power Conversion Efficiency <sup>2</sup>	$PCE_{op}$	30	35		%	$I=I_{op}$
Center Wavelength	$\lambda_{center}$	840	850	865	nm	$I=I_{op}$
Spectral Width	$\Delta\lambda_{-10dB}$		3		nm	$I=I_{op}$
Temperature Tuning Coefficient	$d\lambda/dT$		0.06		nm/K	
Beam Divergence <sup>3</sup>	$\theta_{FW1/e2}$	22	30	37	deg	$I=I_{op}$

<sup>1</sup> Defined as slope around operating current

<sup>2</sup> Evaluated from pulsed power measurement and cw voltage measurement

<sup>3</sup> FW1/e2 = full width 1/e2

### Absolute Maximum Ratings

PARAMETERS	MIN	MAX	UNIT	CONDITION
Continuous Operating Current		800	mA	
Continuous Reverse Voltage		5	V	
Peak Operating Current		1500	mA	pulsed (0.3ms on, 2.2ms period)
PCB solder or reflow temperature		260	°C	max 10 seconds

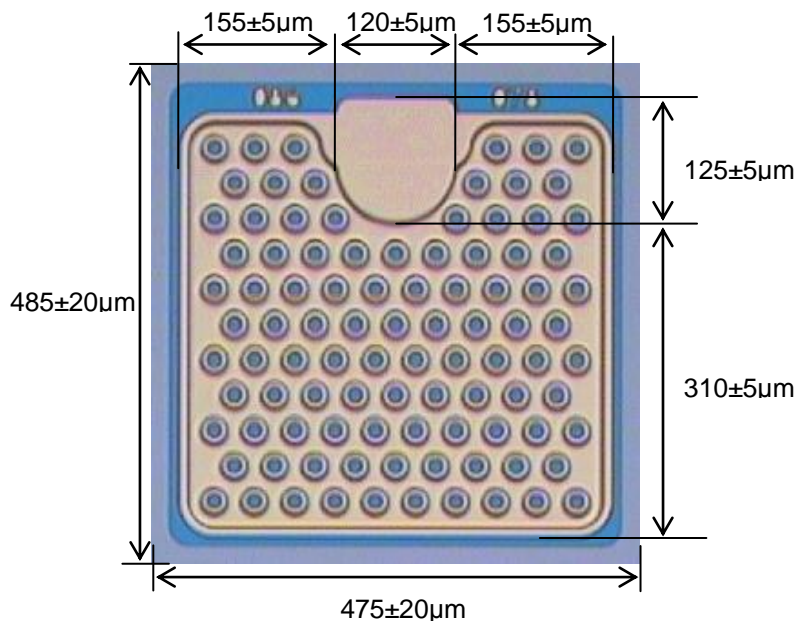
### Environmental Exposure Ratings

PARAMETERS	MIN	MAX	UNIT	CONDITION
Operating Temperature	5	50	°C	
Storage & Transport Temperature	-40	100	°C	

### Packaging and Supply

- Sawn wafer on adhesive tape
- Wafer map files describing positions of good dice

### Chip Dimensions



Chip thickness: 150±15µm

### Important Notice



THIS PRODUCT COMPLIES WITH 21CFR 1040.10



REFERENCE IEC 60825-1 Edition 2.0



Caution - use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.