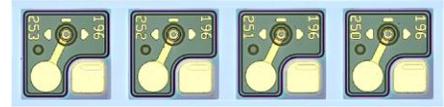




# VCCAx-85A100G

## 100Gb/s PAM4 (50GBd) 850nm Multimode VCSEL Array

Data Sheet



### Description

The Lasermate VCCAx-85A100G is an 850nm wavelength, Vertical Cavity Surface Emitting Laser (VCSEL) array with up to 12 channels. The VCSEL is designed for use in 100Gbps PAM4 application.

### Features

- 850nm multimode emission
- 1x4, 1x8, 1x12 array bar with 250um pitch
- High data rate up to 100 Gbps PAM4
- High bandwidth
- Dual top contact GS configuration
- High reliability and high humidity robustness

### Applications

- High speed Data communications
- Gigabit ethernet
- Fiber channel

### Ordering Information

Part Number	Description
VCCA4-85A100G	100Gb/s PAM4 (50GBd) 850nm multimode VCSEL 1x4 array
VCCA8-85A100G	100Gb/s PAM4 (50GBd) 850nm multimode VCSEL 1x8 array
VCCA12-85A100G	100Gb/s PAM4 (50GBd) 850nm multimode VCSEL 1x12 array

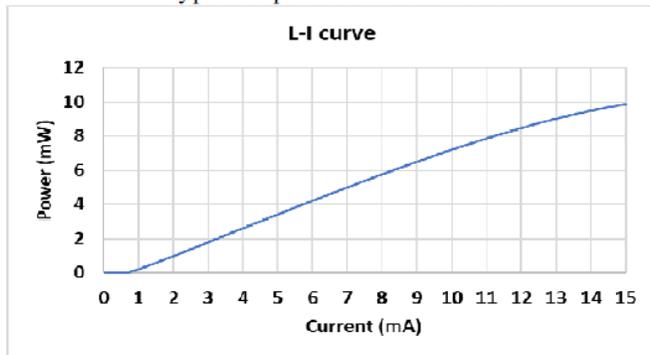
### Specifications

Absolute Maximum Ratings				
Parameters	Min.	Max.	Unit	Conditions
Storage Temperature	-40	100	°C	
Operating Temperature	0	85	°C	
Optical Output Power		10	mW	
Peak Forward Current		10	mA	
Reverse Voltage		8	V	

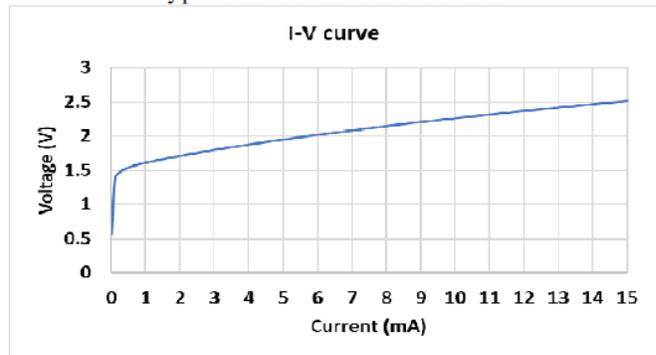
Electro-Optical Characteristics						
Parameters	Symbol	Min.	Typ.	Max.	Unit	Conditions
Threshold Current	$I_{th}$		0.6	1.0	mA	T=25°C
Slope Efficiency	$\eta$	0.65	0.85		mW/mA	T=25°C
Output Power	$P_o$	5	6		mW	$I_F=8mA$
Wavelength	$\lambda_P$	840	850	860	nm	T=0-85°C
Forward Voltage	$V_F$	2.0		2.5	V	T=25°C
Series Resistance	$R_s$	60		100	$\Omega$	T=0-85°C
Spectral Width (RMS)	$\Delta\lambda$		0.45	0.6	nm	T=25°C ( $I_F=8mA$ )
Beam Divergence	$\Theta$		28	33	degree	$I_F=8mA$ (full width $1/e^2$ )
3dB Bandwidth	$f_{3dB}$		26		GHz	T=25°C ( $I_F=8mA$ )
			25		GHz	T=85°C ( $I_F=8mA$ )
Relative Intensity Noise	RIN		-140		dB/Hz	T=25°C ( $I_F=8mA$ )

### Typical Characteristics

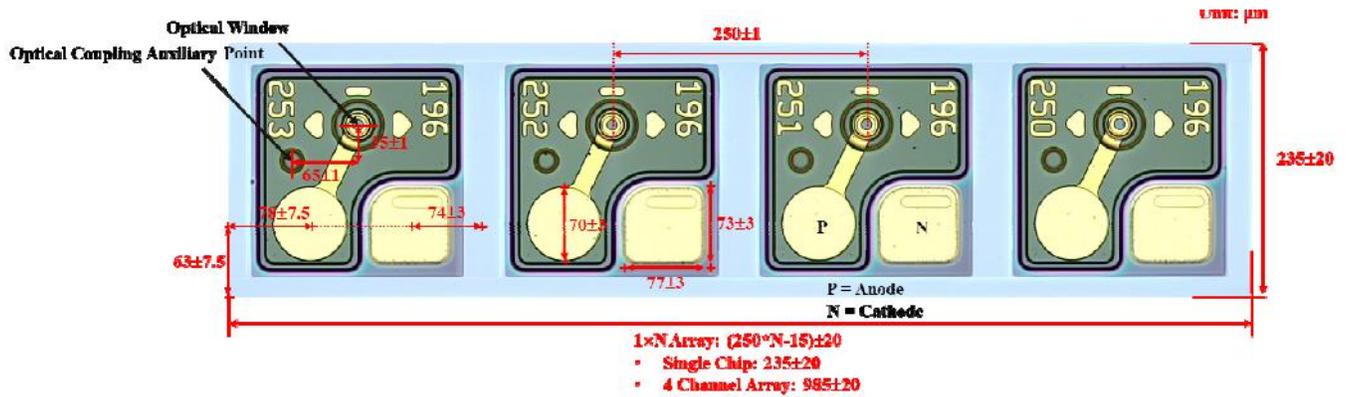
Typical Optical Characteristics



Typical Electrical Characteristics



### Outline Dimensions



- Chip length:  $235 \pm 20 \mu\text{m}$
- Chip width:  $235 \pm 20 \mu\text{m}$
- Pitch:  $250 \mu\text{m}$
- Chip thickness:  $200 \pm 12.5 \mu\text{m}$

### Additional Notes

- The inherent design of this component causes it to be sensitive to electrostatic discharge (ESD). To prevent ESD-induced damage and/or degradation to equipment, take normal ESD precautions when handling this product.
- Specifications are subject to change without notice.