28Gb/s 850nm Multimode Dual Top Contact VCSEL Chip and Array

VCCx-85A28G

Data Sheet

Description

The Lasermate VCCx-85A28G is an 850nm wavelength, Vertical Cavity Surface Emitting Laser (VCSEL) chip and chip array available with up to 12 channels. The VCSEL is designed for use in 28Gbps data rate operation.

Features

- 850nm multimode emission
- 1xN array bar with 250um pitch
- High data rate up to 28Gbps
- P and N bonding pads on top surface
- Low threshold and operation current

Applications

- High speed Data communications
- Gigabit ethernet
- Fiber channel

Product Overview

Part Number	Package
VCC-85A28G	Chip
VCCA2-85A28G	1x2 Array
VCCA4-85A28G	1x4 Array
VCCA8-85A28G	1x8 Array
VCCA12-85A28G	1x12 Array

Specifications

Absolute Maximum Ratings				
Parameters	Min.	Max.	Unit	Conditions
Storage Temperature	-40	85	°C	
Operating Temperature	-10	85	°C	
Continuous Forward Current		12	mA	
Continuous Reverse Voltage		5	V	10uA

Electro-Optical Characteristics						
Parameters	Symbol	Min.	Typ.	Max.	Unit	Conditions
Threshold Current	I_{th}	0.5	0.6	0.9	mA	
Slope Efficiency	η	0.3	0.4	0.5	mW/mA	I_F=6mA
Output Power	P_o	1.65	2.2	3.0	mW	I_F=6mA
Wavelength	λ_P	840		860	nm	I_F=6mA
Forward Voltage	V_F		1.9	2.3	V	I_F=6mA
Series Resistance	R_S		50	85	Ω	I_F=6mA
Spectral Width (RMS)	$\Delta\lambda$		0.5	0.6	nm	I_F=6mA
Beam Divergence	Θ		28	33	degree	I_F=6mA (1/e^2)
Rise Times (20% to 80%)	Tr		16		ps	I_F=6mA
Fall Times (20% to 80%)	Tf		20		ps	I_F=6mA
3dB Bandwidth	BW	15	16		GHz	I_F=6mA
Relative Intensity Noise	RIN		-140	-135	dB/Hz	I_F=7mA, T=25°C

Note: All parameters except mentioned are measured at I_F=6mA, 25°C, CW operation.

Typical Characteristics

Fig. 1 Typical Optical Characteristics

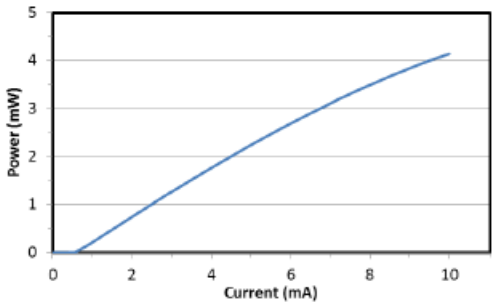
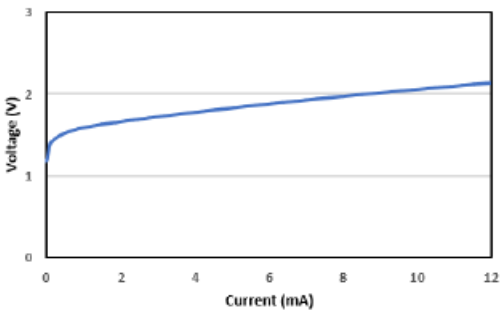
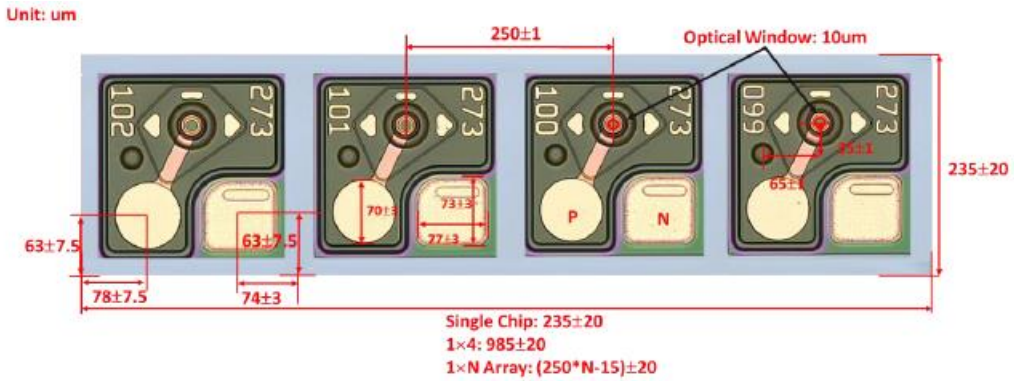


Fig. 2 Typical Electrical Characteristics



Outline Dimensions



- Chip length: 235±20um
- Chip width: 235±20um
- Pitch: 250um
- Chip thickness: 150±12.5um

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.