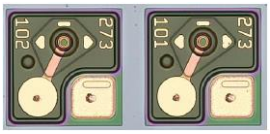
56Gb/s PAM4 (28GBd) 850nm Multimode Dual Top Contact VCSEL Array

VCCx-85A56G

Data Sheet



Description

The Lasermate VCCx-85A56G 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 56Gbps PAM4 application.

Features

- 850nm multimode emission
- 1xN array bar with 250um pitch
- High data rate up to 56 Gbps PAM4
- 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
VCCA2-85A56G	1x2 Array
VCCA4-85A56G	1x4 Array
VCCA8-85A56G	1x8 Array
VCCA12-85A56G	1x12 Array

Specifications

Absolute Maximum Ratings				
Parameters	Min.	Max.	Unit	Conditions
Storage Temperature	-40	100	°C	
Operating Temperature	-10	85	°C	
Maximum Operating Current		10	mA	
Continuous Reverse Voltage		5	V	

Electro-Optical Characteristics						
Parameters	Symbol	Min.	Typ.	Max.	Unit	Conditions
Threshold Current	I_{th}		0.55		mA	
Slope Efficiency	η		0.6		mW/mA	I_F=7mA
Output Power	P_o		3.8		mW	I_F=7mA
Wavelength	λ_P	840		860	nm	I_F=7mA
Forward Voltage	V_F		1.9	2.3	V	I_F=7mA
Series Resistance	R_S		60	85	Ω	I_F=7mA
Spectral Width (RMS)	$\Delta\lambda$		0.3		nm	I_F=7mA
Beam Divergence	Θ		28	33	degree	I_F=7mA (1/e^2)
3dB Bandwidth	BW		20		GHz	I_F=7mA
Relative Intensity Noise	RIN		-140	-135	dB/Hz	I_F=7mA, T=25ºC

Note: All parameters except mentioned are measured at I_F=7mA, 25°C, CW operation.

Typical Characteristics

Fig. 1 Typical Optical Characteristics

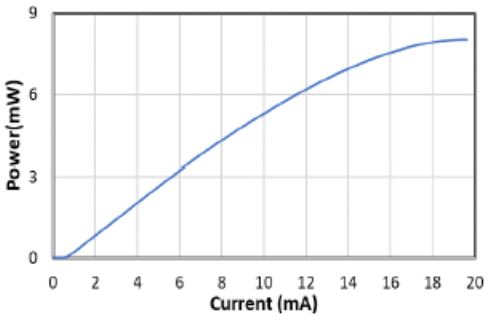
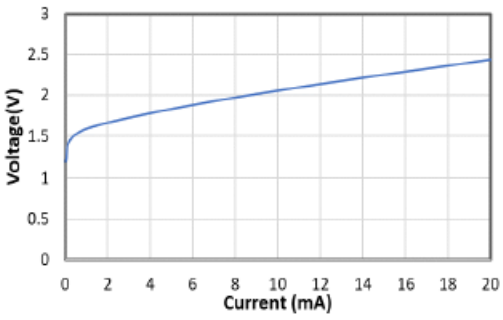
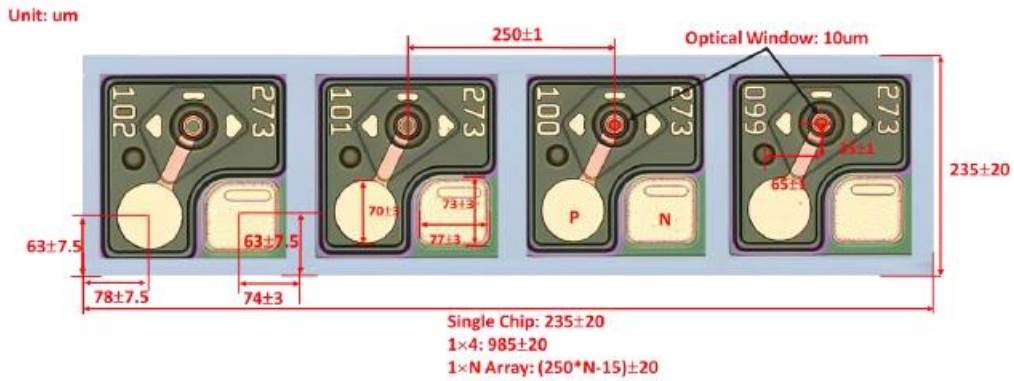


Fig. 2 Typical Electrical Characteristics



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.