



VCCAx-85D10G

10Gbps Coplanar Oxide VCSEL Array

Data Sheet



Description

The Lasermate VCCAx-85D10G is an 850nm wavelength, Vertical Cavity Surface Emitting Laser (VCSEL) array with up to 12 channels. The VCSEL is designed for use in 10Gbps data rate application.

Features

- 850nm oxide VCSEL chip 1x4, 1x8, 1x12 array bar with 250um pitch
- High data rate capable of running 10Gbps
- P and N bonding pads on top surface
- Wide operation temperature range -40 to 85°C

Applications

- High speed Data communications
- Gigabit ethernet
- Fiber channel

Ordering Information

Part Number	Description
VCCA4-85D10G	10Gbps Coplanar Oxide VCSEL 1x4 array
VCCA8-85D10G	10Gbps Coplanar Oxide VCSEL 1x8 array
VCCA12-85D10G	10Gbps Coplanar Oxide VCSEL 1x12 array

Specifications

Absolute Maximum Ratings				
Parameters	Min.	Max.	Unit	Conditions
Storage Temperature	-40	125	°C	
Operating Temperature	-40	85	°C	
Continuous Forward Current		10	mA	
Continuous Reverse Voltage		5	V	10uA

Electro-Optical Characteristics						
Parameters	Symbol	Min.	Typ.	Max.	Unit	Conditions
Threshold Current	I_{th}		0.8	1.2	mA	
Slope Efficiency	η	0.25	0.3	0.5	mW/mA	$I_f=6mA$
Optical Output Power	P_o		1.6		mW	$I_f=6mA$
Peak Wavelength	λ_P	840		860	nm	$I_f=6mA$
Spectral Width (RMS)	$\Delta\lambda$		0.35	0.45	nm	$I_f=6mA$
Beam Divergence	θ	15		35	°	$I_f=6mA, (1/e^2)$
Forward Voltage	V_f		2.0	2.4	V	$I_f=6mA$
Series Resistance	R_s		55	60	Ohm	$I_f=6mA$
Rise Time (20%-80%)	T_r		40		ps	$I_f=6mA$
Fall Time (20%-80%)	T_f		40		ps	$I_f=6mA$
3dB Bandwidth	BW	9			GHz	$I_f=6mA$

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



Typical Characteristics

Fig. 1 Typical Optical Characteristics

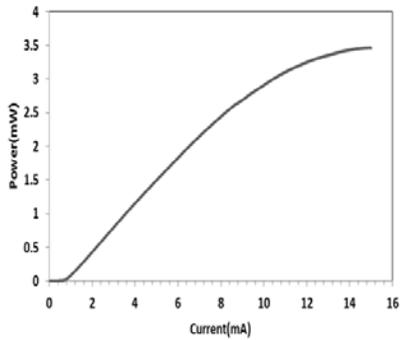
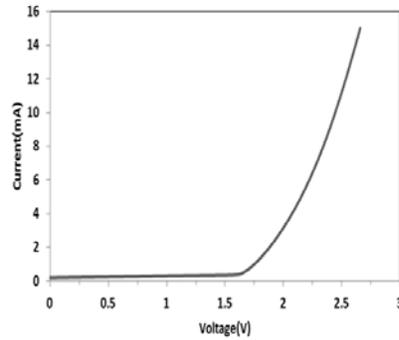
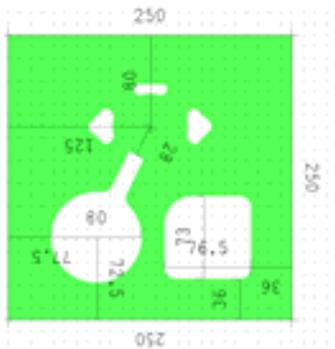


Fig. 2 Typical Electrical Characteristics



Outline Dimensions



- Chip length: 220μm
- Chip width: 220μm
- Chip thickness: 150 ± 20μm

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.