



## VCC-85B10G

### 10Gbps 850nm Non-Hermetic Oxide VCSEL Chip

#### Description

The Lasermate VCC-85B10G is an 850nm wavelength, Vertical Cavity Surface Emitting Laser (VCSEL) chip in non-hermetic design, suitable for not sealed package type, and designed for use in 10Gbps data rate operation.

#### Features

- 850nm oxide VCSEL chip
- High data rate capable of running 10Gbps
- P and N bonding pads on different surfaces
- Low divergence angle to ensure high optical coupling efficiency
- Wide operation temperature range -40 to 85°C
- Non-hermetic design, suitable for not sealed package type

#### Applications

- High speed Data communications
- Gigabit ethernet
- Fiber channel

#### Specifications

Absolute Maximum Ratings				
Parameters	Min.	Max.	Unit	Conditions
Storage Temperature	-40	125	°C	
Operating Temperature	-40	85	°C	
Continuous Forward Current		15	mA	
Continuous Reverse Voltage		14	V	10uA

Electro-Optical Characteristics						
Parameters	Symbol	Min.	Typ.	Max.	Unit	Conditions
Threshold Current	$I_{th}$		0.85		mA	
Slope Efficiency	$\eta$	0.20	0.40	0.65	W/A	$I_f=6mA$
Optical Output Power	$P_o$		2.2		mW	$I_f=6mA$
Peak Wavelength	$\lambda_p$	840		860	nm	$I_f=6mA$
Spectral Bandwidth (RMS)	$\Delta\lambda$	0.20		0.45	nm	$I_f=6mA$
Beam Divergence	$\theta$		24	30	°	$I_f=6mA, (1/e^2)$
Forward Voltage	$V_f$	2.20	2.35	2.50	V	$I_f=6mA$
Series Resistance	$R_s$	70	90	100	Ohm	$I_f=6mA$
Reverse Current	$I_r$	-1		0	nA	$V_R=-14V$
3dB Bandwidth	BW	8			GHz	$I_f=6mA$

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

## Typical Characteristics

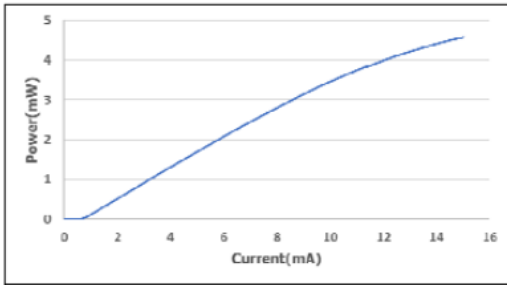


Fig. 1 Typical Optical Characteristics

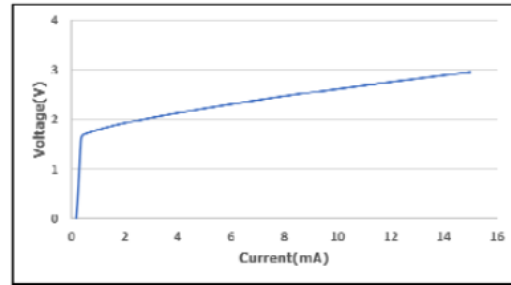
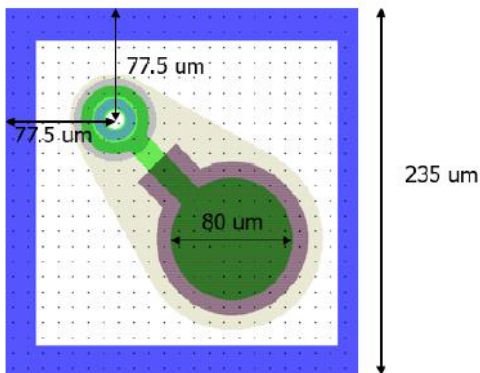


Fig. 2 Typical Electrical Characteristics

## Outline Dimensions

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



## 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.