



High Performance 10Gbps 850nm Oxide VCSEL Chip

Part No. VCC-85B10G

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



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	η	0.20	0.40	0.65	W/A	$I_f=6mA$
Optical Output Power	P_o		2.2		mW	$I_f=6mA$
Peak Wavelength	λ_p	840		860	nm	$I_f=6mA$
Spectral Bandwidth (RMS)	$\Delta\lambda$	0.20		0.45	nm	$I_f=6mA$
Beam Divergence	θ		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 $I_f=6mA, 25^\circ C, CW$ operation.

Typical Characteristics

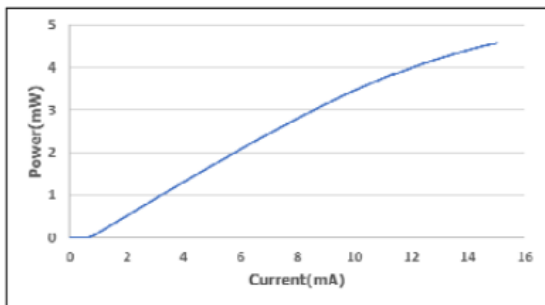


Fig. 1 Typical Optical Characteristics

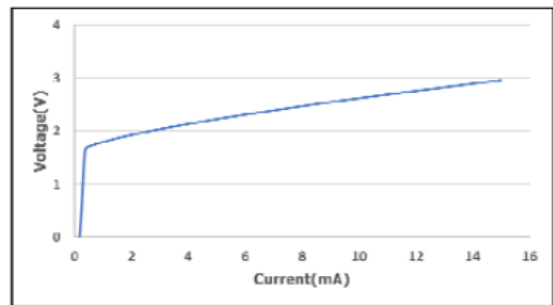
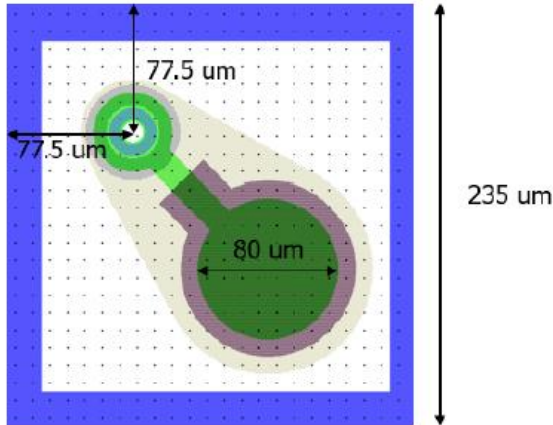


Fig. 2 Typical Electrical Characteristics

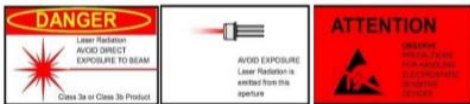


Outline Dimensions

- 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.

The VCSEL is a class 3B laser in the safety standard IEC 60825:2014 and should be treated as a potential eye hazard. Due to the size of the component, the applicable warning logotype, aperture label, and certification/identification label cannot be placed on the component itself.

Note: Specifications are subject to change without notice.