



4Gbps 850nm Oxide-Confined VCSEL Chip

Part No. VCC-85A4G

Features

- 850nm oxide-confined VCSEL chip
- High data rate 4Gbps
- High slope efficiency
- High light output power with low bias



Specifications

Absolute Maximum Ratings				
Parameters	Min.	Max.	Unit	Conditions
Storage Temperature	-40	125	°C	
Operating Temperature	0	85	°C	
Process Temperature		260	°C	10 seconds
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}		2	3	mA	
Slope Efficiency	η	0.35	0.50		W/A	$I_f=6mA$
Optical Output Power	P_o		2.0		mW	$I_f=6mA$
Peak Wavelength	λ_p	830	850	860	nm	$I_f=6mA$
Spectral Width (RMS)	$\Delta\lambda$			0.85	nm	$I_f=6mA$
Beam Divergence	Θ		16	25	°	$I_f=6mA$ (FWHM)
Forward Voltage	V_f		1.8	2.2	V	$I_f=6mA$
Series Resistance	R_s		45	60	Ohm	$I_f=6mA$

Thermal Characteristics						
Parameters	Symbol	Min.	Typ.	Max.	Unit	Conditions
I_{th} Temperature Variation	ΔI_{th}	-1.5		2	mA	$T_a=0$ to $70^\circ C$
V_f Temperature Coefficient	$\Delta V_f/\Delta T$		-2		mV/°C	$T_a=0$ to $70^\circ C$, $I_f=6mA$
η Temperature Coefficient	$\Delta\eta/\Delta T$		-0.5		%/°C	$T_a=0$ to $70^\circ C$, $I_f=6mA$
λ Temperature Coefficient	$\Delta\lambda/\Delta T$		0.06		nm/°C	$T_a=0$ to $70^\circ C$, $I_f=6mA$



Typical Characteristics

Fig .1 Typical Optical Characteristics

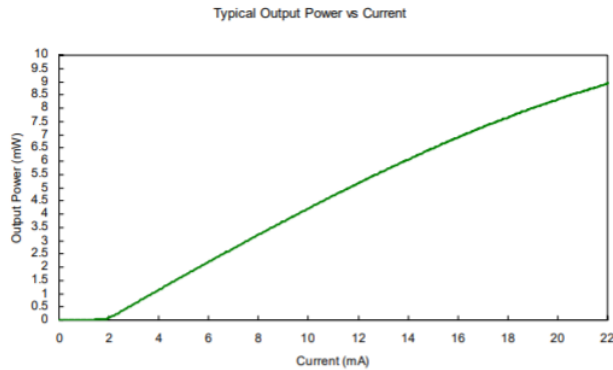
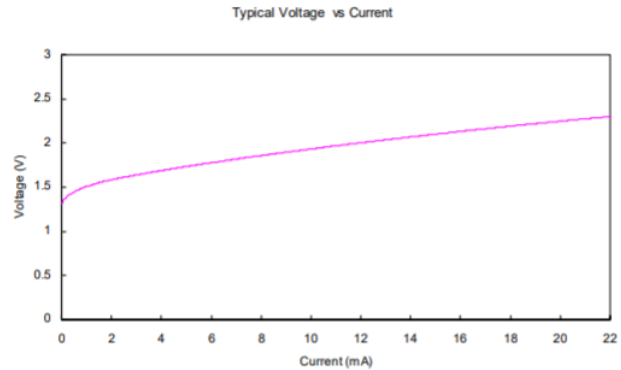
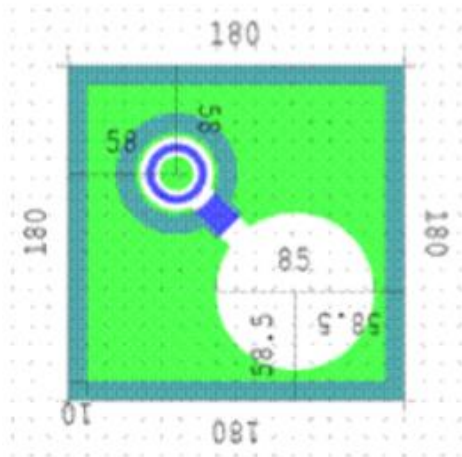


Fig .2 Typical Electrical Characteristics

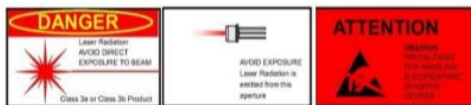


Outline Dimensions

- Chip Length: 180 μm
- Chip Width: 180 μm
- Chip Thickness: 200 \pm 15 μm



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 IIIb laser in the safety standard ANSI Z136.1 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.