



Multimode 850nm 1x4 VCSEL Array

VCCA4-85M2G

Data Sheet



Features

- 850nm VCSEL array (1x4)
- High uniformity
- Data rates >2.5Gbps per channel

Applications

- High speed Data communications
- Gigabit ethernet
- Fiber channel

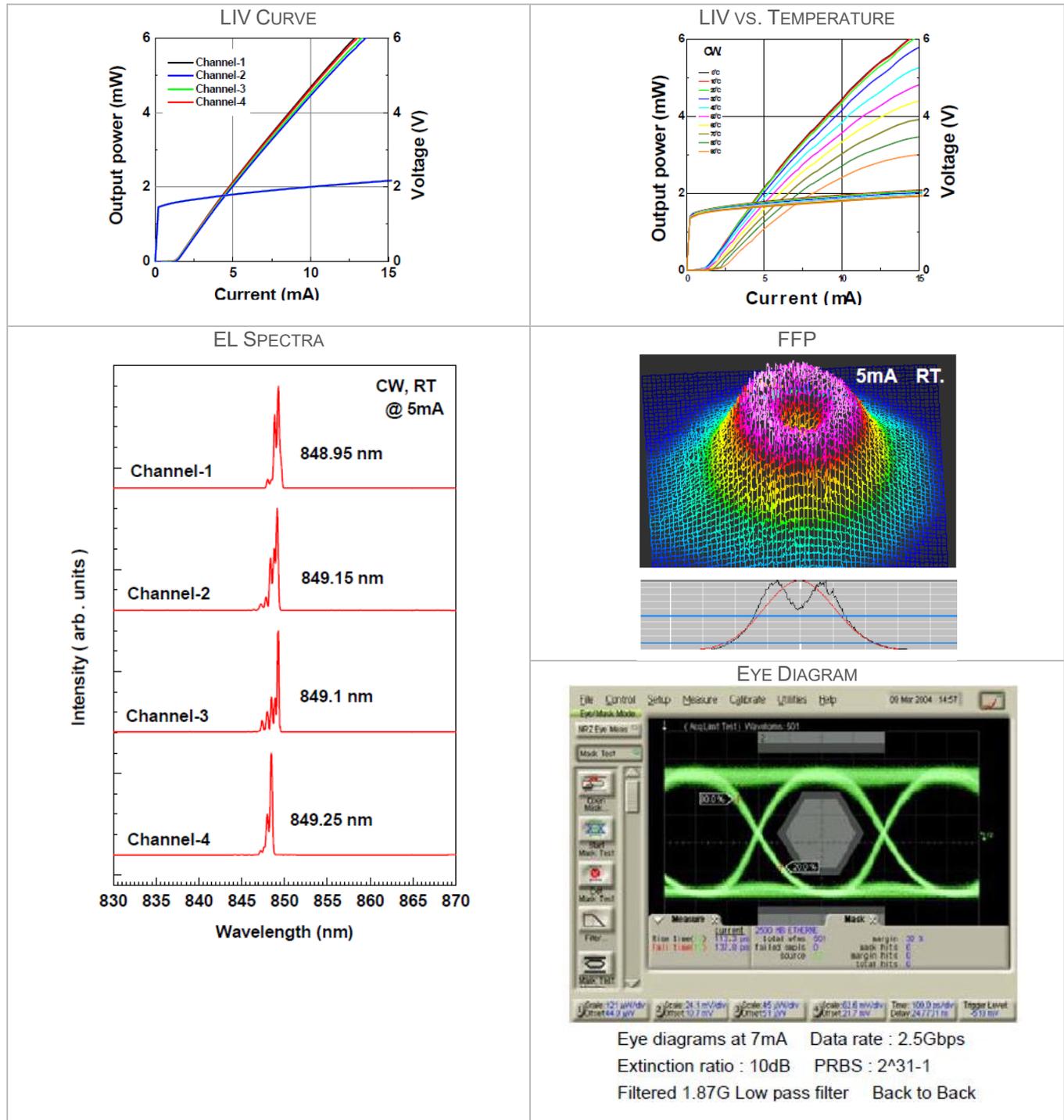
Specifications

Absolute Maximum Ratings						
Parameters	Min.	Max.	Unit	Conditions		
Storage Temperature	-40	100	°C			
Operating Temperature	0	85	°C			
Continuous Forward Current		12	mA			
Continuous Reverse Voltage		5	V	10uA		

Electro-Optical Characteristics (T _a =25°C unless otherwise stated)						
Parameters	Symbol	Min.	Typ.	Max.	Unit	Conditions
Threshold Current	I _{th}		1.5	2.5	mA	CW
Slope Efficiency	η	0.3	0.5	0.7	W/A	I _f =5mA
Optical Output Power	P _o		2.0		mW	I _f =5mA
P _o Uniformity within Array	Δ P _o			0.4	mW	I _f =5mA
Peak Wavelength	λ _p	840	850	860	nm	I _f =5mA
Spectral Bandwidth (RMS)	Δλ			0.85	nm	I _f =5mA
λ Uniformity within Array	Δλ _p			1	nm	I _f =5mA
Beam Divergence	Θ	14		30	°	P _o =2.0mW, (Full Width, 1/e ²)
Forward Voltage	V _f		1.8	2.2	V	I _f =5mA
Breakdown Voltage	V _b		-10		V	
Dynamic Resistance	R _d	20	35	55	Ohm	I _f =5mA
Rise and Fall Times	t _r /t _f			110	ps	20% to 80%

Thermal Characteristics						
Parameters	Symbol	Min.	Typ.	Max.	Unit	Conditions
I _{th} Temperature Variation	ΔI _{th}		1.5		mA	T _a =0 to 85°C
I _{th} Uniformity within Array	ΔI _{th} ^a			0.5	mA	CW
η Temperature Coefficient	Δη/ΔT		-0.5		%/°C	T _a =0 to 85°C, I _f =5mA
λ Temperature Coefficient	Δλ/ΔT		0.06		nm/°C	T _a =0 to 85°C, I _f =5mA

Typical Characteristic Curves

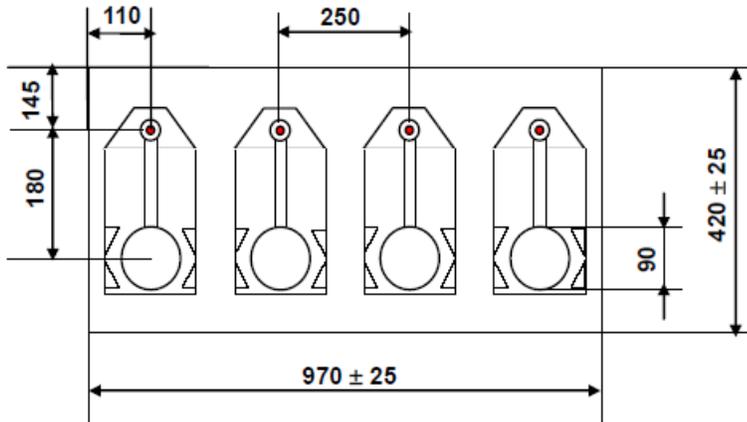


Eye diagrams at 7mA Data rate : 2.5Gbps
 Extinction ratio : 10dB PRBS : 2^31-1
 Filtered 1.87G Low pass filter Back to Back

Outline Dimensions

Unit: μm

Die Height: $200 \pm 15 \mu\text{m}$



Additional Notes

- High power or sub-milliampere threshold current may be provided on request.
- Tighter wavelength specifications may be available upon request.
- 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.