



# Multimode 850nm 1x12 VCSEL Array

## VCCA12-85M2G

Data Sheet



### Features

- 850nm VCSEL array (1x12)
- High uniformity
- Data rates >2.5Gbps per channel

### Applications

- High speed Data communications
- Gigabit ethernet
- Fiber channel

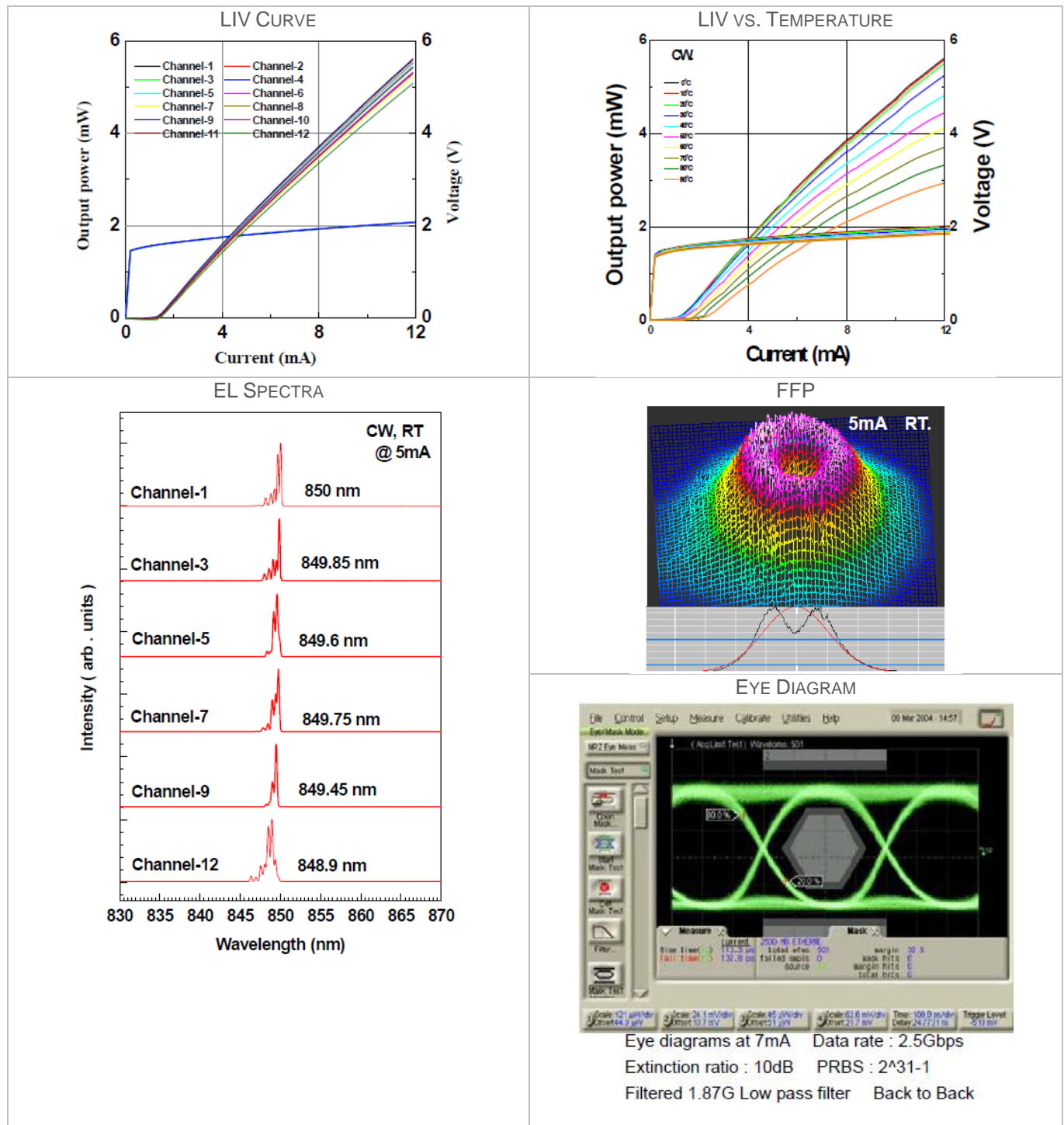
### Specifications

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 <sub>a</sub> =25°C unless otherwise stated)						
Parameters	Symbol	Min.	Typ.	Max.	Unit	Conditions
Threshold Current	I <sub>th</sub>		1.5	2.5	mA	CW
Slope Efficiency	η	0.3	0.5	0.7	W/A	I <sub>f</sub> =5mA
Optical Output Power	P <sub>o</sub>		2.0		mW	I <sub>f</sub> =5mA
P <sub>o</sub> Uniformity within Array	Δ P <sub>o</sub>			0.4	mW	I <sub>f</sub> =5mA
Peak Wavelength	λ <sub>p</sub>	840	850	860	nm	I <sub>f</sub> =5mA
Spectral Bandwidth (RMS)	Δλ			0.85	nm	I <sub>f</sub> =5mA
λ Uniformity within Array	Δλ <sub>p</sub>			1	nm	I <sub>f</sub> =5mA
Beam Divergence	Θ	14		30	°	P <sub>o</sub> =2.0mW, (Full Width, 1/e <sup>2</sup> )
Forward Voltage	V <sub>f</sub>		1.8	2.2	V	I <sub>f</sub> =5mA
Breakdown Voltage	V <sub>b</sub>		-10		V	
Dynamic Resistance	R <sub>d</sub>	20	35	55	Ohm	I <sub>f</sub> =5mA
Rise and Fall Times	t <sub>r</sub> /t <sub>f</sub>			110	ps	20% to 80%

Thermal Characteristics						
Parameters	Symbol	Min.	Typ.	Max.	Unit	Conditions
I <sub>th</sub> Temperature Variation	ΔI <sub>th</sub>		1.5		mA	T <sub>a</sub> =0 to 85°C
I <sub>th</sub> Uniformity within Array	ΔI <sub>th</sub> <sup>a</sup>			0.5	mA	CW
η Temperature Coefficient	Δη/ΔT		-0.5		%/°C	T <sub>a</sub> =0 to 85°C, I <sub>f</sub> =5mA
λ Temperature Coefficient	Δλ/ΔT		0.06		nm/°C	T <sub>a</sub> =0 to 85°C, I <sub>f</sub> =5mA

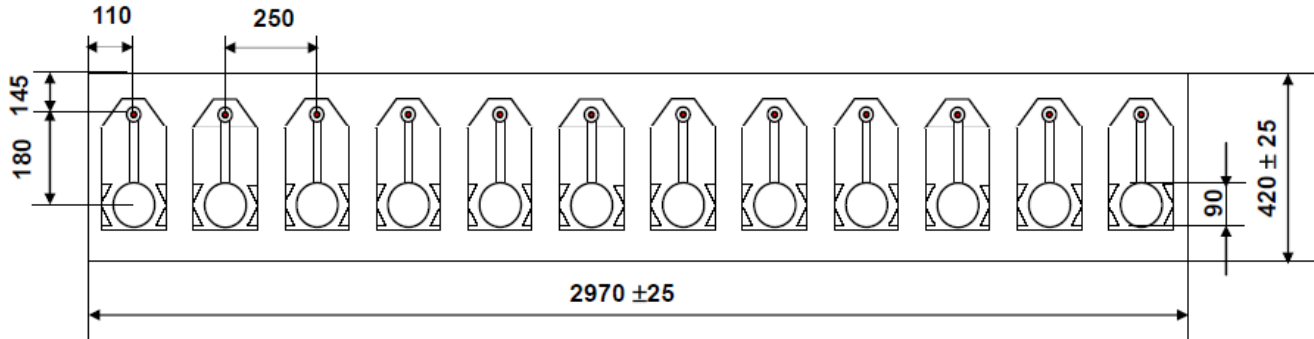
Typical Characteristic Curves



## Outline Dimensions

Unit:  $\mu\text{m}$

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.