



850nm 40mW VCSEL Chip for Sensor VCC-85G40A



Features

- 850nm multi-emitter VCSEL chip
- Output power: 40mW
- Gaussian beam profile
- High reliability

Applications

- Consumer electronics
- Safety sensor
- Illumination light source
- Gesture sensor light source

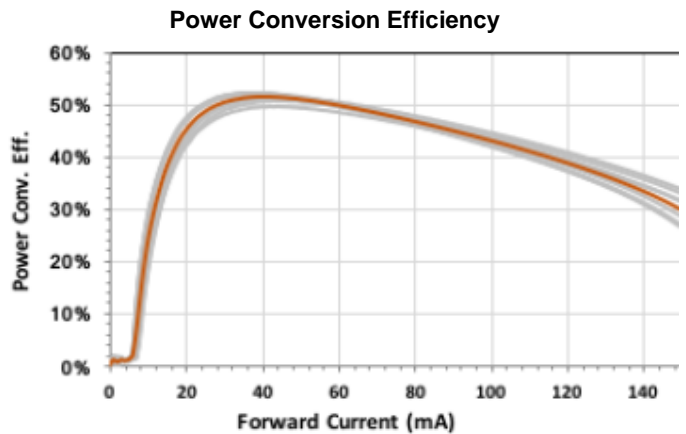
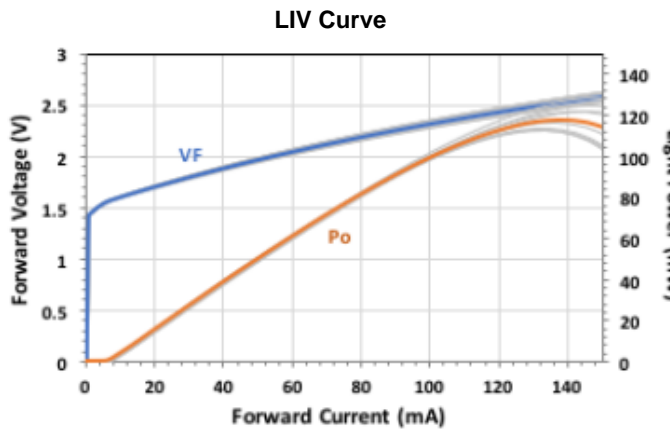
Specifications

Absolute Maximum Ratings				
Parameters	Min.	Max.	Unit	Conditions
Storage Temperature	-40	85	°C	
Operating Temperature	-10	70	°C	
Continuous Forward Current		60	mA	

Electro-Optical Characteristics (T _a =25°C unless otherwise stated)						
Parameters	Symbol	Min.	Typ.	Max.	Unit	Conditions
Threshold Current	I _{th}		7.0		mA	CW
Slope Efficiency	η		1.0		W/A	I _f =45mA
Optical Output Power	P _o		40		mW	I _f =45mA
Peak Wavelength	λ _p	840	850	860	nm	I _f =45mA
Beam Divergence	Θ		13		°	P _o =40mW (FWHM)
Spectral Bandwidth (RMS)	Δλ			2	nm	I _f =45mA
Forward Voltage	V _f		1.9	2.3	V	I _f =45mA
Breakdown Voltage	V _b	-10			V	
Dynamic Resistance	R _d		8		Ohm	I _f =45mA

Thermal Characteristics						
Parameters	Symbol	Min.	Typ.	Max.	Unit	Conditions
I _{th} Temperature Variation	ΔI _{th}		3.0		mA	T _a =-10 to 70°C
λ Temperature Coefficient	Δλ/ΔT		0.06		nm/°C	T _a =-10 to 70°C, I _f =45mA
η Temperature Variation	Δη/ΔT		-0.5		%/°C	T _a =-10 to 70°C, I _f =40mA

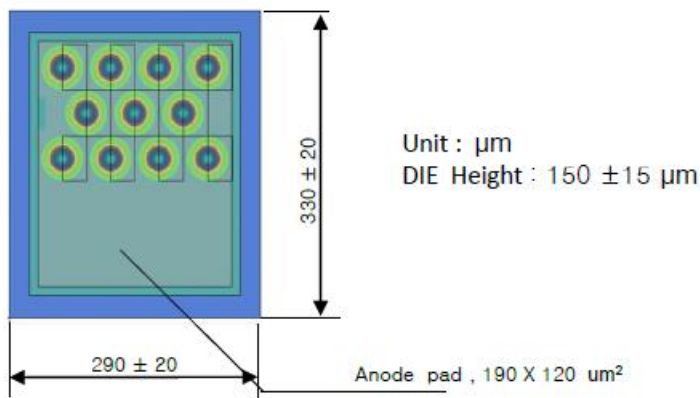
Typical Characteristics



Test PKG sample: TO-can type, TO-46
 Test condition: CW: IF step interval 1.0mA, Delay time 2msec

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 Test condition: CW: IF step interval 1.0mA, Delay time 2msec

Outline Dimensions



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.