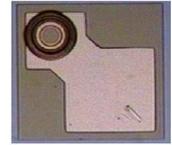




VCC-94A8H

940nm 8mW VCSEL Chip



Features

- 940nm single emitter VCSEL chip
- Typical 8mW output power at 10mA
- High reliability
- Multimode beam profile
- Chip size: 155um x 155um
- Chip thickness: 150um

Applications

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

Specifications

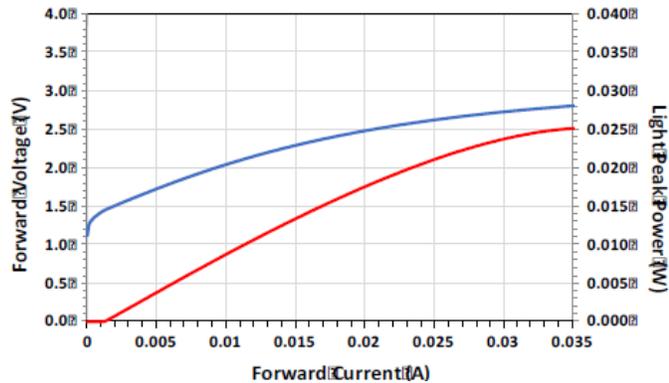
Absolute Maximum Ratings					
Parameters	Min.	Max.	Unit	Conditions	
Storage Temperature	-40	85	°C		
Operating Temperature	-10	70	°C		
Continuous Forward Current		15	mA		

Electro-Optical Characteristics (T _a =25°C unless otherwise stated)						
Parameters	Symbol	Min.	Typ.	Max.	Unit	Conditions
Threshold Current	I _{th}		1.5		mA	CW
Slope Efficiency	η		1.0		W/A	I _f =10mA
Optical Output Power	P _o		8		mW	I _f =10mA
Peak Wavelength	λ _p	930	940	950	nm	I _f =10mA
Spectral Bandwidth (RMS)	Δλ			2	nm	I _f =10mA
Beam Divergence	Θ		20		°	P _o =10mW (FWHM)
Operating Voltage	V _f		2.1	2.3	V	I _f =10mA
Breakdown Voltage	V _b	-7			V	
Dynamic Resistance	R _d		60		Ohm	I _f =10mA

Thermal Characteristics						
Parameters	Symbol	Min.	Typ.	Max.	Unit	Conditions
I _{th} Temperature Variation	ΔI _{th}		2.0		mA	T _a =-10 to 70°C
λ Temperature Coefficient	Δλ/ΔT		0.06		nm/°C	T _a =-10 to 70°C, I _f =10mA
η Temperature Variation	Δη/ΔT		-0.5		%/°C	T _a =-10 to 70°C, I _f =10mA

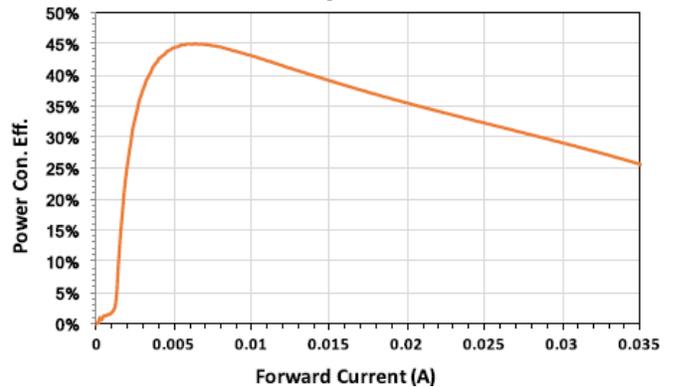
Typical Characteristics

LIV Curve



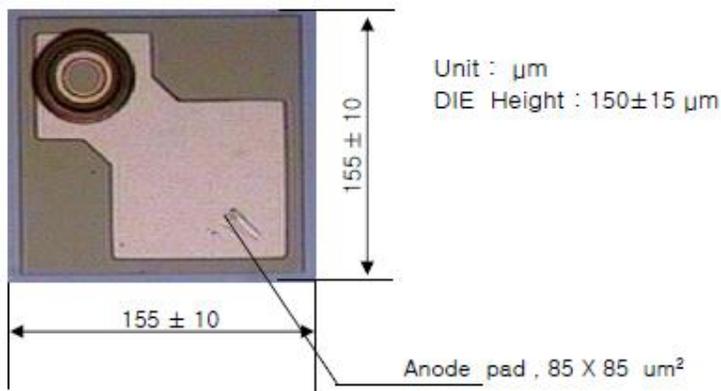
Test PKG sample: TO-Can type, TO-46
 Test condition: CW mode: IF step interval 0.45mA, Delay time 2msec

Power Conversion Efficiency



Test PKG sample: TO-Can type, TO-46
 Test condition: CW mode: IF step interval 0.45mA, Delay time 2msec

Outline Diagram



Additional Notes

- Stresses greater than those listed under “Absolute Maximum Ratings” may cause permanent damage to the device. This is a stress rating only and functional operation of the device at these or other conditions above those indicated in the operations section for expanded periods of time may affect reliability.
- In its maximum rating diode laser operation could damage its performance or cause potential safety hazard such as equipment failure.
- Electrostatic discharge is the main reason for laser fault of the diode. Take effective precautions against ESD. When dealing with laser diodes, use wrist strap, grounding work surface and strict antistatic technology.
- 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.