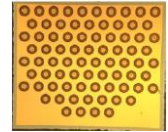




# 850nm 350mW VCSEL Chip

## VCC-85A350H



### Features

- 850nm wavelength range
- Typical 350mW output power at 400mA
- Multimode beam profile
- Multiple mesa type
- High reliability
- Chip size: 950 x 820  $\mu\text{m} \pm 15 \mu\text{m}$
- Chip thickness: 100  $\pm 15 \mu\text{m}$

### Applications

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

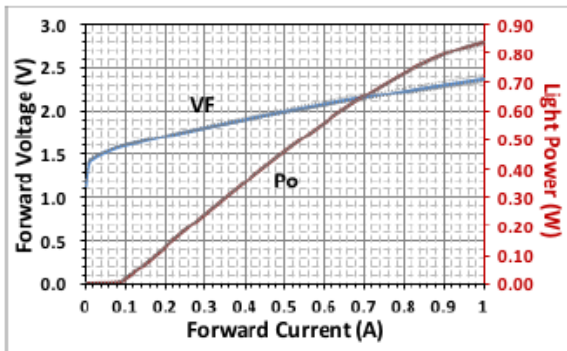
### Specifications

Absolute Maximum Ratings				
Parameters	Symbol	Rating	Unit	Conditions
Storage Temperature	$T_{\text{stg}}$	-40 to 85	$^{\circ}\text{C}$	
Operating Temperature	$T_{\text{op}}$	-10 to 85	$^{\circ}\text{C}$	
Continuous Forward Current		550	mA	

Electro-Optical Characteristics ( $T_a=25^{\circ}\text{C}$ unless otherwise stated)						
Parameters	Symbol	Min.	Typ.	Max.	Unit	Conditions
Threshold Current	$I_{\text{th}}$		85.0		mA	CW
Slope Efficiency	$\eta$		1.0		W/A	$I_f=400\text{mA}$
Optical Output Power	$P_o$		350		mW	$I_f=400\text{mA}$
Peak Wavelength	$\lambda_p$	840	850	860	nm	$I_f=400\text{mA}$
Spectral Bandwidth	$\Delta\lambda$			2.0	nm	$I_f=400\text{mA}$
Beam Divergence	$\Theta$		20		$^{\circ}$	$P_o=350\text{mW}$ (FWHM)
Forward Voltage	$V_f$		1.9	2.2	V	$I_f=400\text{mA}$
Breakdown Voltage	$V_b$	-10			V	
Dynamic Resistance	$R_d$		1		Ohm	$I_f=400\text{mA}$
$\lambda$ Temperature Variation	$\Delta\lambda/\Delta T$		0.06		nm/ $^{\circ}\text{C}$	$T_a=-10$ to $70^{\circ}\text{C}$ at 400mA
$I_{\text{th}}$ Temperature Variation	$\Delta I_{\text{th}}$		20.0		mA	$T_a=-10$ to $70^{\circ}\text{C}$

### Typical Characteristics

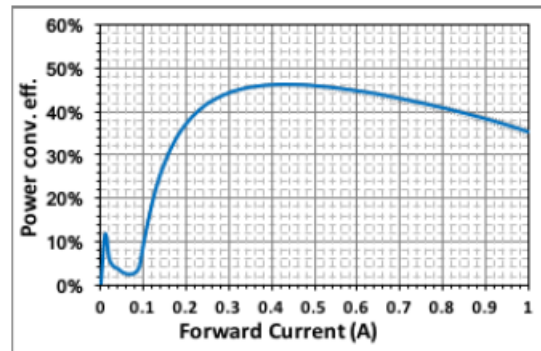
LIV Curve



Test PKG sample: TO-Can type, TO-46

Test Condition: CW Mode: IF Step interval 6mA, Delay time 2msec

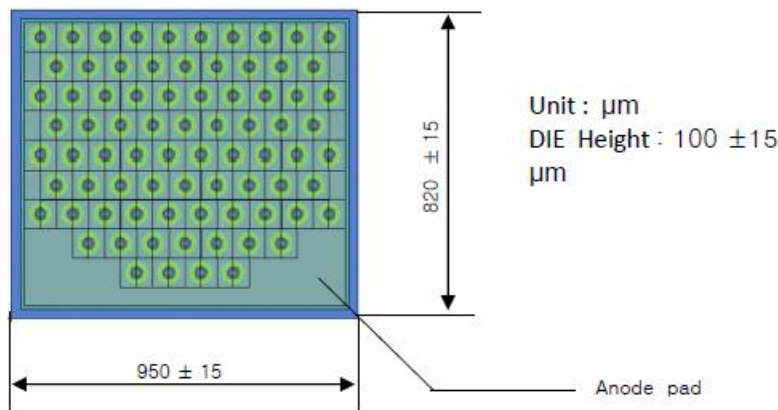
Power Conversion Efficiency



Test PKG sample: TO-Can type, TO-46

Test Condition: CW Mode: IF Step interval 6mA, 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.