

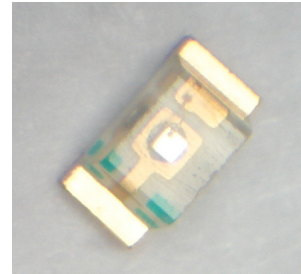
Features

- : 850nm wavelength range
- : Single mode transverse and longitudinal mode
- : High reliability
- : **High resistance to ESD**
- : Cost effective
- : Other configurations available on request

Applications

- : Consumer electronics
- Laser mouse
- Laser printer
- Safety sensor
- Engine management system

Description

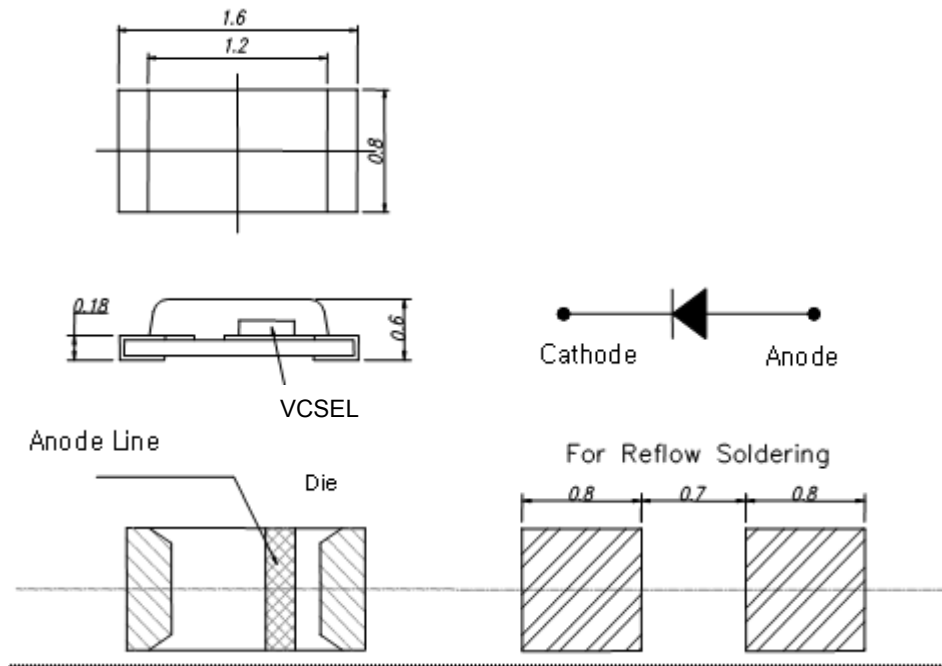


Absolute Maximum Ratings

Parameter	Rating
Storage Temperature	-40 to 85 °C
Operating Temperature	-10 to 50 °C
Lead Solder Temperature	260 °C, 5 sec
Continuous Forward Current	8mA
Continuous Reverse Voltage	5V (@10µA)

Dimensions

Units: mm

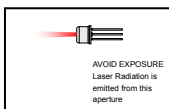
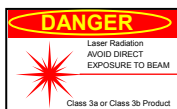


Electro-Optics Characteristics ($T_a=25^{\circ}\text{C}$ unless otherwise stated)

Parameters	Symbol	Specified			Unit	Test Conditions
		Min.	Typ.	Max.		
Threshold Current	I_{th}		2	3	mA	CW
I_{th} Temperature Variation	ΔI_{th}		1.5		mA	$T_a = -10$ to 70°C
Slope Efficiency	η	0.20	0.35		W/A	$I_f = 3.5\text{mA}$
η Temperature Variation	$\Delta \eta / \Delta T$		-0.5		%/ $^{\circ}\text{C}$	$T_a = -10$ to 70°C at 5mA
Optical Output Power	P_o	0.3		0.7	mW	$I_f = 3.5\text{mA}$
Peak Wavelength	λ	830	850	860	nm	$I_f = 3.5\text{mA}$
λ Temperature Variation	$\Delta \lambda / \Delta T$		0.06			$T_a = -10$ to 70°C at 3.5mA
Beam Divergence	Θ		8		$^{\circ}$	$I_f = 3.5\text{mA}$, (FWHM)
Operating Voltage	V_f		1.7	2.1	V	$I_f = 3.5\text{mA}$
Breakdown Voltage	V_b		-10		V	
Dynamic Resistance	R_d		70	100	Ohm	$I_f = 3.5\text{mA}$
Side mode suppression ratio	SMSR	15			dB	$P_o = 1\text{mW}$
Max. singlemode Power	P_{SM}		1.0	1.3	mW	SMSR > 15dB

Notes

* These specifications are subject to change without notice.



NOTICE

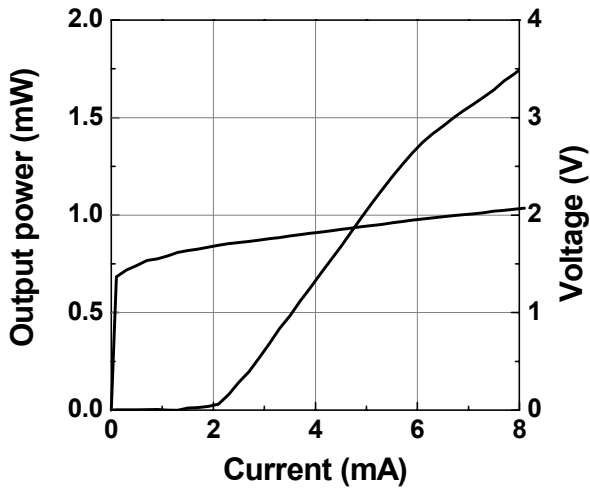
The inherent design of this component causes it to be sensitive to electrostatic discharge(ESD). To prevent ESD-induced damage and/or degradation to equipment, take normal ESD precautions when handling this product

DANGER

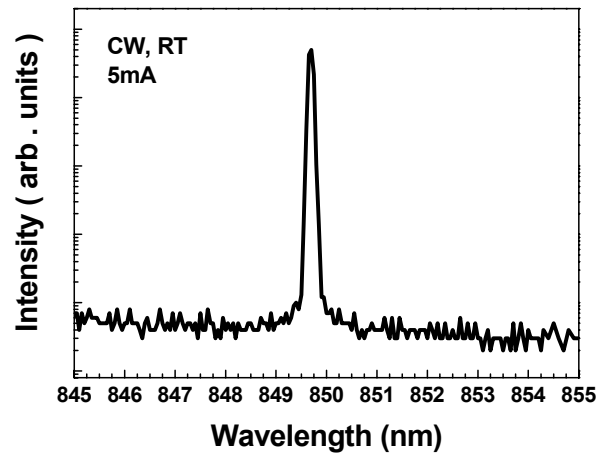
The VCSEL is a class IIIb laser and should be treated as a potential eye hazard. Due to the size of the component, the applicable warning logotype, aperture label, and certification / identification label cannot be placed on the component itself.

Characteristics Curves

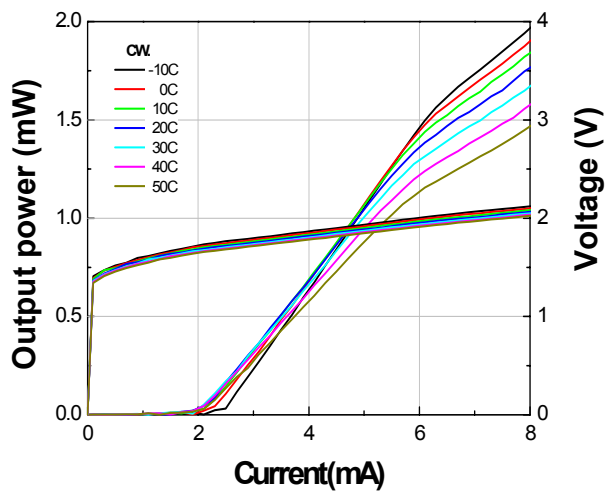
LIV Curve



EL Spectrum



LIV vs Temperature



I_{th} vs Temperature

