



## 850nm Single Mode VCSEL in Surface Mount 1608 Package

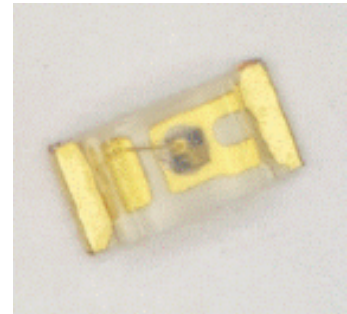
Part No. VCS-F85S20-S

### Features

- Surface mount package with flat surface
- Single transverse mode and single longitudinal mode
- High reliability
- Cost effective

### Applications

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



### Specifications

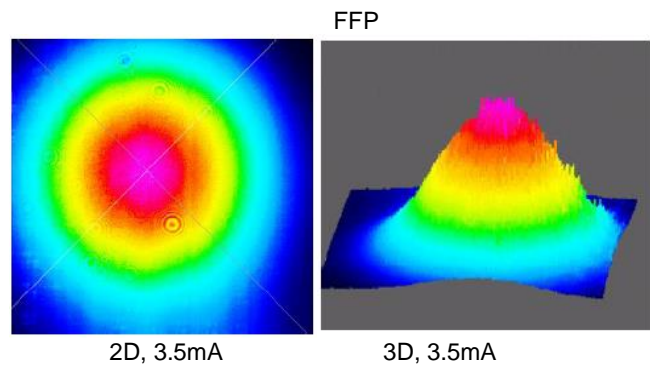
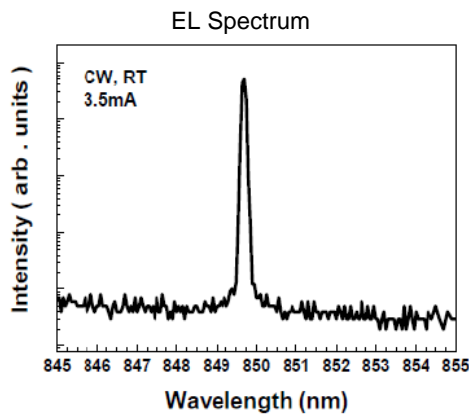
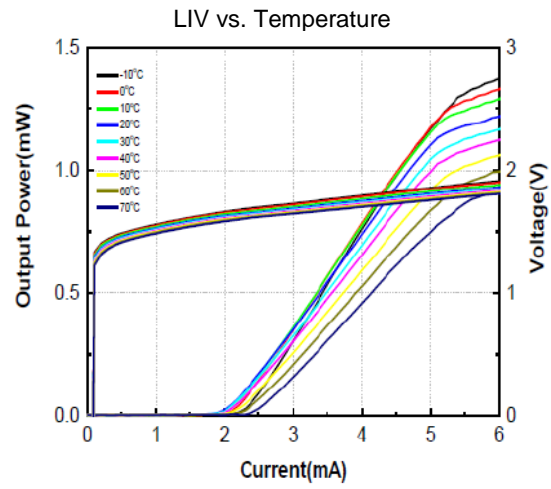
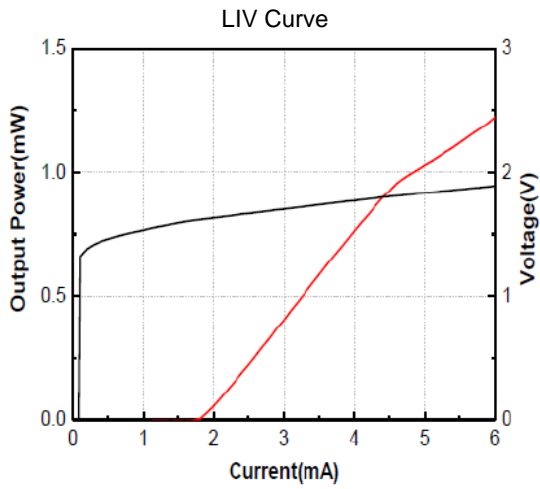
Absolute Maximum Ratings				
Parameters	Min.	Max.	Unit	Conditions
Storage Temperature	-40	85	°C	
Operating Temperature	-10	70	°C	
Lead Solder Temperature		260	°C	5 seconds
Continuous Forward Current		6	mA	
Continuous Reverse Voltage		5	V	10uA

Electro-Optical Characteristics						
Parameters	Symbol	Min.	Typ.	Max.	Unit	Conditions
Threshold Current	$I_{th}$		2	3	mA	CW
Slope Efficiency	$\eta$	0.2	0.35		W/A	$I_f=3.5mA$
Optical Output Power	$P_o$	0.25	0.5		mW	$I_f=3.5mA$
Peak Wavelength	$\lambda$	840	850	860	nm	$I_f=3.5mA$
Beam Divergence	$\Theta$	6	8		°	$I_f=3.5mA$ , (FWHM)
Operating Voltage	$V_f$		1.8	2.1	V	$I_f=3.5mA$
Breakdown Voltage	$V_b$		-10		V	
Dynamic Resistance	$R_d$		70	100	Ohm	$I_f=3.5mA$
Side Mode Suppression Ratio	SMSR	15	30		dB	$I_f=3.5mA$
			10			$I_f=4mA$
Max. Single-mode Power	$P_{SM}$			0.35	mW	SMSR>15dB

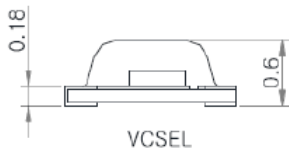
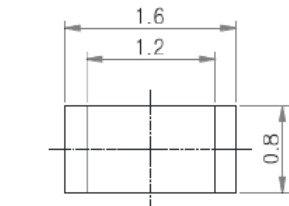
Thermal Characteristics						
Parameters	Symbol	Min.	Typ.	Max.	Unit	Conditions
$I_{th}$ Temperature Variation	$\Delta I_{th}$		1.5		mA	$T_a=-10$ to $70^\circ C$
$\eta$ Temperature Coefficient	$\Delta \eta / \Delta T$		-0.5		%/°C	$T_a=-10$ to $70^\circ C$ , $I_f=3.5mA$
$\lambda$ Temperature Coefficient	$\Delta \lambda / \Delta T$		0.06		nm/°C	$T_a=-10$ to $70^\circ C$ , $I_f=3.5mA$



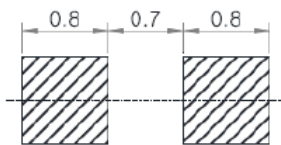
### Typical Characteristics



### Outline Dimensions (unit: mm)



For Reflow Soldering



Note: Specifications are subject to change without notice.