

VC850S-SMD

- Infrared VCSEL
- 850 nm, 0.5 mW
- Single Transverse and Longitudinal Mode
- SMD 0603
- Viewing angle 8°

v 1.1 15.05.2014

Description

VC850M-SMD is a single mode infrared VCSEL emitting at typically 850 nm with rated output power of 0.5 mW cw, mounted into a SMD 0603 package and sealed with epoxy resin. The VCSEL works under low forward current and voltage.

Maximum Ratings

Parameter	Symbol	Va	Unit	
Farameter	Symbol	Min.	Max.	Unit
Forward Current	IF		8	mA
Reverse Voltage (@ 10µA)	VF		5	V
Operating Temperature	T _{CASE}	- 10	+ 50	°C
Storage Temperature	T _{STG}	- 40	+ 85	°C
Lead Solder Temperature *	T _{SLD}		+ 260	°C

* must be completed within 10 seconds

Electro-Optical Characteristics (T_{CASE}=25°C)

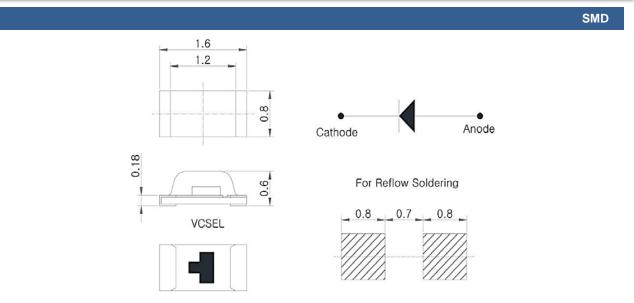
Parameter	Symbol	Min.	Values Typ.	Max.	Unit
Emission Wavelength	λ_{Peak}	830	850	860	nm
Optical Output Power	Po	0.3	0.5	0.7	mW
Beam Divergence	θ		8		0
Threshold Current	I _{TH}		2	3	mA
Operating Current	IF		3.5		mA
Operating Voltage	V _F		1.8	2.1	V
Breakdown Voltage	V _B		-10		V
Slope Efficiency	Н	0.2	0.35		mW/mA
Dynamic Resistance	R_D		70	100	Ω
Side Mode Suppression Ratio	SMSR	15			dB
Max. Single Mode Power	P _{SM}		1.0	1.3	mW

Thermal Characteristics

Parameter	Symbol	Min.	Values Typ.	Max.	Test Conditions	Unit
ITH Temperature Variation	ΔI_{TH}		1.5		T _C =-10 to 50°C	mA
η Temperature Variation	Δη / ΔΤ		-0.5		T _C =-10 to 50°C,3.5mA	%/°C
λ Temperature Variation	Δλ / ΔΤ		0.06		T _C =-10 to 50°C,3.5mA	nm/°C



Outline Dimensions



All Dimensions in mm

Precautions

Static Electricity:

VCSELs are sensitive to electrostatic discharge (ESD). Precautions against ESD must be taken when handling or operating these VCSELs. Surge voltage or electrostatic discharge can result in complete failure of the device. AUTION

Safety Advice:

1040.10 Safety Standards.

This VCSEL emits concentrated infrared light which can be hazardous to the human eye and skin. This diode is classified as CLASS 3B laser product according to IEC 60825-1 and 21 CFR Part

Operation:

Do only operate VCSELs with a current source.

Running these LEDs from a voltage source will result in complete failure of the device. Current of a LED is an exponential function of the voltage across it. Usage of current regulated drive circuits is mandatory.

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