850nm 2mW TO46 SM VCSEL Laser Diode(without TEC)

Product Description

With optimized optical characteristics, the 850 nm single-mode VCSEL is an ideal choice for high-demand sensing system applications. Its innovative chip design suppresses high-order longitudinal and transverse modes, and features stable linear polarization performance.

Product features

Vertical-cavity surface-emitting laser architecture ; Integrated TEC (Thermoelectric Cooler) for precise temperature control ; Low power consumption and high efficiency; TO46 metal hermetic package High-speed modulation capability

Part Number

MP-VCS-850-2-TO46-SM

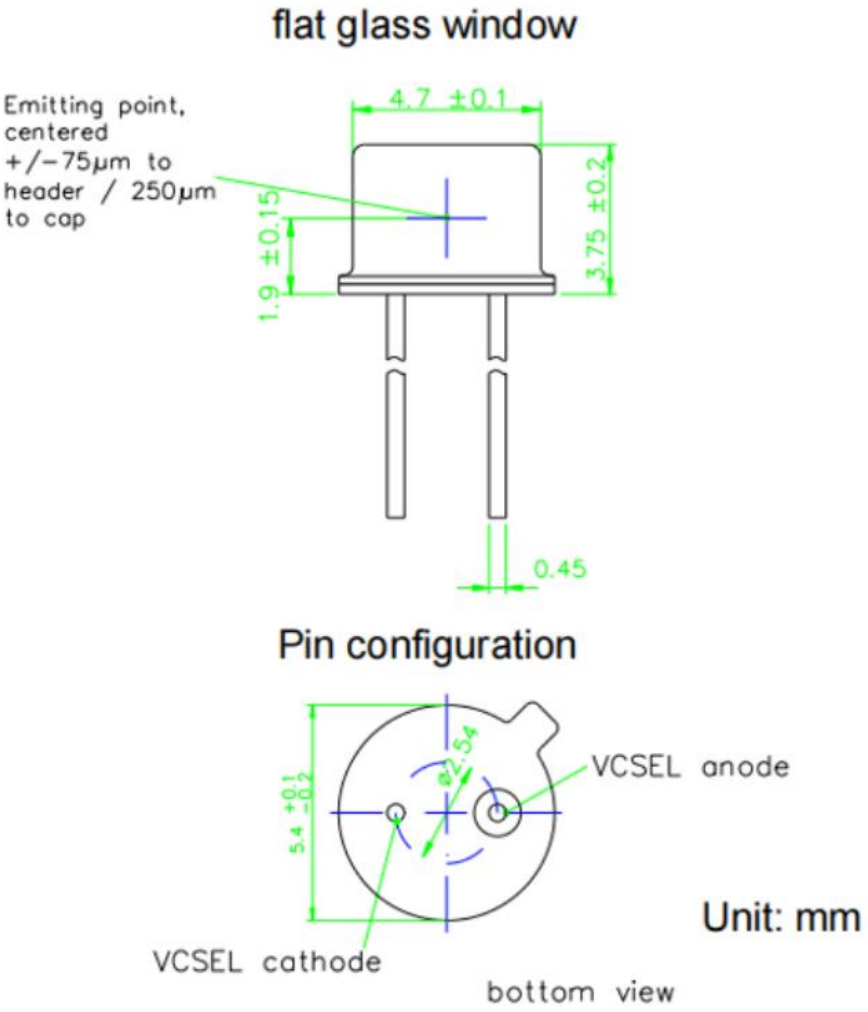
Application area

Data Center | Consumer Electronics | Industrial Sensing | Optical Fiber Access Network | Scientific Research Experiments

Core parameters

Center Wavelength
850nm

Dimension Drawing



General Parameters

Optoelectronic parameters

T=20°C unless otherwise specified

Parameters	symbol	unit	Min. value	Typical values	Max. value	Note:
Incident wavelength	λ_R	nm	830	850	870	$P_{opt.}$ = 2 mW

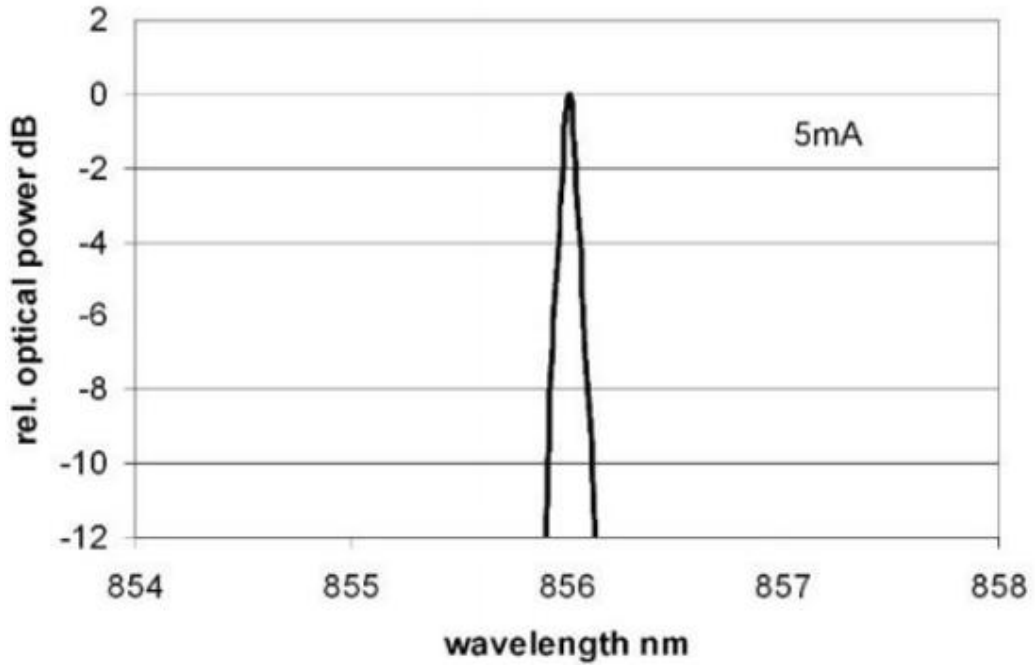
Threshold current	I_{TH}	mA			2	
Laser current	I_{OP}	mA			6	$P_{opt.}$ = 2 mW
Laser voltage	U_{OP}	V			2.6	$P_{opt.}$ = 2 mW
Slope efficiency	η_S	W/A	0.5		1	
Output power	P_{opt}	mW	2	2.5		I_{OP} = 6 mA
Differential series resistors	R_S	Ω	50	200		$P_{opt.}$ = 2 mW
Beam divergence angle	Θ	°	10	20		$P_{opt.}$ = 2 mW, full width $1/e^2$
Edge mold suppression ratio	SMSR	dB	10			$P_{opt.}$ = 2 mW
ESD damage threshold		V	2000*			Mannequin
Wavelength temperature tuning coefficient		nm/K		0.06		

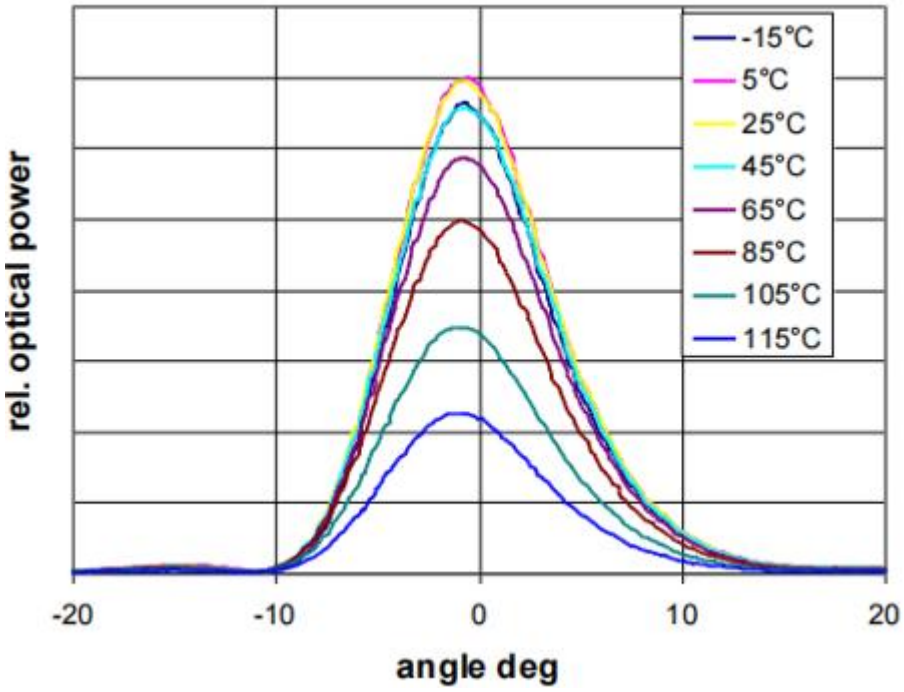
*TO package for integrated z-diode

Absolute maximum

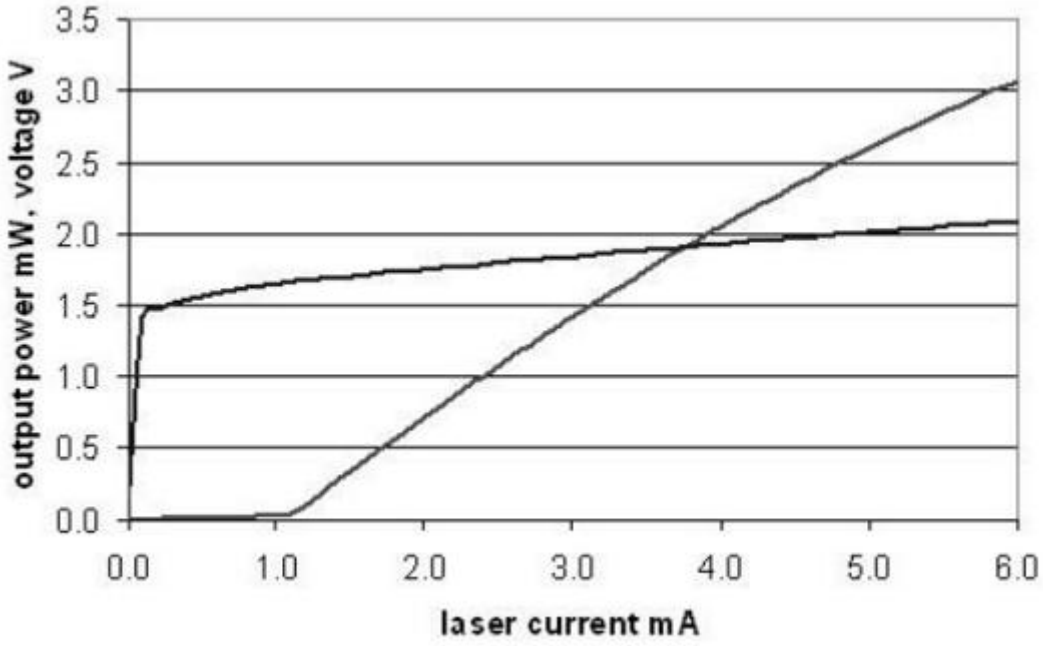
Parameters	Indicators
Storage temperature	-40 to 125°C
Operating temperature	-40 to 85°C
Electricity consumption	20 mW
Continuous forward laser current	8 mA
Continuous reverse current	10 mA
Welding temperature	330°C

Spectral characteristics




-15°C
5°C
25°C
45°C
65°C
85°C
105°C
115°C
rel. optical power
-20
-10
0
10
20
angle deg

Power curve


output power mW, voltage V
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0.0
1.0
2.0
3.0
4.0
5.0
6.0
laser current mA