

Single Mode VCSEL 850 nm

1.5 mW



IMV-850-2-PL-TO46

850 nm polarization locked single mode VCSEL in TO46

APPLICATIONS

- Optical sensor applications
- Optical encoder
- Industrial speed and distance sensors (LIDAR)
- 2D imaging (facial recognition)
- Short reach data link

FEATURES

- Single mode VCSEL
- Wavelength 850 nm
- Hermetically sealed
- Single transverse and longitudinal mode
- Circular beam profile, Gaussian
- Polarization locked emission
- Compact TO-46 can
- AR coated window
- Low power consumption
- High reliability
- RoHS compliant
- Made in Europe

ABSOLUTE MAXIMUM RATINGS

PARAMETER	MAX RATINGS	UNIT	CONDITIONS
Continuous operating current	6	mA	
Continuous reverse voltage	6	V	
PCB solder or reflow temperature	+260	°C	max. 10 seconds

Storage temperature: -20°C to +85°C

Operating temperature: +5°C to +45°C

Individual. Innovative. Exceptional.

IMM Photonics GmbH | Ohmstraße 4 | 85716 Unterschleißheim | Germany | imm-photonics.de

Single Mode VCSEL 850 nm

1.5 mW

ELECTRO-OPTICAL CHARACTERISTICS (MEASURED IN TO46)

PARAMETER	RATINGS			UNIT	CONDITIONS
	MIN	TYP	MAX		
Emission wavelength (λ_{peak})	840	850	860	nm	T = +25°C
SM optical output power (P_{SM})		1.5	2	mW	T = +25°C
Side mode suppression ratio (SMSR)	17	20		dB	T = +25°C, P_{op} = 1.5 mW
Beam divergence ($\theta_{\text{FW1/e}^2}$)	+11	+13	+17	deg	T = +25°C, P_{op} = 1.5 mW
Polarization stability			0	flips	T = +25°C
Operating voltage (U_{op})		1.9	2.3	V	T = +25°C
Operating current (I_{op})		3.0	4.0	mA	T = +25°C, P_{op} = 1.5 mW
Threshold current (I_{th})		1.0	2.0	mA	T = +25°C
Slope efficiency (η)	0.65	0.75		mW/mA	T = +25°C, $I = I_{\text{th}} + 1 \text{ mA}$

SM= single mode; FW1/e² = full width 1/e²

* Polarization direction relative to the chip.

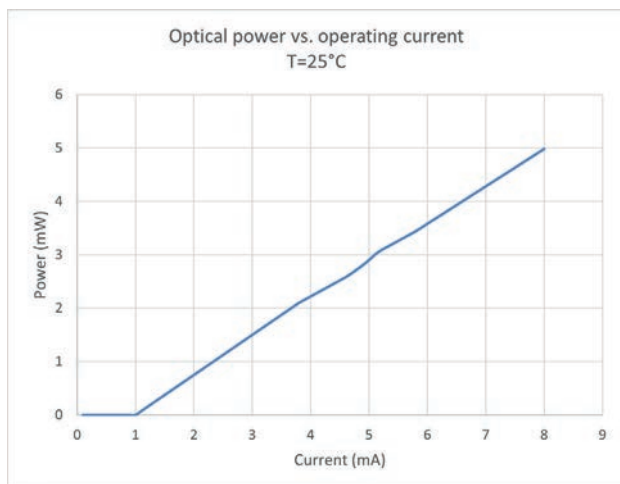
Individual. Innovative. Exceptional.

IMM Photonics GmbH | Ohmstraße 4 | 85716 Unterschleißheim | Germany | imm-photonics.de

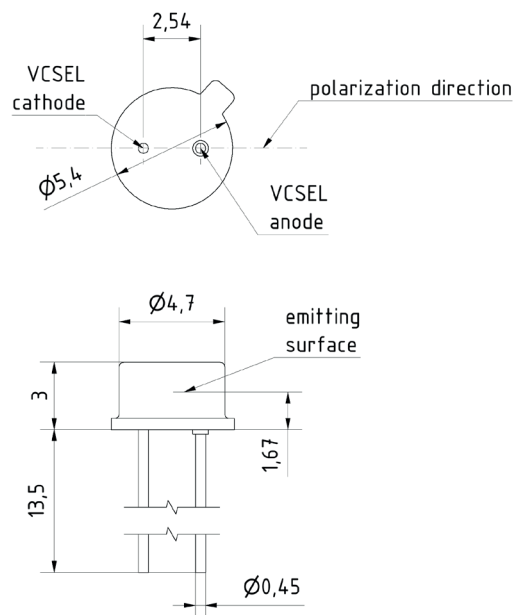
Single Mode VCSEL 850 nm

1.5 mW

TYPICAL CHARACTERISTIC CURVES



TO DIMENSIONS



Placement accuracy $\pm 150 \mu\text{m}$ VCSEL eye to centre of TO cap.

Placement accuracy $\pm 60 \mu\text{m}$ VCSEL eye to centre of TO header.

NOTES

Compliant with RoHS-requirements (2011/65/EU from June 8, 2011).

The above product specifications are typical values and subject to change without notice.

Release 12/2025

Individual. Innovative. Exceptional.

IMM Photonics GmbH | Ohmstraße 4 | 85716 Unterschleißheim | Germany | imm-photonics.de

**WE LOOK
FORWARD**
to solving your
challenge

