

Single mode **VCSEL 850 nm with photodiode**

Preliminary data sheet

IMV-850-1-PL-TO46 with photodiode

850 nm polarization locked single mode VCSEL in TO46

ABSOLUTE MAXIMUM RATINGS

Parameter	Max ratings	Unit	Conditions
Continuous operating current	8	mA	
Continuous reverse voltage	8	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

ELECTRO-OPTICAL CHARACTERISTICS

Parameter	Ratings			Unit	Conditions
	Min	Typ	Max		
Emission wavelength (λ_{peak})	840	850	860	nm	Operating conditions
SM optical output power (P_{SM})	0.9			mW	T = +25°C
Side mode suppression ratio (SMSR)	10			dB	T = +25°C, P_{op} = 0.9 mW
Optical power variation over temperature ($P(T) - P_{\text{op}}$)	-200		+120	μW	I_{op} , T = +5 to +45°C
Beam divergence ($\theta_{\text{FW1/e2}}$)	+12	+17	+21	deg	T = +25°C, P_{op} = 0.5 mW
Accuracy of polarization direction* (δ_{pol})	-15		+15	deg	T = +25°C, P_{op} = 0.2 to 0.9 mW
Operating voltage (U_{op})			2.3	V	Operating conditions
Operating current (I_{op})	2.3		6	mA	T = +25°C, P_{op} = 0.55 mW
Threshold current (I_{th})	1	3	5	mA	T = +25°C, P_{op} = 0.55 mW
Slope efficiency (η)	0.20	0.40	0.65	mW/mA	T = +25°C, P_{op} = 0.2 to 0.9 mW
Temperature coefficient of wavelength ($\partial\lambda/\partial T$)		0.05		nm/K	Operating conditions

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

* Polarization direction relative to the chip.

$I_{\text{Photodiode}}$: min. 32 μA, typ. 41 μA; Conditions: P_{opt} = 1 mW

Operating conditions: T_{op} = +5°C to +45°C; I_{op} = const., set at +25°C so that P_{op} = 0.55 mW

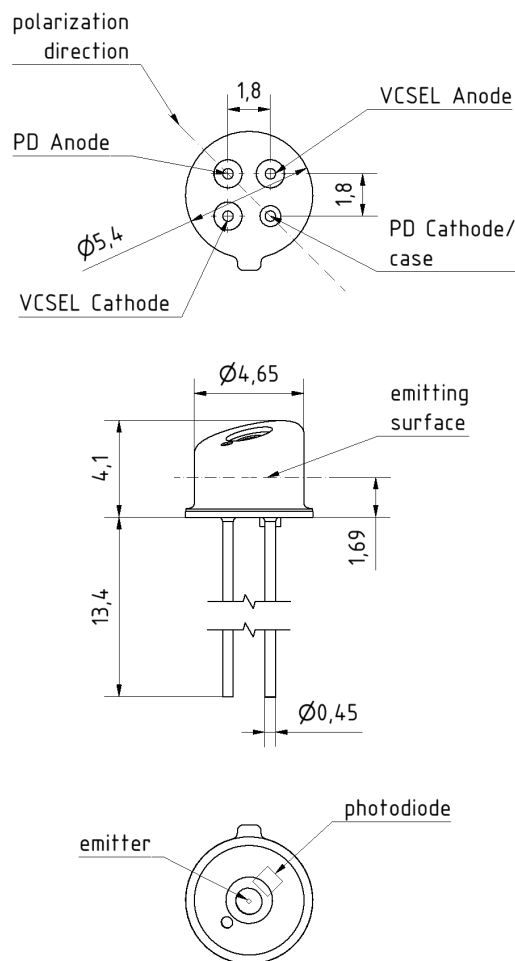
APPLICATIONS

- Optical sensor applications
- Optical encoder
- Industrial speed and distance sensors
- Targeting

FEATURES

- VCSEL chip by **COHERENT**
- Single transverse and longitudinal mode
- Polarization stable emission
- Low power consumption
- High reliability
- Gaussian beam profile
- RoHS compliant

TO DIMENSIONS



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.

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