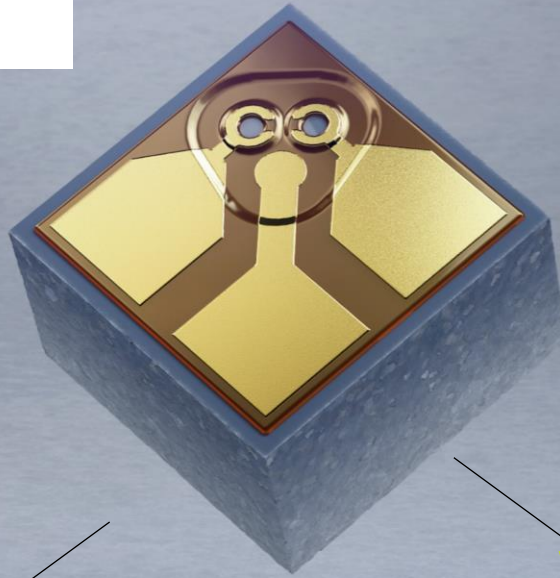


VCSEL

VCSEL with
integrated
Photodiode
850 nm



Two Individual
Addressable Lasers

Integrated
Photodiode

Single-Mode
Polarization Stable

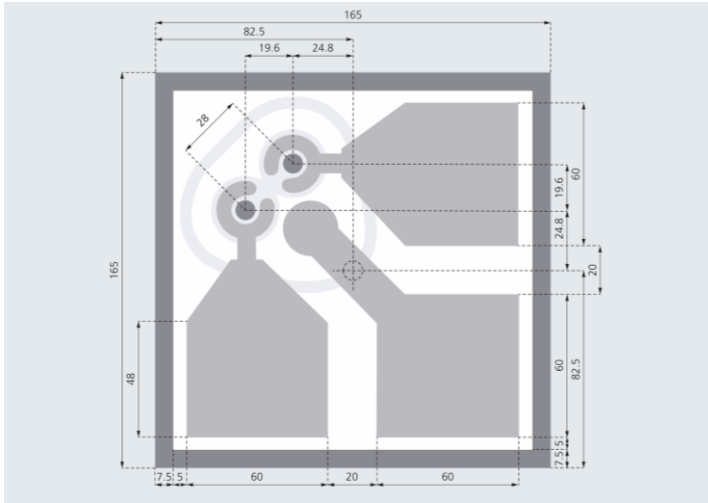
Optimized for
Self-Mixing
Interferometry
Sensing

Datasheet: 850 nm VCSEL with integrated Photodiode (ViP)

Electro-Optical Characteristics (T = 50°C, photodiode reverse bias voltage = 1.0 V, unless otherwise stated)

Parameter	Units	Min.	Typ.	Max.	Notes
Laser emission wavelength	nm	840		865	1.5 mA laser current
Laser wavelength shift	nm/mA	0.3		0.8	2.0 mA laser current
Laser output power	mW	0.3		0.75	2.0 mA laser current
Laser side mode suppression ration	dB	10			2.0 mA laser current
Laser far-field-angle	°	13		20	2.0 mA laser current
Laser threshold current	mA	0.2		1.0	
Laser voltage	V	1.7		2.4	2.0 mA laser current
Laser differential resistance	kΩ	0.1		0.4	2.0 mA laser current
Photodiode current	mA	0.5		1.0	2.0 mA laser current
Photodiode current slope with laser current	mA/mA	0.3		0.6	
Photodiode capacitance	pF			5	Cp
Photodiode impedance	kΩ		100		Rp
Photodiode noise at 10 kHz	pA/√Hz			35	T = 25°C, 2.0 mA laser current

Dimensions of ViP:



Units: μm

Type	Single chip
Part number	TVP-001-850-A
Ordering number	ULMVIP-81-TT-S0101U
Dimensions	165 x 165 x 130 μm

For more information visit
www.trumpf.com/s/VCSEL-solutions

Safety information:

- Invisible laser radiation / avoid beam exposure / class 3B laser product
- Electrostatic sensitive devices / observe precautions for handling

TRUMPF Photonic Components GmbH

Lise-Meitner-Straße 13 · 89081 Ulm · Germany

E-mail: photonic.components@trumpf.com · Homepage: www.trumpf.com/s/VCSEL-solutions

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