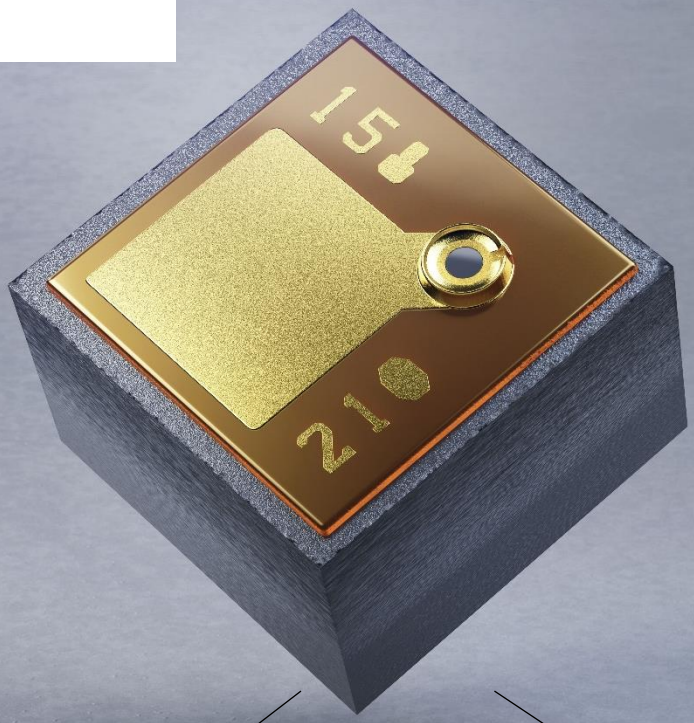
VCSEL

5 Gbps
850 nm



- Vertica-Cavity Surface-Emitting Laser
- High reliability
- Unsealed 85% r.H. / 85°C certified
- High speed up to 5 Gbps

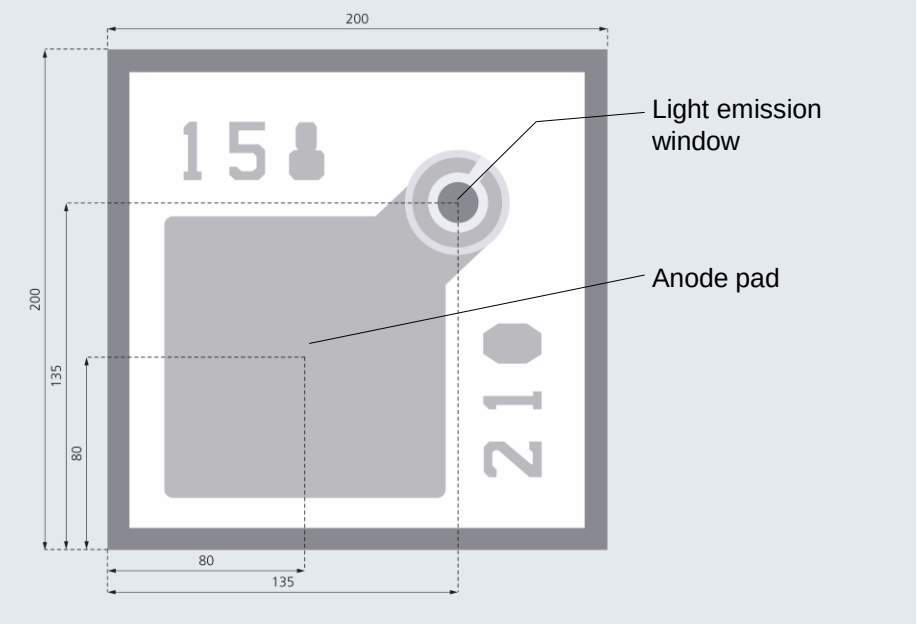
TRUMPF

Datasheet: 5 Gbps VCSEL

Electro-Optical Characteristics (T = 25°C unless otherwise stated)

Parameter	Symbol	Units	Min	Typ	Max	Test Condition
Emission wavelength	λ	nm	830	850	860	I_F = 6 mA
Threshold current	I_{TH}	mA	0.40	0.90	1.40	T = -40°C to 90°C
			0.40		2.50	
Optical output power	P_{opt}	mW		2		I_F = 6 mA
Slope efficiency	η_S	W/A	0.27		0.55	
Variation of ηs over temp.	$\Delta\eta_S/\eta_S/\Delta T$	%/K		0.45	0.60	T = -40 to 25°C & T = 25°C to 90°C
Differential series resistance	R_S	Ω	25	50	65	I_F = 6 mA
3 dB modulation bandwidth	$f_{3\,dB}$	GHz	3			I_F = 6 mA
Rise and fall time	t_r, t_f	ps		70	80	20% to 80%; ER = 5 dB; I_F = 6 mA
Relative intensity noise	RIN	dB/Hz		-130	-120	I_F = 6 mA
Spectral bandwidth	Δλ	nm		0.30	0.65	I_F = 6 mA, RMS
Beam divergence	Θ	°		25	30	I_F = 6 mA, full width 1/e²

Dimensions of 5G VCSEL:



Units: µm

Type	Single chip
Part number	TVT-5(1)-850-A0
Ordering number	ULM850-05-TN-N0101L
Dimensions	200 x 200 x 150 µm
Wiring	Backside cathode

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
January 2022