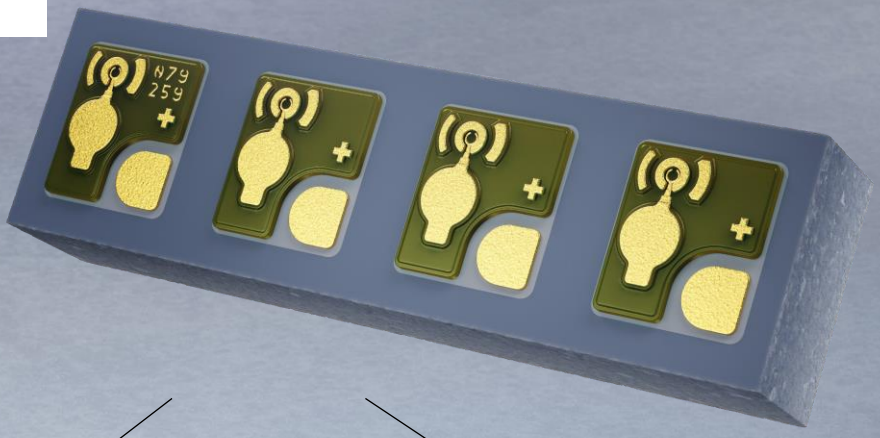
VCSEL

14 Gbps
850 nm



- Vertical-Cavity Surface-Emitting Laser
- High speed up to 14 Gbps
- High reliability
- Fully encapsulated chip
- Available in 1x1, 1x4, 1x12
- Low power consumption

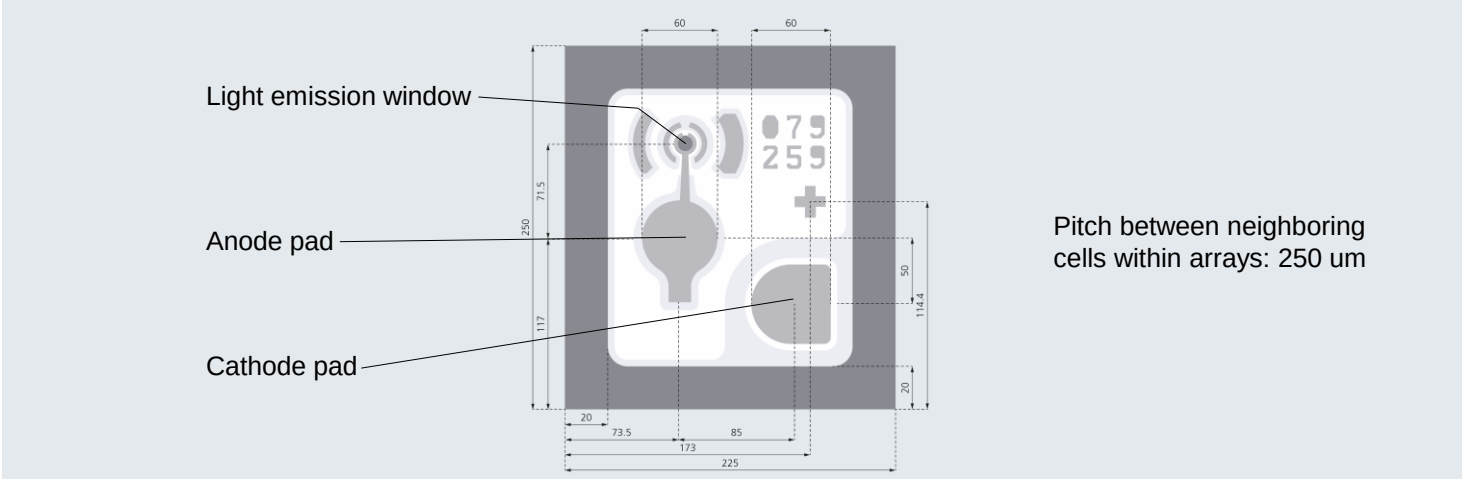
TRUMPF

Datasheet: 14 Gbps VCSEL

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

Parameter	Symbol	Min.	Typ.	Max.	Units	Notes
Substrate temperature	Ts	10	70	90	°C	-
Average operating current	If	—	6	—	mA	-
Threshold current	Ith	—	0.9	2	mA	Ts = 25 °C to 90 °C
Slope efficiency	SE	—	0.45	—	W/A	Ts = 70 °C
Slope efficiency temperature variation	DSE/ SE/DT	—	-0.3	—	%/°C	Ts = 25 °C to 90 °C
Output power	LOP	1	2	4.5	mW	Ts = 25 °C to 90 °C If = 6 mA
Differential resistance	Rdiff	—	60	90	W	
Forward voltage	Vf	—	2.1	2.6	V	
Center emission wavelength	l	840	851	860	nm	
Center emission wavelength temperature variation	Dl/DT	—	0.065	—	nm/°C	-
Beam divergence (1/e² cutoff)	θ	—	23	32	deg	Ts = 25 °C to 90 °C If = 6 mA
Spectral width (RMS)	RMS	—	0.3	0.65	nm	
Relative intensity noise	RIN	—	-140	-130	dB/Hz	
Small signal bandwidth	f3dB	12	14	—	GHz	

Dimensions of 14G VCSEL:



Units: µm

Product variants

Type	Single chip	1 x 4 line array	1 x 12 line array
Part number	TVT-14(01)-850-B0	TVT-14(04)-850-B0	TVT-14(12)-850-B0
Ordering number	ULM850-14-TT-W0101U	ULM850-14-TT-W0104U	ULM850-14-TT-W0112U
Dimensions	250 x 225 x 150 µm	250 x 975 x 150 µm	250 x 2975 x 150 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

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