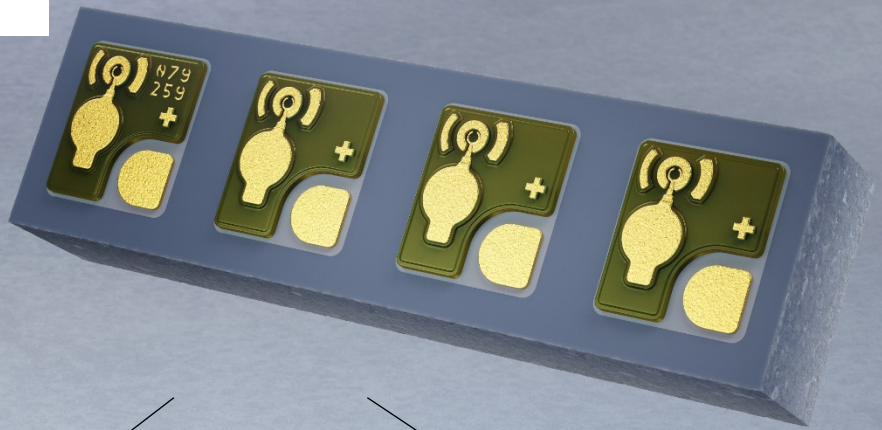


VCSEL

14 Gbps
850 nm



Vertical-Cavity
Surface-Emitting
Laser

High speed up to
14 Gbps

High reliability

Fully
encapsulated chip

Available in
1x1, 1x4 and 1x12

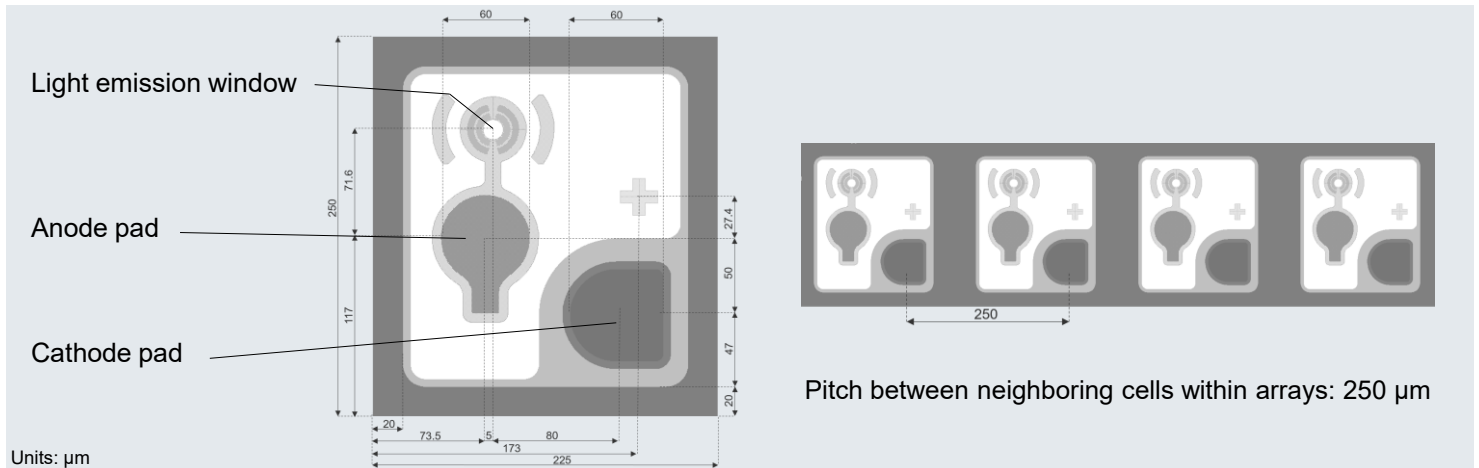
Low power
consumption

Datasheet: 14 Gbps 850 nm VCSEL

Electro-Optical Characteristics (If = 6 mA unless otherwise stated)

Parameter	Symbol	Min.	Typ.	Max.	Units	Notes
Substrate temperature	Ts	0	70	90	°C	
Average operating current	If	—	6	—	mA	
Threshold current	Ith	—	0.9	2	mA	Ts = 0 °C to 90 °C
Slope efficiency	SE	—	0.35	—	W/A	Ts = 70 °C
Slope efficiency temperature variation	$\Delta SE/SE/\Delta T$	—	-0.5	—	%/°C	Ts = 0 °C to 90 °C
Output power	LOP	—	1.8	—	mW	
Differential resistance	Rdiff	—	72	—	Ω	
Forward voltage	Vf	—	2	2.5	V	
Center emission wavelength	λ	840	851	860	nm	Ts = 70 °C
Center emission wavelength temperature variation	$\Delta\lambda/\Delta T$	—	0.065	—	nm/°C	Ts = 0 °C to 90 °C
Beam divergence (1/e ² cutoff)	θ	—	21	—	deg	
Spectral width (RMS)	RMS	—	0.3	0.6	nm	
Relative intensity noise	RIN _{CW}	—	-137	—	dB/Hz	
Small signal bandwidth	f3dB	12	14.5	—	GHz	

Dimensions



Product variants

Type	Single chip	1 x 4 line array	1 x 12 line array
Part number	TVT-14(01)-850-B1	TVT-14(04)-850-B1	TVT-14(12)-850-B1
Ordering number			
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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