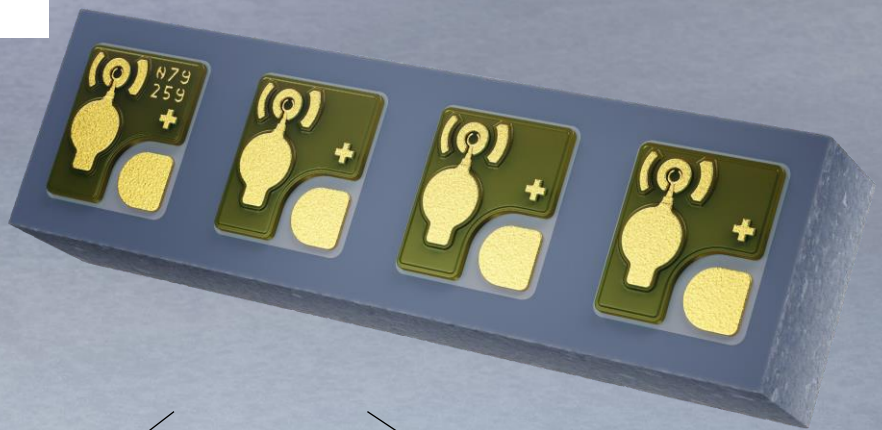


VCSEL

25 Gbps
850 nm



Vertical-Cavity
Surface-Emitting
Laser

High Speed up to
25 Gbps

High Reliability

Fully Encapsulated
Chip

Available in
1x1, 1x4, 1x12

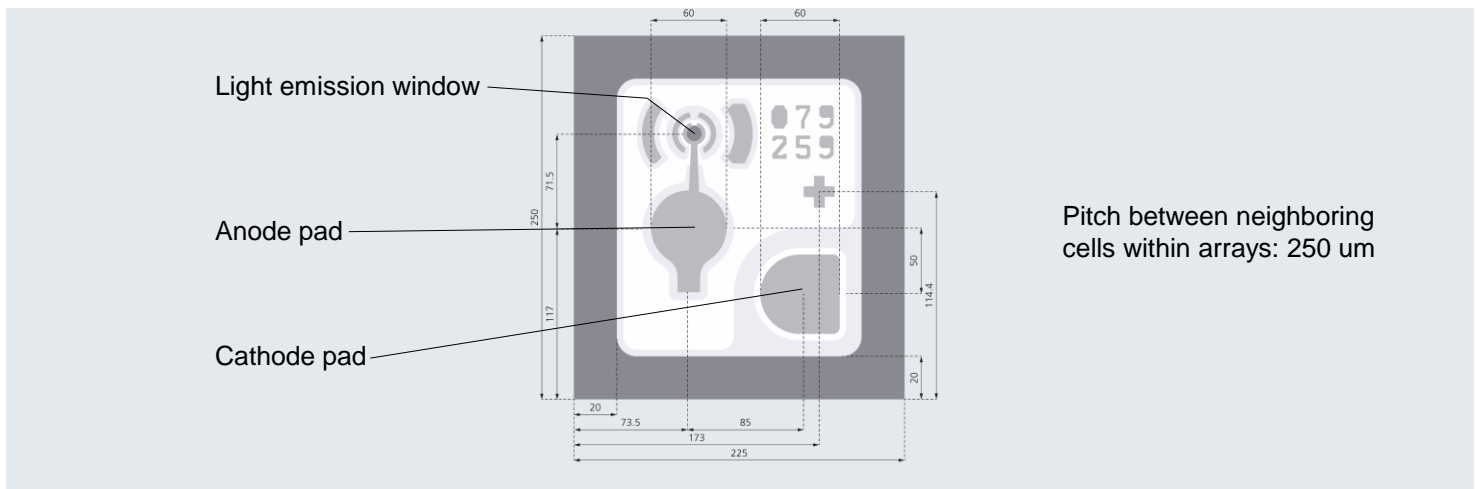
Low Power
Consumption

Datasheet: 25 Gbps VCSEL

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

Parameter	Symbol	Min.	Typ.	Max.	Units	Notes
Substrate temperature	T _s	25	70	90	°C	
Average operating current	I _f	—	7	—	mA	
Threshold current	I _{th}	—	0.9	2	mA	T _s = 25°C to 90°C
Slope efficiency	SE	—	0.45	—	W/A	T _s = 70°C
Slope efficiency temperature variation	$\Delta SE/S$ $E/\Delta T$	—	-0.3	—	%/°C	T _s = 25°C to 90°C
Output power	LOP	1.5	2.5	5	mW	T _s = 25°C to 90°C, I _f = 7mA
Differential resistance	R _{diff}	—	60	90	Ω	T _s = 25°C to 90°C, I _f = 7mA
Forward voltage	V _f	—	2.1	2.6	V	T _s = 25°C to 90°C, I _f = 7mA
Center emission wavelength	λ	840	851	860	nm	T _s = 25°C to 90°C, I _f = 7mA
Center emission wavelength temperature variation	$\Delta\lambda/\Delta T$	—	0.065	—	nm/°C	T _s = 25°C to 90°C
Beam divergence (1/e ² cutoff)	θ	—	23	32	deg	T _s = 25°C to 90°C, I _f = 7mA,
Spectral width (RMS)	RMS	—	0.3	0.65	nm	T _s = 25°C to 90°C, I _f = 7mA
Relative intensity noise	RIN	—	-140	-130	dB/Hz	T _s = 25°C to 90°C, I _f = 7mA
Small signal bandwidth	f _{3dB}	13	15	—	GHz	T _s = 25°C to 90°C, I _f = 7mA

Dimensions of 25G VCSEL:



Units: μm

Product variants

Type	Single chip	1 x 4 line array	1 x 12 line array
Part number	TVT-25(01)-850-B0	TVT-25(04)-850-B0	TVT-25(12)-850-B0
Ordering number	ULM850-25-TT-W0101U	ULM850-25-TT-W0104U	ULM850-25-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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