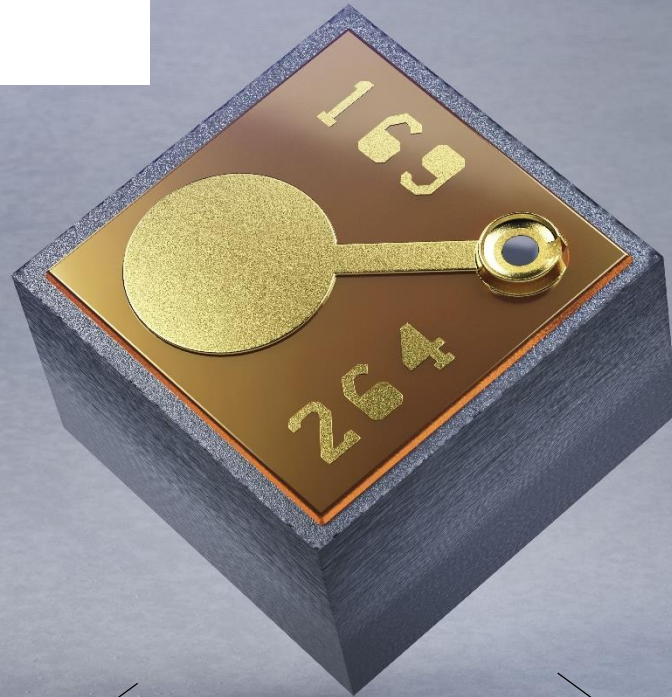


PRELIMINARY

10 Gbps VCSEL
850 nm

1x1chip



> Unsealed 85%
r.H./85°C certified

> Up to 10 Gbps
speed

> Vertical Cavity
Surface-Emitting
Laser

Electro-optical characteristics

Chip temperature 25°C unless otherwise stated						
Parameter	Symbol	Units	Min	Typ	Max	Test conditions
Emission wavelength	λ_R	nm	830	850	860	$T_{\text{chip}} = 25 \text{ to } 80^\circ\text{C}$
Threshold current	I_{TH}	mA	0.40		1.00	
Slope efficiency	η_S	W/A	0.30		0.65	$T_{\text{chip}} = 25 \text{ to } 80^\circ\text{C}$
Variation of η_S over temp.	$\Delta\eta_S/\eta_S/\Delta T$	%/°C		-0.50		$T_{\text{chip}} = 25 \text{ to } 80^\circ\text{C}$
Optical output power	I_{op}	mW	1.20		3.40	$T_{\text{chip}} = 25^\circ\text{C}, I_{\text{op}} = 5 \text{ mA}$
						$T_{\text{chip}} = 80^\circ\text{C}, I_{\text{op}} = 7 \text{ mA}$
Differential series resistance	R_{S_25}	Ω	30	50	75	$T_{\text{chip}} = 25 \text{ to } 80^\circ\text{C}, I_f = 5 \text{ mA}$
3 dB modulation bandwidth	$f_{3 \text{ dB}}$	GHz	7.50			$I_f = 5 \text{ mA}$
Rise and fall time	t_R/t_F	ps		30/45		$I_{\text{avg}} = 5 \text{ mA}, 20\% \text{ to } 80\%$
Relative intensity noise	RIN	dB/Hz		-130	-120	
Wavelength tuning over current	$\Delta\lambda_1/\Delta I$	nm/mA		0.30		$T_{\text{chip}} = 25 \text{ to } 80^\circ\text{C}$
Wavelength tuning over temp.	$\Delta\lambda_1/\Delta T$	nm/K		0.07		
Beam divergence	Θ	°		25	30	$1/\exp^2, I_f = 5 \text{ mA}$
Spectral bandwidth	$\Delta\lambda$	nm			0.65	$I_f = 6 \text{ mA}$

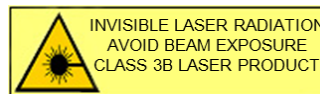
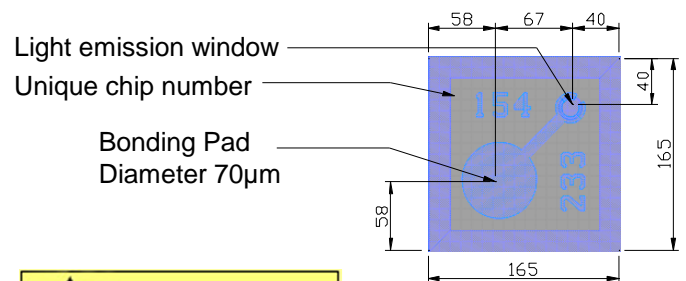
Absolute Maximum Ratings

Storage temperature	-40 to 140°C
Operating temperature	0 to 85°C
Continuous forward current	10 mA
Reverse voltage	8 V
Power dissipation	20 mW
Soldering temperature	5 s @ 330°C

Single VCSEL chip

Description	VCSEL chip, single channel
Product Number	ULM850-10-TN-N0101T(TB01)
Anode	Bonding pad on front side
Cathode	Backside metallization
Dimensions	$165 \pm 5 \mu\text{m} \times 165 \pm 5 \mu\text{m}$
Thickness	$150 \pm 15 \mu\text{m}$

Dimensions



NOTICE: Stresses greater than those listed under „Absolute Maximum Ratings“ may cause permanent damage to the device. These are stress ratings only and functional operation of the device at these or any other condition beyond those indicated for extended periods of time may effect device reliability.



ATTENTION: Electrostatic Sensitive Devices
Observe Precautions for Handling