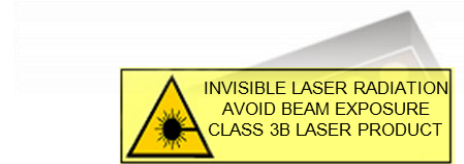


25 Gbps VCSEL 850 nm

1x1/4/12 chip

- Vertical Cavity Surface-Emitting Laser
- 850 nm emission wavelength
- High speed modulation up to 28 Gbps
- Top side emission
- 1x1, 1x4, 1x12 chips



PRELIMINARY

Electro-Optical Characteristics

Chip Temperature = 85°C unless otherwise stated

PARAMETER	SYMBOL	UNITS	MIN	TYP	MAX	TEST CONDITIONS
Emission wavelength	λ_R	nm	840		860	
Threshold current	I_{th}	mA	0.30	0.50	1.0	
Slope Efficiency	η_s	W/A	0.2	0.4	0.5	
Variation of η_s over temp.	$\Delta\eta_s/\eta_s/\Delta T$	%/K		-0.35		
Output power at 6 mA			1.1	1.5	2.0	
Voltage drop at 6 mA			1.8	2.1	2.3	
Differential series resistance	$R_{S_{85}}$	Ω	50	80	120	$I_f = 6 \text{ mA}$
3dB modulation bandwidth	f_{3dB}	GHz	12	15	20	$I_{avg} = 6 \text{ mA}$
Wavelength tuning over temp.		nm/K		0.07		
Beam divergence	θ	°		30	35	full width, $1/exp^2$
RMS spectral width	$\Delta\lambda_l$	nm	0.2	0.4	0.6	

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

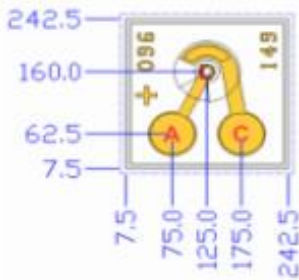
Absolute Maximum Ratings

Storage temperature	- 40 ... 140°C
Operating temperature	0 ... 85°C
Electrical power dissipation	20 mW
Continuous forward current	10 mA
Reverse voltage	8 V
Optical output power	9 mW

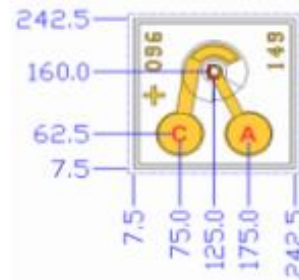
Single VCSEL chip

Description	VCSEL chip, single channel
Type	ULM850-25-TT-N0101U
Mounting	anode and cathode wire bonding on front side
Dimensions	235 μm x 235 μm
Thickness	150 μm

ULM850-25-TT-N0101U_AC



ULM850-25-TT-N0101U_CA

Units: μm

A = Anode pad
 C = Cathode pad (NOT common cathode)
 L = Light emitting area

VCSEL line arrays

Description	1 x 12 VCSEL line array	1 x 4 VCSEL line array
Type	ULM850-25-TT-N0112U	ULM850-25-TT-N0104U
Wiring	Electrically separated channels	Electrically separated channels
Dimensions	235 μm x 2985 μm	235 μm x 985 μm
Thickness	150 μm	150 μm



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