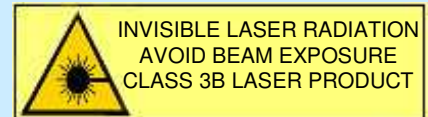


14 Gbps VCSEL 850 nm 1x1/4/12 chip



- ◆ Vertical Cavity Surface-Emitting Laser
- ◆ Cathode on top side
- ◆ Unsealed 85% r.H./85°C certified
- ◆ 1x1, 1x4, 1x12 chips



Preliminary

ELECTRO-OPTICAL CHARACTERISTICS

Chip Temperature = 25°C unless otherwise stated.

PARAMETER	SYMBOL	UNITS	MIN	TYP	MAX	TEST CONDITIONS
Emission wavelength	λ_R	nm	840	850	860	Popt = 1.5 mW
Threshold current	I_{th}	mA		0.6		
Threshold voltage	U_{th}	V	1.4		1.8	
Slope Efficiency	η_s	W/A		0.4		
Variation of η_s over temp.	$\Delta\eta_s/\eta_s/\Delta T$	%/°C		-0.5		Tchip = 0...85°C
Laser forward current	Iop	mA	3.0	4.4	6.0	Popt = 1.5 mW
Differential series resistance	R_{S_25}	Ω		50		Popt = 1.5 mW
3dB modulation bandwidth	v_{3dB}	GHz		11		Popt = 1.5 mW
Rise and fall time	t_R/t_F 20/80	ps		30		Popt = 1.5 mW
Relative intensity noise	RIN	dB/Hz			-128	
Wavelength tuning over current		nm/mA		0.3		
Wavelength tuning over temp.		nm/K		0.07		
Thermal resistance	$R_{Thermal}$	K/mW		2.5		
Beam divergence	θ	°	20		30	1/exp ² , Popt. = 1.5mW
Spectral bandwidth	$\Delta\lambda_1$	nm			0.65	Popt = 1.5 mW

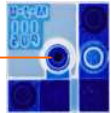
ABSOLUTE MAXIMUM RATINGS

Storage temperature	- 40 .. 125°C
Operating temperature	0 .. 85°C
Electrical power dissipation	20 mW
Continuous forward current	12 mA
Reverse voltage	8V
Optical output power	6mW

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.

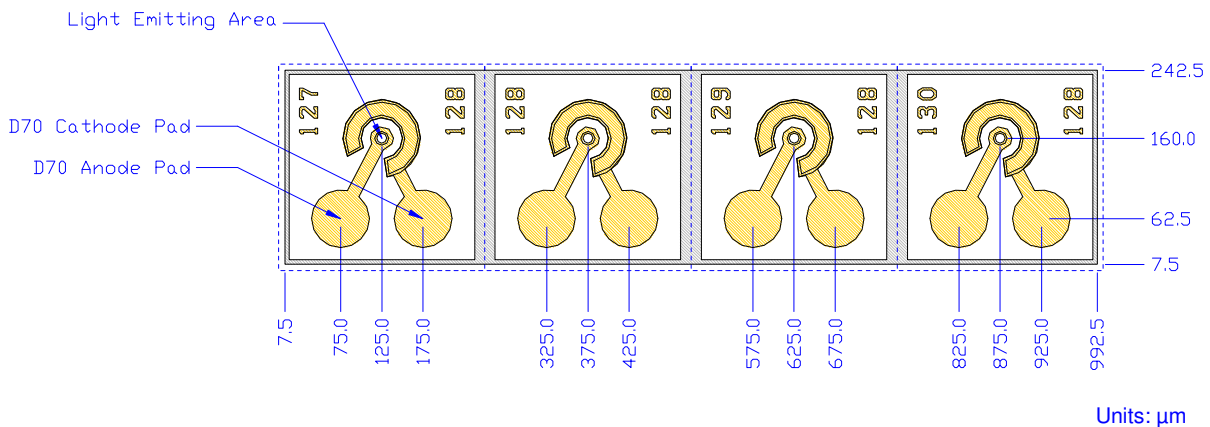


ATTENTION: Electrostatic Sensitive Devices
Observe Precautions for Handling



Single VCSEL chip:

- Description:** VCSEL chip, single channel
Type: ULM850-14-TT-N0101U
Mounting: anode and cathode wire bonding on front side
Dimensions: 235 μm x 235 μm
Thickness: 150 μm



VCSEL line arrays:

- | | | |
|---------------------|--|---------------------------------------|
| Description: | 1 x 12 VCSEL line array | 1 x 4 VCSEL line array |
| Type: | ULM850-14-TT-N0112U | ULM850-14-TT-N0104U |
| Wiring: | common cathodes | common cathodes |
| Dimensions: | 235 μm x 2985 μm | 235 μm x 985 μm |
| Thickness: | 150 μm | 150 μm |