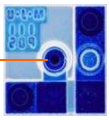
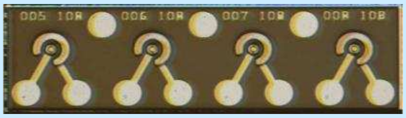


14 Gbps VCSEL 850 nm

1x4 1x12 chip



- Vertical Cavity Surface-Emitting Laser
- Cathode on top side
- Unsealed 85% r.H./85°C certified
- Suitable for wirebond and flipchip process

INVISIBLE LASER RADIATION
AVOID BEAM EXPOSURE
CLASS 3B LASER PRODUCT

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	Iop = 6mA; 0°C ~ 85°C
Threshold current	I_{th25}	mA		0.7		
	I_{th}	mA			1.5	Tchip = 0...85°C
Slope Efficiency	η_s	W/A		0.4		
Variation of η_s over temp.	$\Delta\eta_s/\eta_s/\Delta T$	%/°C		-0.45		Tchip = 0...85°C
Optical output power	P_{op}	mW		2		Iop = 6mA
Differential series resistance	R_{S_25}	Ω		50		Iop = 6mA
3dB modulation bandwidth	ν_{3dB}	GHz		12		Iop = 6mA
Rise and fall time	$t_R/t_{F\ 20/80}$	ps		30		Iop = 6mA
Wavelength tuning over temp.		nm/K		0.07		
Thermal resistance	$R_{Thermal}$	K/mW		2.5		
Beam divergence	θ	°		25		$1/\exp^2$, Iop = 6mA
Spectral bandwidth	$\Delta\lambda_1$	nm		0.40		Iop = 6mA

ABSOLUTE MAXIMUM RATINGS

Operating temperature	0 .. 85°C
Electrical power dissipation	20 mW
Continous forward current	12 mA
Reverse voltage	8V
Soldering temperature (for 5s)	330°C

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

1x4 VCSEL chip:

Description: VCSEL chip, 1 x 4 VCSEL line array

Type: ULM850-14-TT-N0104Y

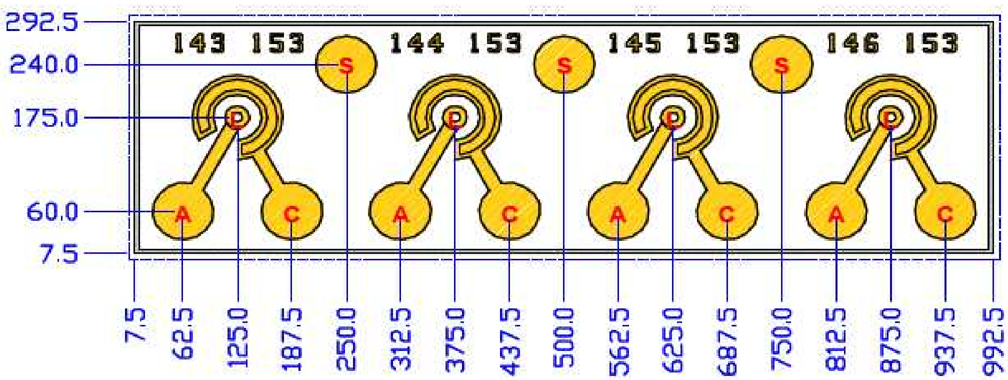
Mounting: anode and cathode wire bonding on front side

Wiring: common cathodes

Dimensions: 285 um x 985 um

Thickness: 150 um

Bond pad diameter: 70um



Units: µm

1x12 VCSEL chip:

Description: VCSEL chip, 1 x 12 VCSEL line array

Type: ULM850-14-TT-N0112Y

Mounting: anode and cathode wire bonding on front side

Wiring: common cathodes

Dimensions: 285 um x 2985 um

Thickness: 150 um

Bond pad diameter: 70um

Remark: 1x12 array realized by keeping three 1x4 units in one array in dicing process