

28 Gbit/s VCSELs and VCSEL Arrays (850 nm)

Product Code: V25C-850C 1x1
 V25C -850C4 4x1 array
 V25C -850C12 12x1 array
 V25C -850C16 16x1 array



Sample image only. Actual product may vary.

Preliminary

Product Description

These compact and very high modulation rate top-emitting GaAs-based vertical cavity surface emitting laser (VCSEL) chips and 4x1, 12x1 and 16x1 chip arrays are available as engineering samples for use in the development and evaluation of optical interconnections, optical backplanes and integrated waveguides, and next-generation optical data communications systems. The VCSELs are contacted on the top-surface individually using ground-source (GS) microprobes, wire bonds, or flip-chip bonds.

Features

- available in 4x1 and 12x1 configuration
- up to 28 Gbit/s per channel
- high temperature stability
- standard pitch size 250 μm
- high device-to-device uniformity

Applications

- 400G Ethernet
- Infiniband
- Proprietary optical interconnects
- Active Optical Cables (AOC)

Parameter	Typical	Notes
Emission Wavelength	850 nm	available from 835 – 860 nm
Data Rate	Up 28 Gbit/s per channel	
Rise time (20% to 80%)	< 10 ps	
Threshold Current	0.4 mA	
Peak Output Power	2 mW	

Preliminary

Electro Optical Specifications

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Maximum data rate				28		Gbit/s
Rise / Fall time	t_R / t_F	20% - 80%		10/10		ps
Slope efficiency	η	$I_{op} = 1-6mA$		0.5		W/A
Operating power	P_{op}			8	15	mW
Operating Voltage	V_{op}	$I_{op} = 6mA$		2.5		V
Threshold current	I_{th}			0.4		mA
Differential resistance	R_d	$I_{op} = 6mA$		90		Ω
Threshold voltage	V_{th}			1.7		V
Beam divergence	θ	FWHM		24		$^\circ$
Emission wavelength	λ	$I_{op} = 6mA$	835	850	860	nm
Capacitance	C			310		fF
Small signal bandwidth	f_{3db}			20		GHz

Absolute Maximum Ratings

Parameter	Symbol	Condition	Min	Max	Unit
Optical output power	P_{max}			5	mW
Peak forward current	I_f			9	mA
VCSEL reverse voltage	V_{rv}			5	V
Operating temperature	T_{op}			85	$^\circ C$
Storage temperature	T_{st}		-40	100	$^\circ C$
Soldering Temperature	T_{sl}	max 260 sec		150	$^\circ C$

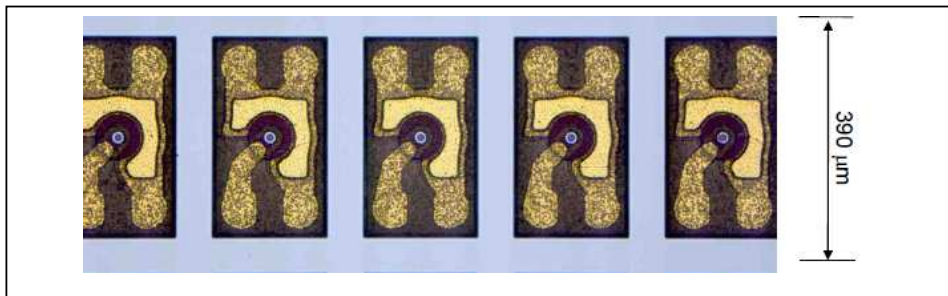
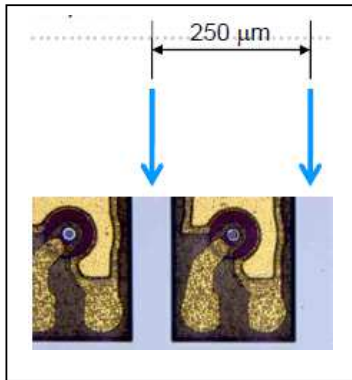
Mechanical Dimensions

Parameter	Type	Min	Typ	Max	Unit
VCSEL pitch			250		μm
Length	V25C-850C		220		μm
	V25C-850C4		960	1000	μm
	V25C-850C12		2960	3000	μm
	V25C-850C16		3950	4000	μm
	Height		140	150	160
Width			390		μm

All product specifications and descriptions are subject to change without notice.

Preliminary

Dimensions

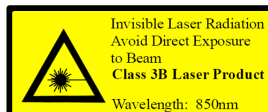


Datasheet

V25C-850C



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