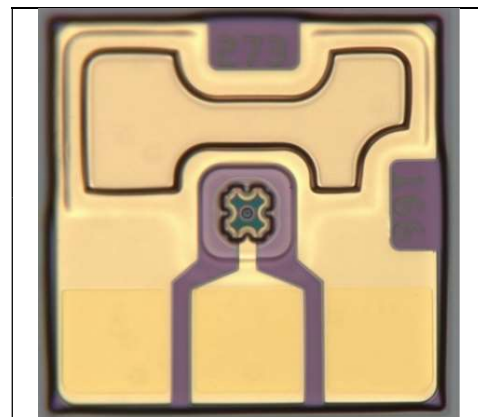


## Up to 25GBaud modulation

Product Code: S-850MA  
1x1 chip



*Actual product may vary in appearance.*

### Product Description

These compact high power high modulation rate top-emitting 850nm GaAs-based vertical cavity surface emitting laser (VCSEL) chips for applications in sensing and wireless and fiber optical data communication

### Features

- Chip size 250 x 250  $\mu\text{m}$
- Suitable for wire bonding GSG

### Applications

- Sensing
- Optical data communication

Parameter	Typical	Notes
Emission wavelength	850 nm	range 845 – 855 nm
Data rate	Up to 25GBaud	
Threshold current	< 0.5 mA	
Peak output power	4 mW	

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

Please contact our sales department for additional information and to receive a quotation: [sales@v-i-systems.com](mailto:sales@v-i-systems.com)

# Datasheet

## S-850MA



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### Electro-optical characteristics (T = 0 to 85 °C)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Data rate	BR	NRZ		25	28	GBaud/s
Slope efficiency	$\eta$	10 mA		0.4	0.5	W/A
Threshold current	$I_{th}$			3	5	mA
Differential resistance	$R_d$	5-10 mA		40		$\Omega$
Beam divergence	$\theta$	FWFM (86%)	18	20	25	°
Output power	$P_{max}$	20mA	4	6	7	mW
Spectral bandwidth (RMS)	$\Delta\lambda_{RMS}$	20mA		0.5	0.6	nm

### Absolute Maximum Ratings

Parameter	Symbol	Test Condition	Min	Max	Unit
Peak forward current	$I_f$			8	mA
Maximum reverse voltage	$V_{rv}$			5	V
Operating temperature	$T_{op}$			85	°C
Storage temperature	$T_{st}$		-40	100	°C
Soldering temperature	$T_{sl}$	max 260 sec		150	°C

### Mechanical Dimensions

Parameter	Type	Min	Typ	Max	Unit
Length 1x1 VCSEL chip			210	250	$\mu m$
Height	All	140	150	160	$\mu m$
Width	All		210	250	$\mu m$

### Dimensions

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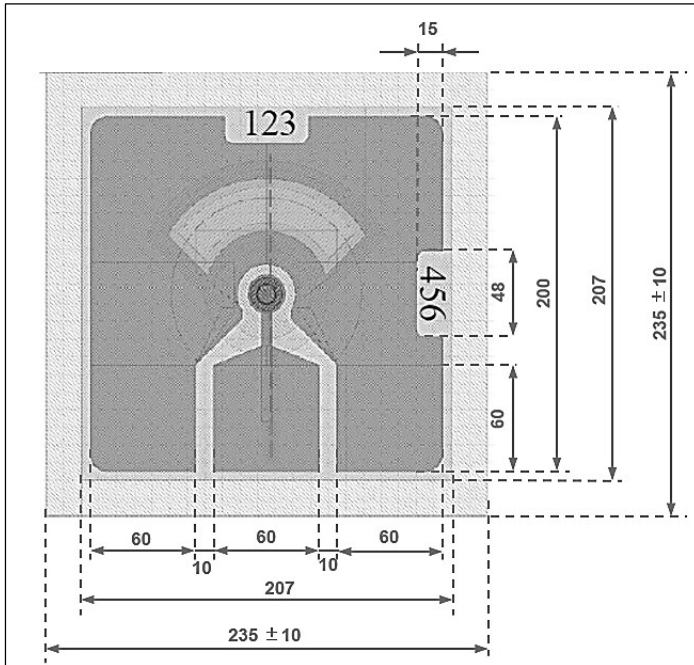
VI Systems GmbH Hardenbergstrasse 7 D-10623 Berlin

# Datasheet

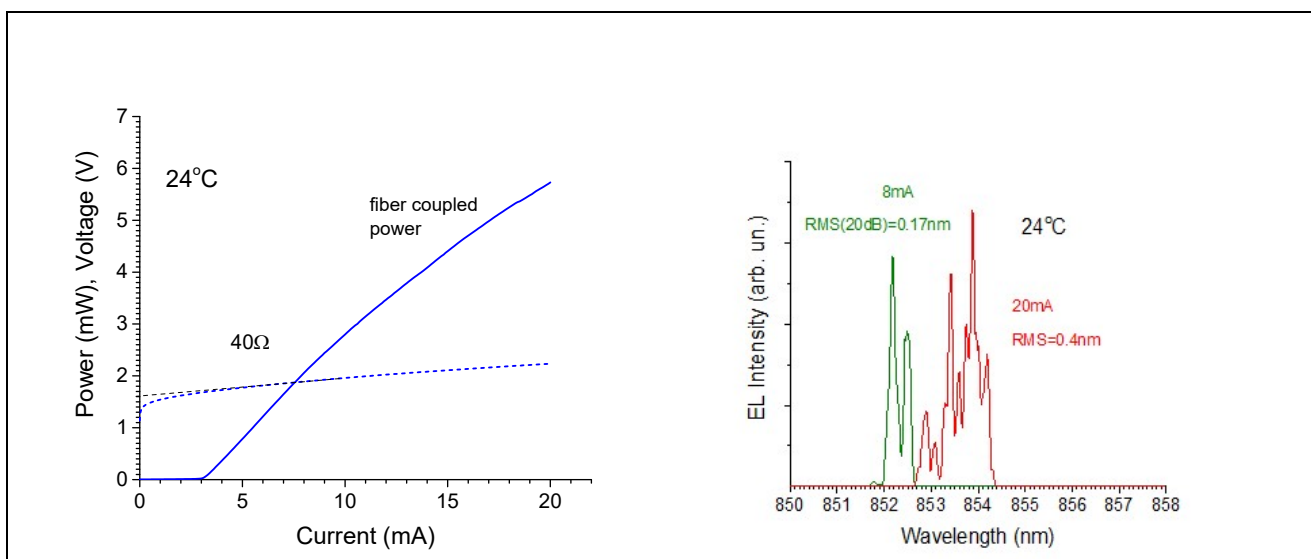
## S-850MA



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## LIV and Spectra



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# Datasheet

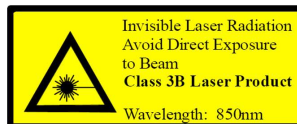
## S-850MA



Vertically Integrated Systems

### Qualification Notification

The S 850-MA chip series has been tested to meet specifications outlined in this data sheet at room temperature. However, it has not undergone qualification testing or characterization in the final version and therefore may not meet the performance specifications over all extremes.



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