Part Number: I0-0895S-0000-A005

Desc: Die; 895; S; 1M; S5,S6,S7; 0.2mW; 0.16mm X 0.20mm;

PRODUCT DESCRIPTION

A true single-mode 895nm VCSEL, with linear polarized emission designed.

Applications:

- Spectroscopic sensors
- Atomic clock
- Magnetometer
- Interferometry

Features:

- Low divergence angle
- Circular beam profile
- Single Spectral & Spatial mode
- Narrow spectral width
- Stable SM beam divergence emission over both temperature and current
- Linear stable polarization orientated along chip edge

COMPLIES WITH IEC 60825-1, 2nd Edition 2007.
COMPLIES WITH 21 CFR 1040.10 AND 1040-10.11 EXCEPT FOR DEVIATIONS PURSUANT TO LASER NOTICE NO.50 DATED 27 MAY 2001.

Absolute Maximum Ratings

Parameter	Rating	Notes
Storage temperature	-40 to 125 °C	
Operating temperature (VCSEL)	-20 to 110 °C	
Lead solder temperature	260°C, 10 seconds	
CW current (VCSEL)	3 mA	(Note 1)
Laser reverse voltage	5 V	(Note 2)

Note 1: The maximum CW laser current in the Absolute Maximum Ratings is valid for the operating temperature noted at the top of this table;

Note 2: For details refer to the Vixar Application Note "VCSEL EOS/ESD Considerations and Lifetime Optimization".

Stresses beyond those listed under Absolute Maximum Ratings may cause permanent damage to the device. Functional operation of the device beyond the Absolute Maximum Ratings for extended periods of time may affect device reliability.

Electro-Optical Characteristics

VCSEL Operating Temp (Top) = 80°C & Operating Current =1.2mA unless otherwise stated

Parameter	Symbol	Units	Minimum	Typical	Maximum	Notes
Maximum DC current (CW)		mA	--	--	2.0	To remain single mode & polarization stable
Threshold current	Ith	mA	0.3	0.5	0.8	
Operating voltage	Vf	Volts	--	1.65	2.0	
Series resistance (VCSEL)	Rs	Ohms	--	200	--	
Slope efficiency	SE	mW/mA	--	0.35	--	
Optical output power	Lop	mW	0.18	0.23	--	T=50°C
Optical output power	Lop	mW	0.15	0.20	--	T=80°C
Reverse breakdown voltage		V	10	--	--	Ir ≤ 1nA
Operating wavelength	λop	nm	894.1	894.6	895.1	
Single mode Suppression Ratio	SMSR	dB	20	--	--	Unmodulated
Spectral width (RMS)	Δλ	MHz	--	--	50	Unmodulated
Polarization Extinction ratio	PER	dB	13	--	--	
Beam divergence 1/e2		deg	16	20	26	
Beam divergence FWHM	FWHM	deg	9	13	16	
Wavelength current coefficient		nm/mA	0.35	0.5	0.65	
Wavelength temp coefficient		nm/°C	--	0.06	--	
Modulation Frequency		GHz	4.0	--	--	

Typical Performance

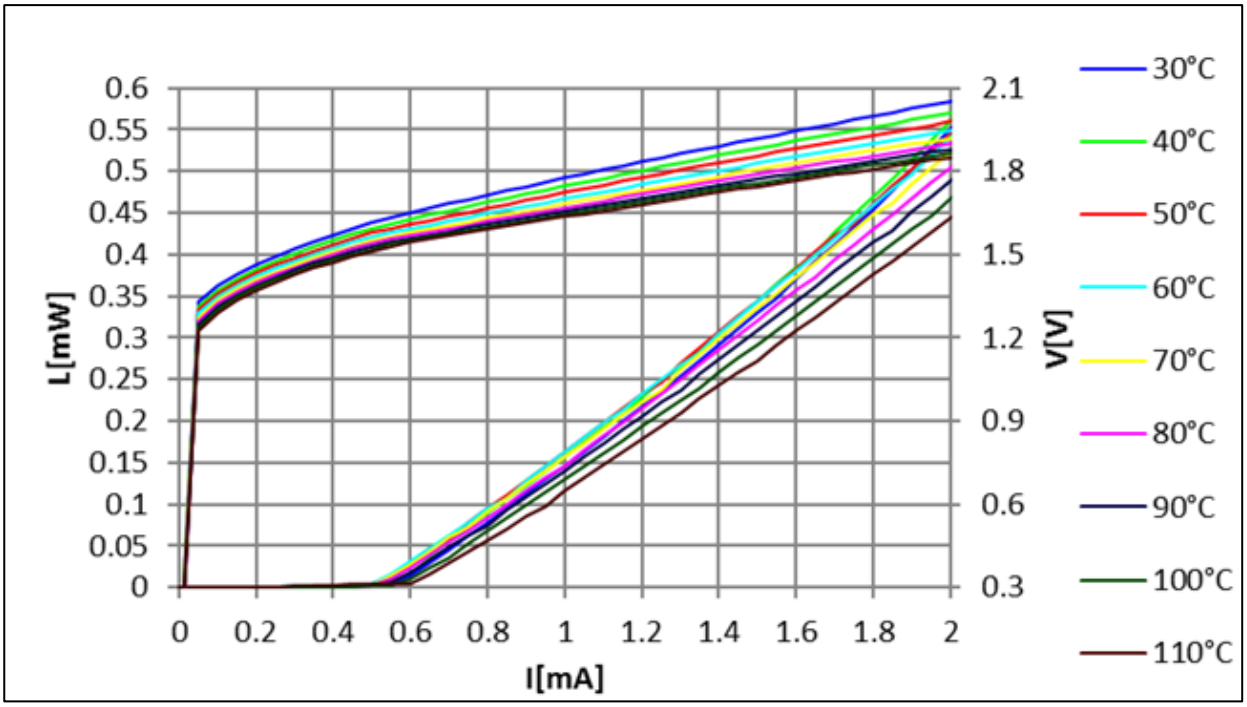

Figure 1 L-I-V performance of I0-0895S-0000-X005 vs Temperature

Beam Profile

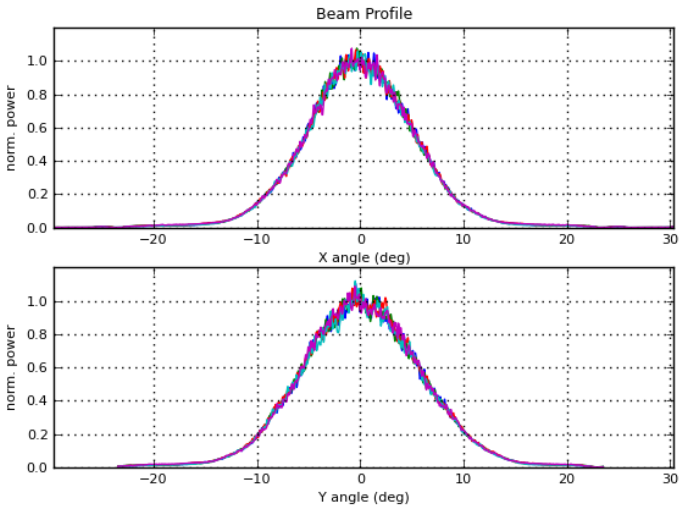

Figure 2 Beam profile of I0-0895S-0000-X006 at 1.2mA, 80°C. Operational Mode CW

Spectral Beam

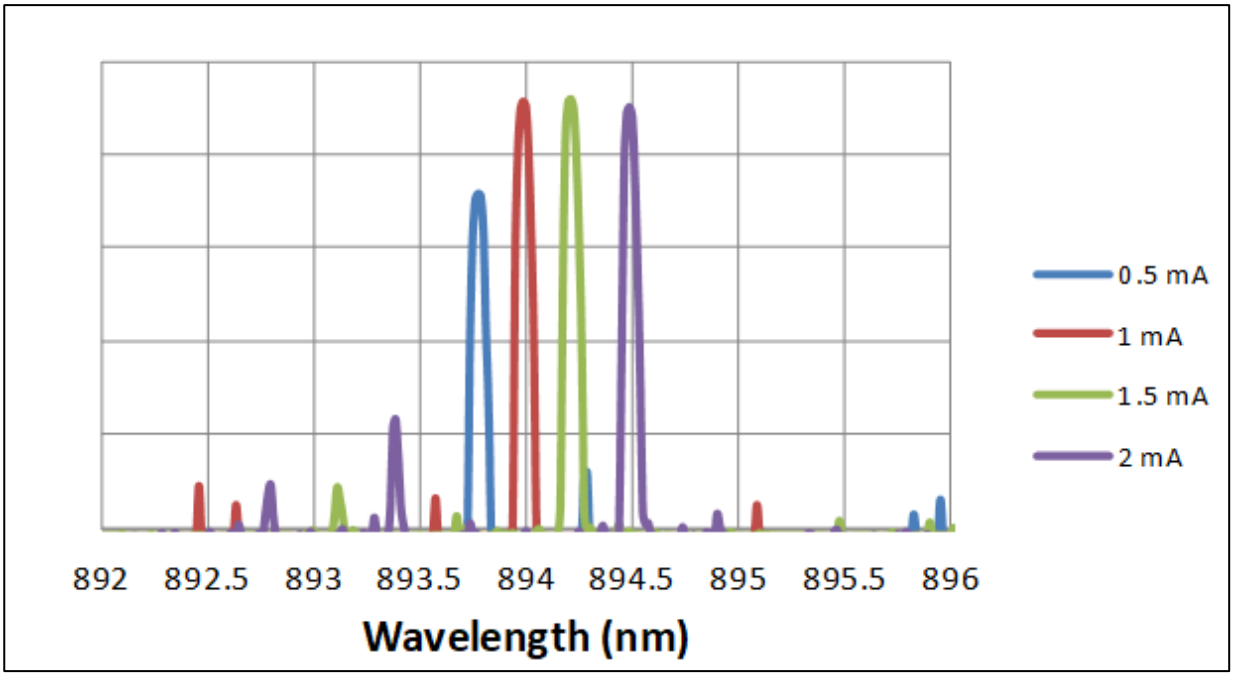

Figure 3 Spectral beam profile of I0-895S-0000-X006 vs Current

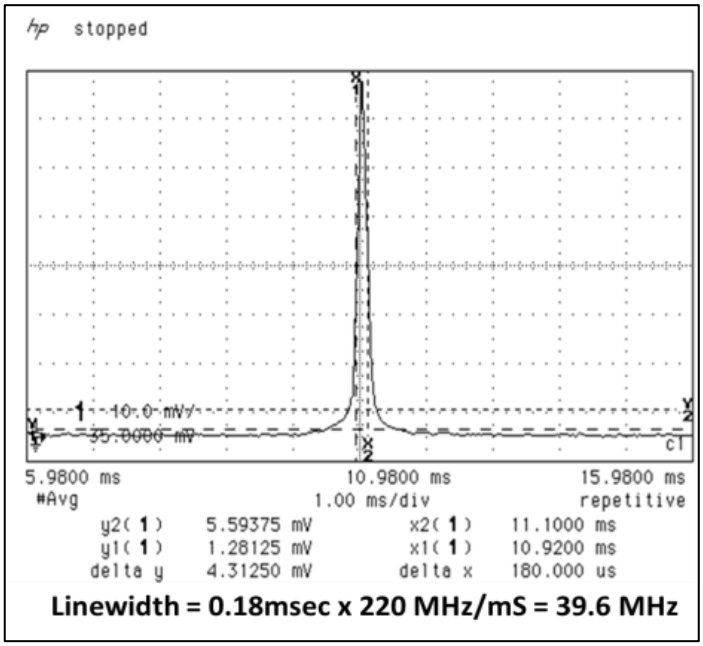

Figure 4 Line-width

Ordering Information

Description	Part Number
Die; 895; S; 1M; S5,S6,S7; 0.2mW; 0.16mm X 0.20mm;	I0-0895S-0000-A005

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