SM67-3N001

Multi-Mode 670nm VCSEL Chip

Features

: 670nm wavelength range

: Operatiing to over 50 °C

: Low current and voltage

: High reliability

:Other configurations available on request

Applications

: Consumer Electronics

: Position Sensors

: Medical Instruments

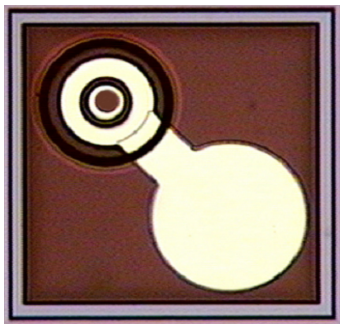
: Home Networking

: Data Link Communication, IEEE1394b

: Low power consumption application

such as battery-operated equipment

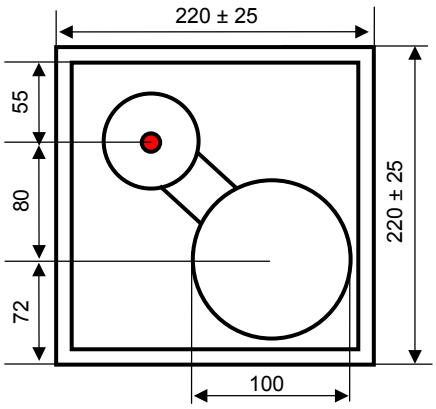
Description



Absolute Maximum Ratings

Parameter	Rating
Storage Temperature	-40 to 85 °C
Operating Temperature	-20 to 50 °C
Lead Solder Temperature	260 °C, 10 sec
Continuous Forward Current	7mA
Continuous Reverse Voltage	5V (@10µA)

Dimensions



Unit: µm

Die Height: 200±15 µm

LASER COMPONENTS GmbH
Werner-von-Siemens-Str. 15, 82140 Olching, Germany, Phone: +49 8142 2864 0, Fax: +49 8142 2864 11, info@lasercomponents.com

Electro-Optics Characteristics (T_a=25°C unless otherwise stated)

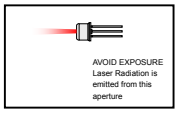
Parameters	Symbol	Specified			Unit	Test Conditions
		Min.	Typ.	Max.		
Threshold Current	I_{th}		2	3.5	mA	CW
Slope Efficiency	η	0.3	0.4		W/A	I_f = 4mA
Optical Output Power	P_o		1.0		mW	I_f = 4mA
Peak Wavelength	λ	660	670	690	nm	I_f = 4mA
Spectral Bandwidth (RMS)	Δ λ			0.85	nm	I_f = 4mA
Beam Divergence	Θ	14		30	°	P_0=1.0mW, (Full Width,1/e^2)
Operating Voltage	V_f		2.1	2.5	V	I_f = 4mA
Dynamic Resistance	R_d		60	80	Ohm	I_f = 4mA

Thermal Characteristics

Parameters	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Max. Operating Temperature Optical Output Power	$P_{T=50\ °C}$		0.7		mW	T_a= 50 °C, 4mA
I_{th} Temperature Variation	ΔI_{th}		1		mA	T_a= -20 to 50 °C
η Temperature Variation	Δη / ΔT		-0.8		%/ °C	T_a= -20 to 50 °C at 4mA
λ Temperature Variation	Δ λ / ΔT		0.05		nm/ °C	T_a= -20 to 50 °C at 4mA

Notes

* These specifications are subject to change without notice.



NOTICE	The inherent design of this component causes it to be sensitive to electrostatic discharge(ESD). To prevent ESD-induced damage and/or degradation to equipment, take normal ESD precautions when handling this product
DANGER	The VCSEL is a class IIIb laser and should be treated as a potential eye hazard. Due to the size of the component, the applicable warning logotype, aperture label, and certification / identification label cannot be placed on the component itself.

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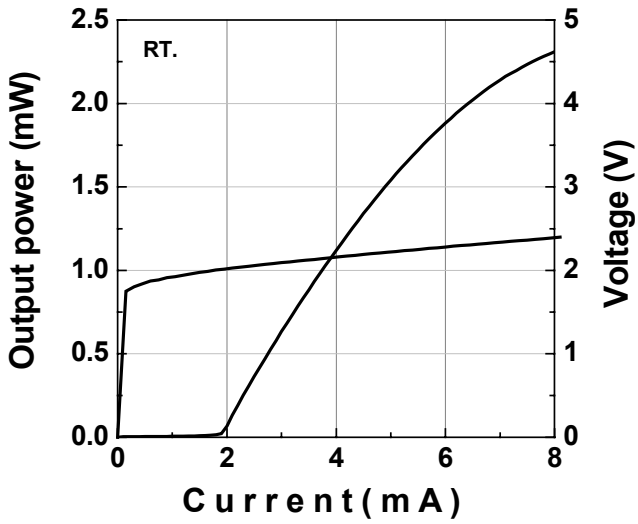
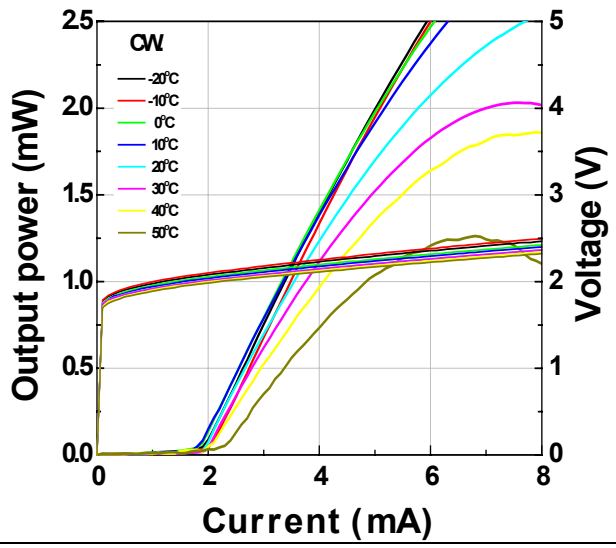
Characteristics Curves

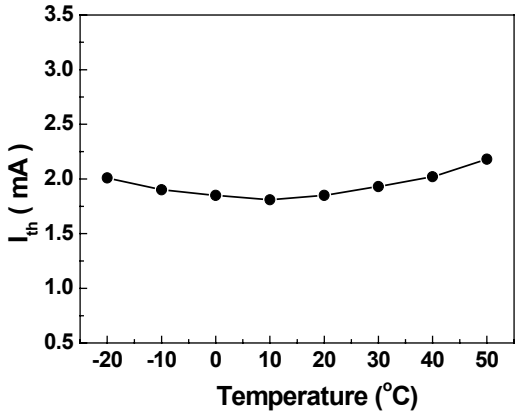
LIV Curve



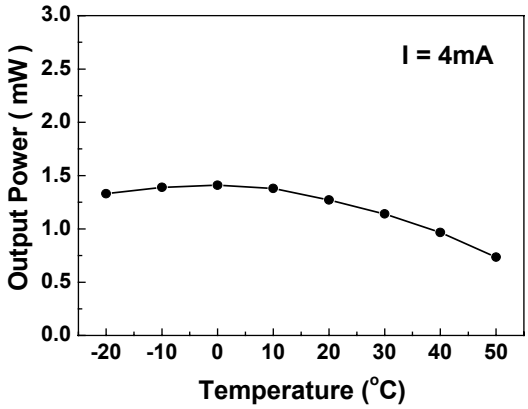
LIV vs Temperature



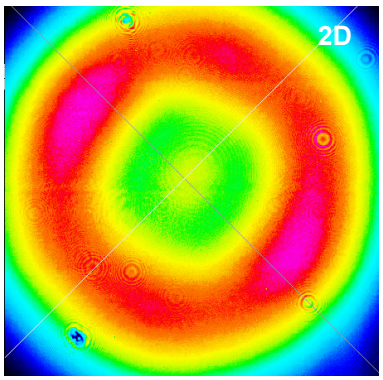
I_{th} vs Temperature



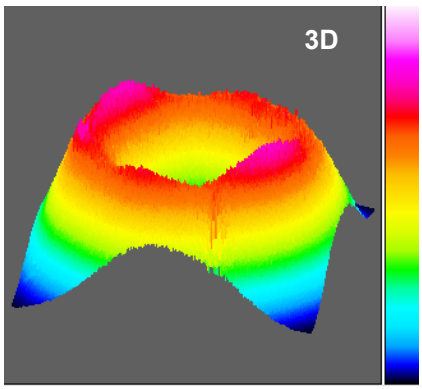
P_o vs Temperature



Far Field Pattern



4mA. RT



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