

# High Power Laser Diode Chip



## Part Number: CHP-122

High Power Chip  
Multi-Mode Fabry-Perot  
CW Wavelength at 1550nm



## Features

- High Output Power
- High Dynamic Range
- High Efficiency
- Standard Bare Die
- Cost Effective

## Application

- Professional Medical
- Home Medical
- Military System
- Laser Rangefinders
- FMCW LiDAR



SemiNex delivers the highest available power at infrared wavelengths between 12xx and 19xx nm. When necessary, we will further optimize the design of our InP & GaSb laser chips to meet our customers' specific optical and electrical performance needs. Diodes, bars and packages are tested to meet customer and market performance demands. Typical results and packaging options are shown. Contact SemiNex for additional details or to discuss your specific requirements.

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## Specification

CHP-122



Optical	Symbol	Typ.	Units
Center Wavelength	$\lambda_c$	1550	nm ( $\pm 20$ )
Output Power (CW)*	$P_{out}$	0.6	watts ( $\pm 10\%$ )
Chip Cavity Length	CL	2500	$\mu\text{m}$
Emitter Width	W	4	$\mu\text{m}$
Spectral Width FWHM	$\Delta\lambda$	15	nm
Slope Efficiency	$\eta$	0.5	W/A
Fast Axis Div.	$\theta_{\perp}$	30	deg FWHM
Slow Axis Div.	$\theta_{\parallel}$	13	deg FWHM
Electrical	Symbol		Units
Power Conversion Eff.	$\eta$	11	%
Threshold Current	$I_{TH}$	0.05	A
Operating Current	$I_{op}$	1.8	A
Operating Voltage	$V_{op}$	3.6	V
Mechanical		Range	Units
Operating Temp.**		-40 to 60	$^{\circ}\text{C}$
Storage Temp.		-40 to 80	$^{\circ}\text{C}$

\*Specified values are rated at a constant heat sink temperature of 20 $^{\circ}\text{C}$ .

\*\*High temperature operation will reduce performance and MTTF.  
Unless otherwise indicated all values are nominal.

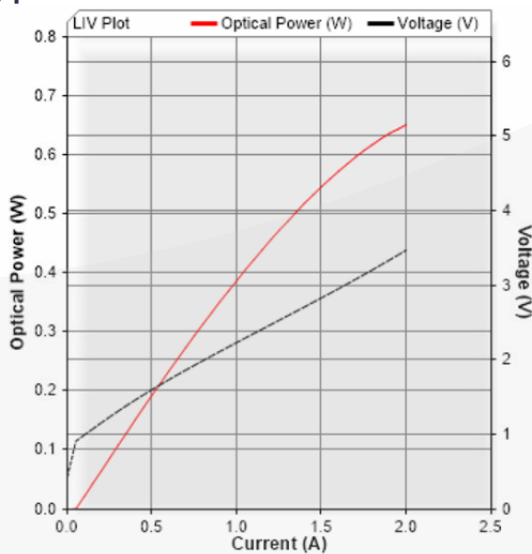
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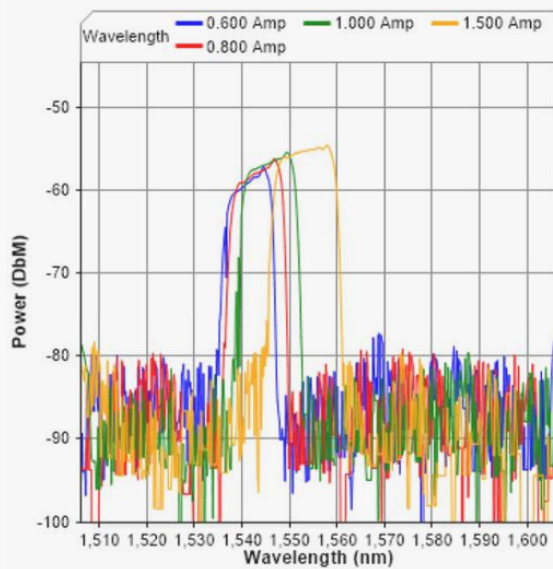
## SemiNex Laser Diodes CHP-122

### Graphs & Data

#### Typical CHP L-I-V Characteristics



#### Typical CHP Output Spectrum

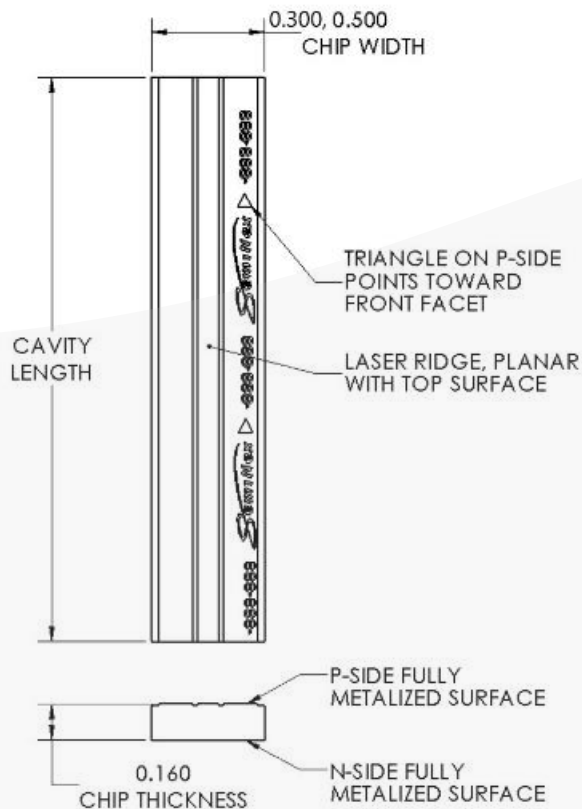


\*Graphs and Data were collected from mounted parts

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## Mechanical Drawing



### CHIP ATTRIBUTES

APERTURE WIDTH ( $\mu\text{m}$ )	Single Mode (4, 5) $\pm 1$ Multi Mode (50, 95, 180, 350) $\pm 3$
CHIP WIDTH ( $\mu\text{m}$ )	300, 500 $\pm 10$
THICKNESS ( $\mu\text{m}$ )	160 $\pm 10$
CAVITY LENGTH ( $\mu\text{m}$ )	Varies $\pm 10$

### P METALIZATION

MATERIAL	THICKNESS (nm)	TOLERANCE (nm)
Ti	50	$\pm 10$
Pt	125	$\pm 25$
Au	250	$\pm 50$

### N METALIZATION

MATERIAL	THICKNESS (nm)	TOLERANCE (nm)
Ti	30	$\pm 10$
Pt	125	$\pm 25$
Au	400	$\pm 40$

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