High Power Laser Diode Chip

Part Number: CHP-150

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



Features

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

Application

- Home Medical
- Laser Rangefinders
- Target Illumination
- Military Systems
- TOF LiDAR for Automotive and Drones

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.

SemiNex Corporation • 153 Andover Street, Suite 201, Danvers, MA 01923 • 978-326-7700 • sales@seminex.com

Individual. Innovative. Exceptional.

Distributed by IMM Photonics GmbH | imm-photonics.de | phone +49 89 321412-57 | sales@imm-photonics.de

High Power Laser Diode Chip

Specification

CHP-150



Optical	Symbol	Typ.	Units
Center Wavelength	λ_c	1550	nm (±20)
Output Power (<10ns)*	P_{out}	40	Watts (±10%)
Output Power (150ns)*	P_{out}	24	Watts (±10%)
Chip Cavity Length	CL	2500	µm
Emitter Width	W	180	µm
Spectral Width FWHM	$\Delta\lambda$	15	nm
Slope Efficiency	η	0.25	W/A
Fast Axis Div.	$\Theta_{\perp}$	30	deg FWHM
Slow Axis Div.	$\Theta_{\parallel}$	14	deg FWHM
Electrical			
Power Conversion Eff.	η	3	%
Operating Current (<10ns)	I_{op}	160	A
Operating Current (150ns)	I_{op}	80	A
Threshold Current	I_{TH}	2	A
Operating Voltage	V_{op}	9.5	V
Duty Cycle	DC	0.1	%
Mechanical		**Range**	**Units**
Operating Temp.**		-40 to 60	°C
Storage Temp.		-40 to 80	°C

*Specified values are rated on B-mounts at a constant heat sink temperature of 20°C.
**High temperature operation will reduce performance and MTTF.
Unless otherwise indicated all values are nominal.

Individual. Innovative. Exceptional.

Distributed by IMM Photonics GmbH | imm-photonics.de | phone +49 89 321412-57 | sales@imm-photonics.de

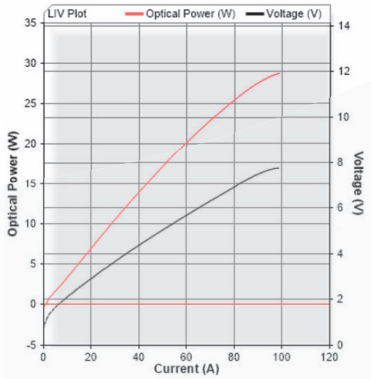
High Power Laser Diode Chip

SemiNex Laser Diodes CHP-150

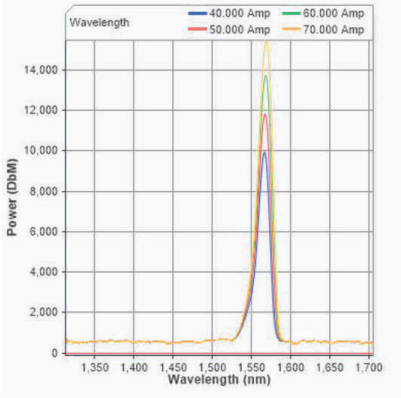
Graphs & Data



Typical CHP L-I-V Characteristics



Typical CHP Output Spectrum



*Tested with 150nsec pulse @ 0.1% Duty Cycle

*Graphs and Data were collected from mounted parts

Individual. Innovative. Exceptional.

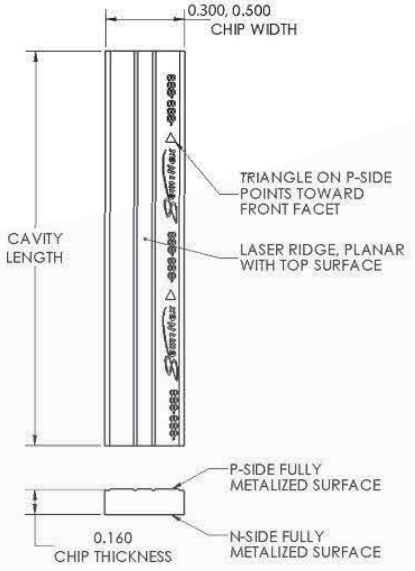
Distributed by IMM Photonics GmbH | imm-photonics.de | phone +49 89 321412-57 | sales@imm-photonics.de

High Power Laser Diode Chip

SemiNex CORPORATION

Mechanical Drawing





CHIP ATTRIBUTES

APERTURE WIDTH (µm)	Single Mode (4, 5) ± 1 Multi Mode (50, 95, 180, 350) ± 3
CHIP WIDTH (µm)	300, 500 ± 10
THICKNESS (µm)	160 ± 10
CAVITY LENGTH (µm)	Varies ± 10

P METALIZATION

MATERIAL	THICKNESS (nm)	TOLERANCE (nm)
Ti	50	± 10
Pt	125	± 25
Au	250	± 50

N METALIZATION

MATERIAL	THICKNESS (nm)	TOLERANCE (nm)
Ti	30	± 10
Pt	125	± 25
Au	400	± 40

All statements, technical information and recommendations related to the product herein are based upon information believed to be reliable or accurate. The accuracy or completeness herein is not guaranteed, and no responsibility is assumed for any inaccuracies. The user assumes all risks and liability whatsoever in connection with the use of a product or its application. SemiNex Corporation reserves the right to change at any time without notice the design, specification, deduction, fit or form of its described herein, including withdrawal at any time of a product offered for sale herein. Users are encouraged to visit www.seminex.com for the latest data. SemiNex Corporation makes no representations that the products herein are free from any intellectual property claims of others. Please contact SemiNex for more information. 2024 SemiNex Corporation



SemiNex Corporation • 153 Andover Street, Suite 201, Danvers, MA 01923 • 978-326-7700 • sales@seminex.com