High Power Laser Diode Chip

Part Number: CHP-148

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

- Professional Medical
- Laser Range Finder
- 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.

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Specification

CHP-148



Optical	Symbol	Typ.	Units
Center Wavelength	λ_c	1550	nm (±20)
Output Power (<10ns)*	P_{out}	14	watts (±10%)
Output Power (150ns)*	P_{out}	9	watts (±10%)
Chip Cavity Length	CL	2500	µm
Emitter Width	W	50	µm
Spectral Width FWHM	$\Delta\lambda$	15	nm
Slope Efficiency	η	0.2	W/A
Fast Axis Div.	$\Theta_{\perp}$	30	deg FWHM
Slow Axis Div.	$\Theta_{\parallel}$	14	deg FWHM
Electrical			
Power Conversion Eff.	η	4	%
Operating Current (<10ns)	I_{op}	70	A
Operating Current (150ns)	I_{op}	35	A
Threshold Current	I_{TH}	0.5	A
Operating Voltage	V_{op}	4.7	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.

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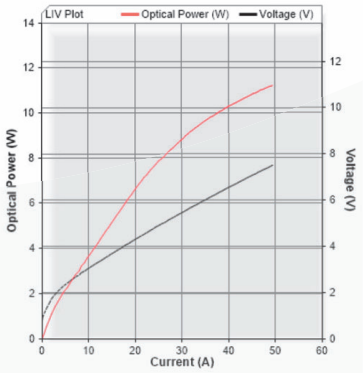
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SemiNex Laser Diodes CHP-148

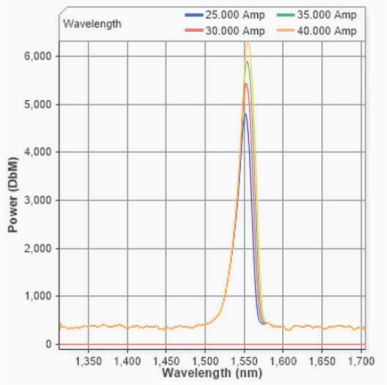
Graphs & Data



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

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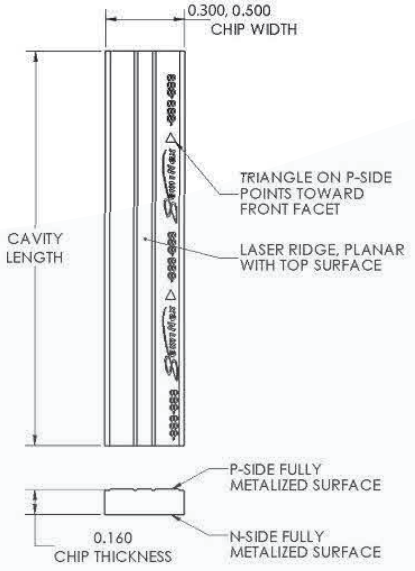
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Mechanical Drawing





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

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