High Power Laser Diode Chip

SemiNex CORPORATION

Part Number: CHP-104

High Power Chip
Multi-Mode Fabry-Perot
CW Wavelength at 1350nm



Features

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

Application

- Professional Medical

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-104



Optical	Symbol	Typ.	Units
Center Wavelength	λ_c	1350	nm (±20)
Output Power (CW)*	P_{out}	5.6	watts (±10%)
Chip Cavity Length	CL	2500	µm
Emitter Width	W	95	µm
Spectral Width FWHM	$\Delta\lambda$	15	nm
Slope Efficiency	η	0.45	W/A
Fast Axis Div.	$\Theta_{\perp}$	28	deg FWHM
Slow Axis Div.	$\Theta_{\parallel}$	9	deg FWHM
Electrical	**Symbol**		**Units**
Power Conversion Eff.	η	23	%
Threshold Current	I_{TH}	0.5	A
Operating Current	I_{op}	14	A
Operating Voltage	V_{op}	1.8	V
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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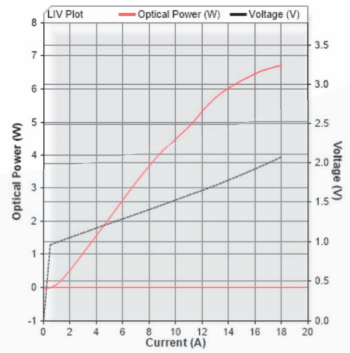
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SemiNex Laser Diodes CHP-104

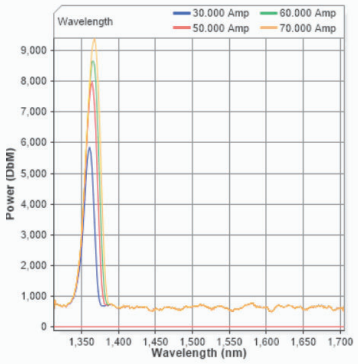
Graphs & Data



Typical CHP L-I-V Characteristics



Typical CHP Output Spectrum



*Graphs and Data were collected from mounted parts

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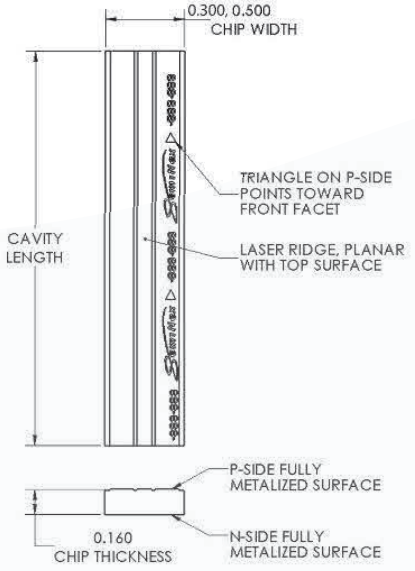
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Mechanical Drawing





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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