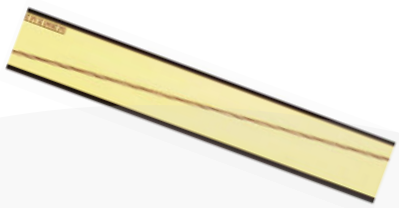
High Power SOA Chip

Part Number: CHP-290 /CHP-290O

High Power SOA Chip
Single-Mode SOA Fabry-Perot
Wavelength at 1280nm & 1310 O-band



Features

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

Application

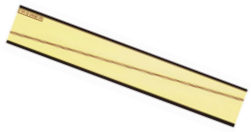
- OTDR
- LiDAR
- Free Space Communications
- Network Test Equipment

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.

High Power SOA Chip

Specification

CHP-290 / CHP-290O



Optical	Symbol	Typ. CHP-290	Typ. CHP-290O	Units
Center Wavelength	λ_c	1280	1310	nm
Output Power @1A*	P_{out}	0.45	0.45	watts (±10%)
Aperture Width	AW	4	4	µm
Aperture Height	AH	1	1	µm
Gain @ Pin = 10µW	G	35	35	dB
Gain Bandwidth	BW	80	80	nm
Beam Exit Angle	θ_{EXT}	19.5	19.5	Degree
Noise Figure	NF	6	6	dB
Polarization Extinction Ratio	PER	18	18	dB
Fast Axis Div.	$\Theta_{\perp}$	28	28	Deg FWHM
Slow Axis Div.	$\Theta_{\parallel}$	16	16	Deg FWHM
Front Facet Reflectivity		<0.1%	<0.1%	
Rear Face Reflectivity		<0.1%	<0.1%	
Waveguide		Tilted Straight	Tilted Straight	
Electrical	**Symbol**			**Units**
Operating Current	I_{op}	1	1	A
Operating Voltage	V_{op}	2	2	V
Mechanical		**Range**	**Range**	**Units**
Chip Length		2500	2500	µm
Chip Width		500	500	µm
Operating Temp.**		-20 to 75	-20 to 75	°C
Storage Temp.		-40 to 85	-40 to 85	°C

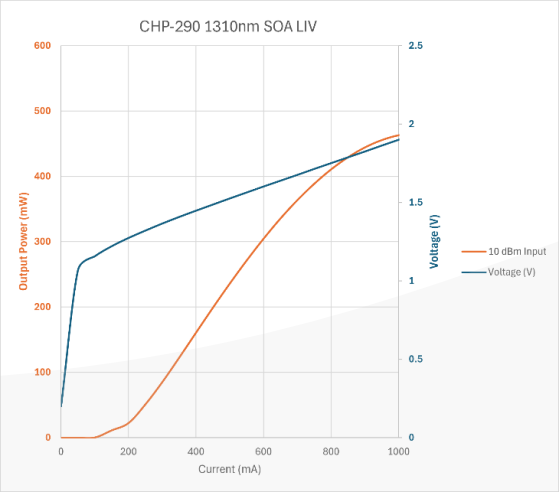
***Optical Power for 1310nm COC-288 and COC-290 with SOA drive current @ 1A and estimated Pin @ 7mW**
***Optical Power for 1550nm COC-285 and COC-287 with SOA drive current @ 1A and estimated Pin @ 21mW**
*** Optical output power depends on the seed laser power, coupling efficiency, and thermal management.**

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

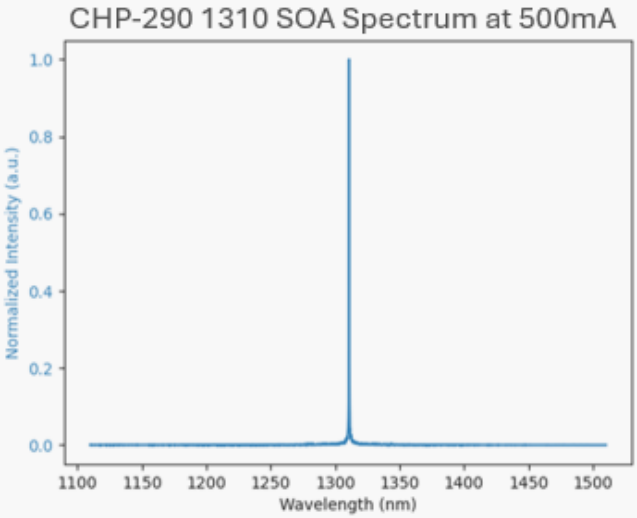
SemiNex SOA CHP-290 & CHP-290O

Graphs & Data

Typical CHP L-I-V Characteristics



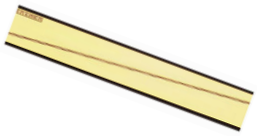
Typical CHP Output Spectrum

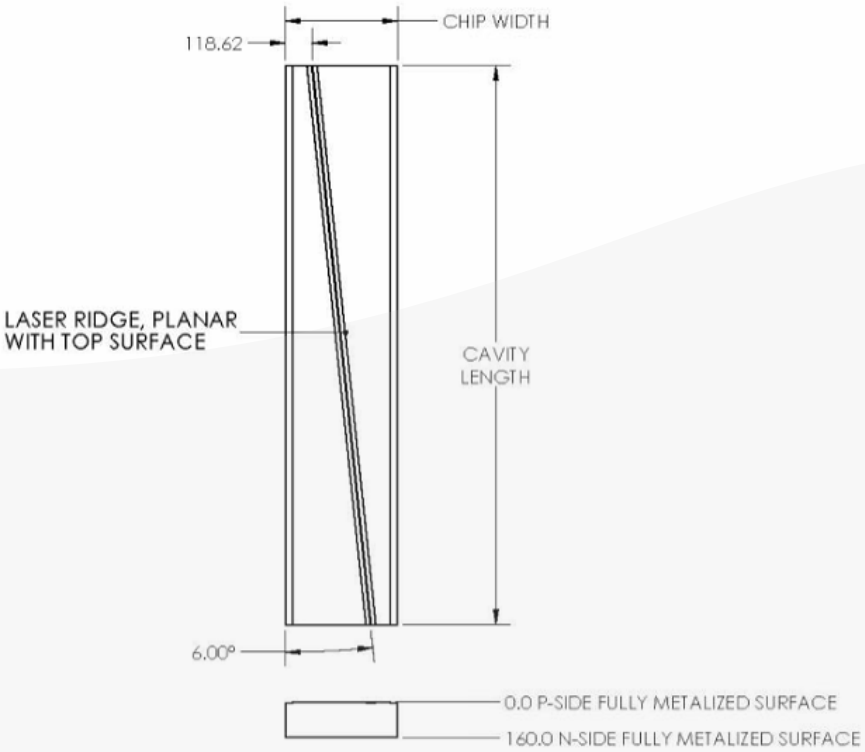


*Graphs and Data were collected from mounted parts

High Power SOA Chip

Mechanical Drawing





CHIP ATTRIBUTES	
WAVELENGTH	1310nm ±20nm
APERTURE WIDTH	4µm ±1µm
CHIP WIDTH	0.500mm ±10µm
THICKNESS	160µm ±10µm
CAVITY LENGTH	2.5mm ±10µm

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

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