ULTRA HIGH POWER SOA

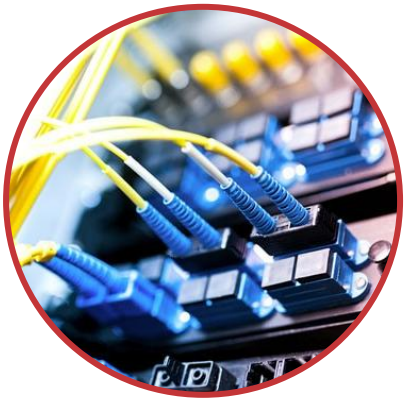
SemiNex' Ultra High Power Semiconductor Optical Amplifier (SOA) can achieve 30dBm (1 Watt) saturation output power with over 25% Power Conversion Efficiency (PCE) at 25°C. This high power platform is built on SemiNex' advanced and proprietary epi and optical waveguide structures which allow the maximum output power exceeds 30dBm. This technology paves ways for high speed and high data throughput co-packaged optics (CPO) in next-generation scale across Data Center infrastructure and the adoption of optical interconnects for AI and high-performance computing applications. Customizable Si PIC integration available.

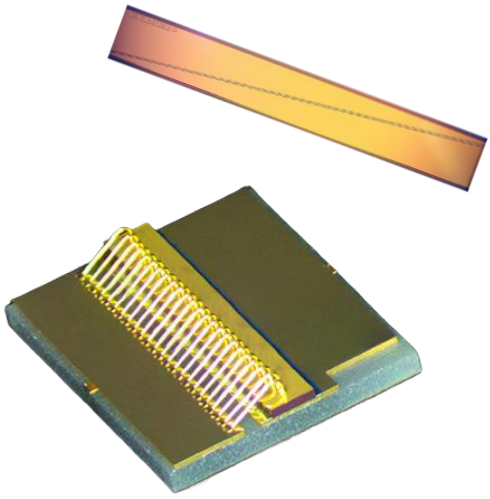
Key Benefits

- Ultra-high output power >30dBm
- Broad gain bandwidth
- High efficiency
- Standard chip on carrier & arrays
- Si PIC integration
- O-band available

Applications

- Co-Packaged Optics
- Scale Across Data Centers
- AI Computing
- Optical Networks





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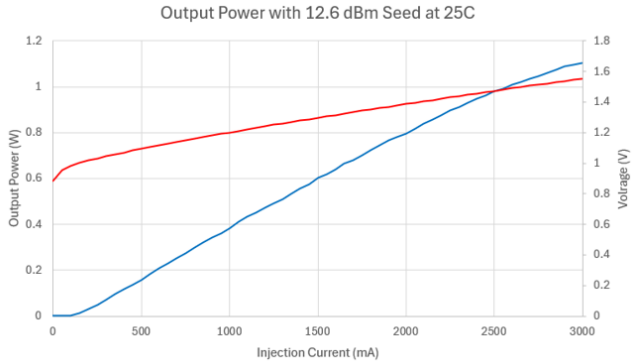
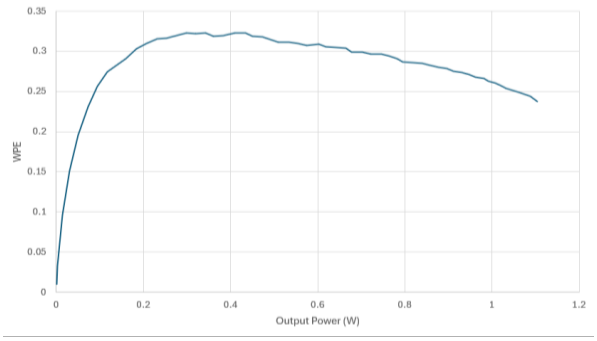
1310nm O-Band Ultra High Power SOA

Ultra High Power SOA COC

Optical	Symbol	Typ. COC-703E-10	Typ. COC-703F-10	Units
Center Wavelength	λ_c	1310	1310	nm
Output Power @ Iop *	P_{out}	0.8	1	Watts
Input Aperture Width	AW	4	4	µm
Output Aperture Width	AW	8	12	µm
3dB Bandwidth	BW	80	80	nm
Gain @ Pin = 10µW	G	25	25	dB
Gain Bandwidth	BW	80	80	nm
Beam Exit Angle	θ_{EXT}	19.5	19.5	degree
Noise Figure	NF	7	7	dB
Polarization Extinction Ratio	PER	18	18	dB
Fast Axis Div. (FWHM)	$\Theta_{\perp}$	38	36	deg FWHM
Slow Axis Div. (FWHM)	$\Theta_{\parallel}$	11	9	deg FWHM
Input Facet Reflectivity		<0.1%	<0.1%	
Output Face Reflectivity		<0.1%	<0.1%	
Waveguide		Tilted Straight	Tilted Straight	
Electrical	**Symbol**			**Units**
Operating Current	I_{op}	2.5	2.5	A
Operating Voltage	V_{op}	1.6	1.6	V
Mechanical		**Range**	**Range**	**Units**
Chip Width		700	700	µm
Chip Length		5	5	mm
Operating Temp.**		-20 to 75	-20 to 75	°C
Storage Temp.		-40 to 85	-40 to 85	°C

Test Data for COC-703F-10





* Optical output power depends on the seed laser power from 10 to 13 dBm, coupling efficiency, and thermal management.

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