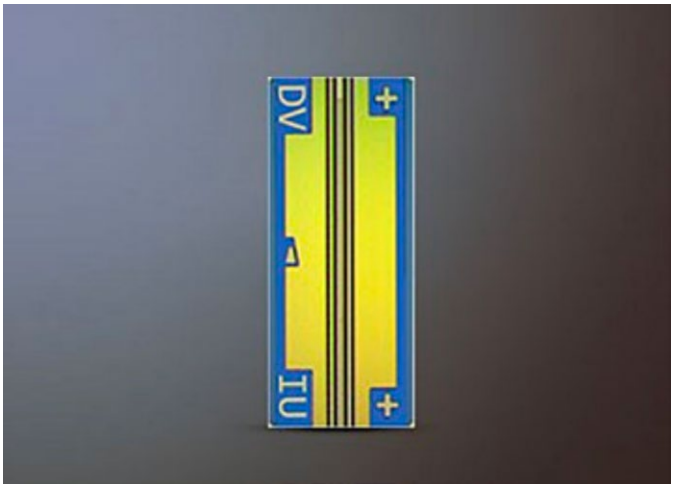
O-Band Semiconductor Optical Amplifier Chips, Non-linear



Description:

An SOA (Semiconductor Optical Amplifier) is a semiconductor element that amplifies light. Antireflective processing is applied on both facets of a semiconductor laser to eliminate the resonator structure. When light enters from outside the semiconductor, the light is amplified by stimulated emission.SOA is used for amplifying an optical signal. SOAs are included in the optical transceiver modules used for communication between data centers to amplify the optical signal in the 1.3 um band used for Ethernet communication in order to compensate for transmission loss.
LD-PD provides SOA modules that have high optical gain of 15 dB or higher and a low noise figure of 7 dB or less. The polarization dependent gain is also 1.5 dB or less, which enables signal amplification with practically no problem.

Features:

- Wide Optical Bandwidth
- High Output Power
- Low Polarization Sensitivity
- MQW or Bulk Structure

Application:

- Booster Amplifier
- Telecom and Datacom
- Loss Compensation

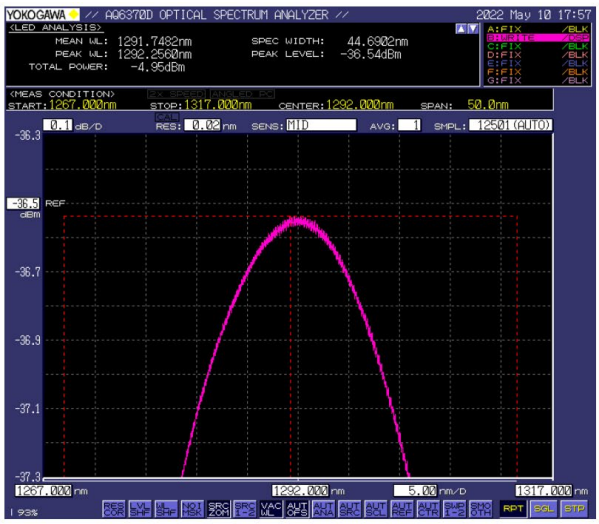
Laser Specifications:

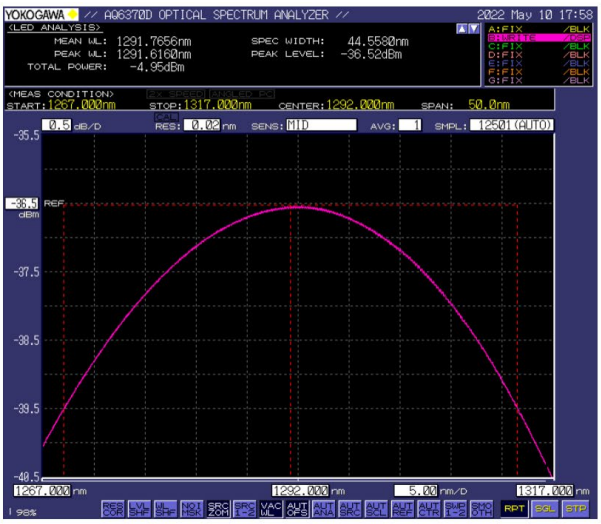
Electrical/Optical Characteristics(Tsub=25°C, CW bias unless stated otherwise)

Parameter	Symbol	Test condition	Min	Typ	Max	Unit
Beam Angle	Ang	IF=120mA, Tc=25°C & Tc=40°C	—	26.5	—	°
Center wavelength	λ C	IF=120mA, Tc=25°C	—	1280	—	nm
		IF=120mA, Tc=40°C	—	1290	—	nm
Operation Current	Iop	Tc=25C & Tc=40°C	100	120	150	mA
Forward Voltage	Vf	IF=120mA, Tc=25C & Tc=40°C	—	1.2	1.8	V
ASE spectrum bandwidth	BW	IF=120mA, Tc=25°C @-3dB	40	—	—	nm
		IF=120mA, Tc=40°C @-3dB	40	—	—	
Gain	G	IF=120mA,λ in=1310 nm, Pin=-25 dBm, Tc=25°C	16	18	—	dB
		IF=120mA,λ in=1310 nm, Pin=-25 dBm, Tc=40°C	15	16	—	
Noise Figure	NF	IF=120mA,λ in=1310 nm, Pin=-25 dBm, Tc=25°C	—	7.5	—	dB
		IF=120mA,λ in=1310 nm, Pin=-25 dBm, Tc=25°C	—	7.5	—	
ASE ripple	R	IF=120mA, Tc=25C & Tc=40°C	—	0.1	0.2	dB
Polarization dependent gain	PDG	IF=120mA,λ in=1310 nm, Pin=-25 dBm, Tc=25°C & Tc=40°C	—	1.5	—	dB
Saturated output power	SOP	IF=120mA,λ in=1310 nm, Pin=-25 dBm, Tc=25°C	7	9	—	dBm
		IF=120mA,λ in=1310 nm, Pin=-25 dBm, Tc=40°C	7	8	—	dBm
Output Power	Po	IF=120mA, Tc=25°C	—	2	—	mW
		IF=120mA, Tc=40°C	—	0.8	—	
Horizontal divergence Angle	θ //	IF=120mA, Tc=25°C & Tc=40°C	—	23	—	°
Vertical divergence Angle	θ⊥	IF=120mA, Tc=25°C & Tc=40°C	—	31	—	°

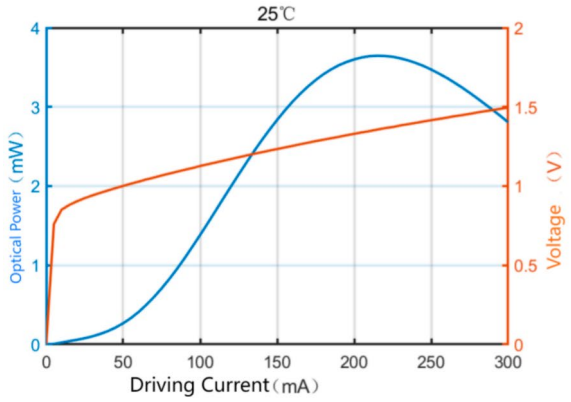
Performance Plots:

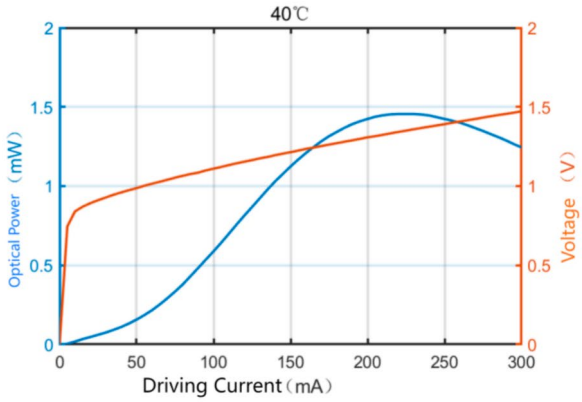
ASE Spectrum CWL@~1290nm, Ripple<0.1dB, BW~44nm @40°C



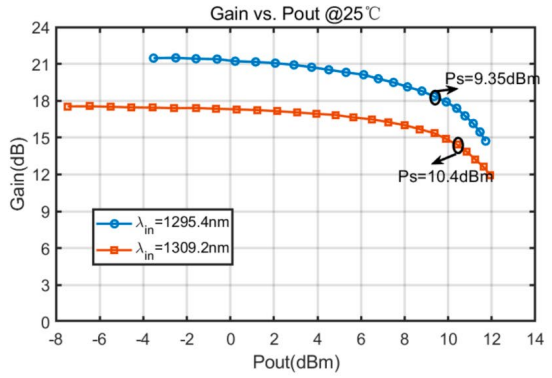


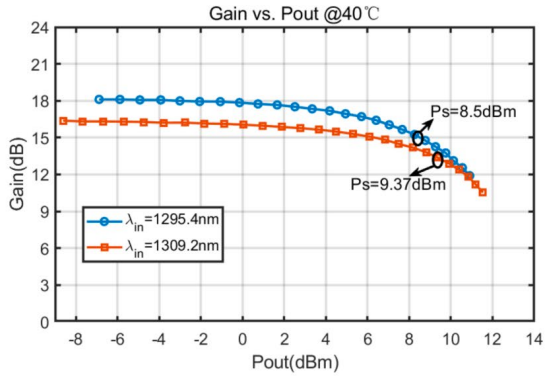
PIV Cure:



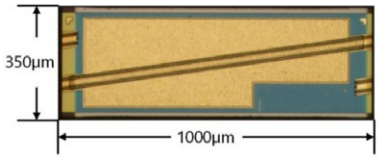


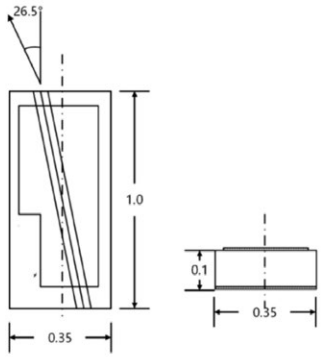
Typical Characteristics:

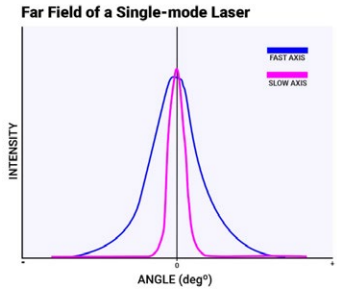


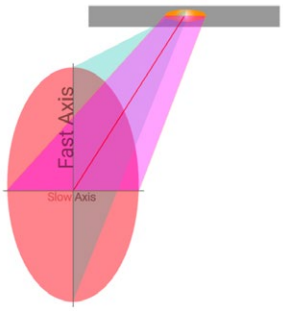


Package Size and far field divergence angle:



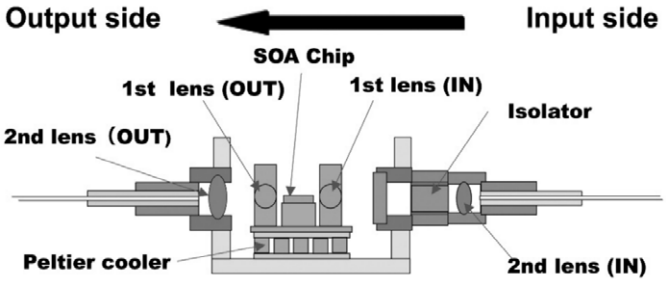






Item	25°C	40°C
Fast axis	31.43 deg	31.24deg
Slow axis	23.24 deg	22.37deg

Recommend Design:



Ordering Info:

PL-SOA--B-2-1310-BC