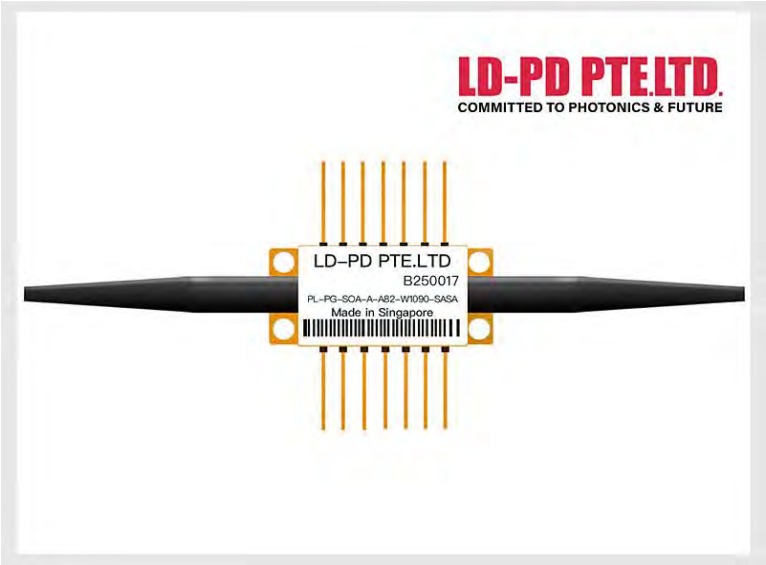
1090nm High Gain Semiconductor Optical Amplifier



Description

The PL-SOA-C-A81-W1090-SASA 1060nm Semiconductor Optical Amplifier (SOA) is single-pass, traveling-wave amplifier that perform well with both monochromatic and multi-wavelength signals.

Features

- Ultra high gain > 40dB at 1060nm
- High saturation output power > 20dBm
- Low ripples
- Strong linear polarization
- RoHS compliance

Application

- Swept-source, tunable lasers
- Booster optical amplifiers
- Optical preamplifiers
- Optical coherence tomography (OCT)

E/O Characteristics

Test conditions: CW operation, chip temperature 25°C, the case is mounted on room temperature heatsink

Parameters	Min.	Typ.	Max.	Unit
Operating current (Iop)		450	500	mA
Forward voltage @ Iop		1.7	2	V
Gain(with input signal -25dBm)				
Small signal gain	28	32		dB
Gain mean wavelength	1075	1090	1105	nm
Gain bandwidth @ -3dB	70	90		nm
Gain saturation output power @ -3dB	15	18		dBm
Noise figure		6		dB
Amplified Spontaneous Emission (ASE)				
ASE optical power ex fiber from each port		7		mW
ASE mean wavelength		1090		nm
ASE bandwidth @ -3dB	80	90		nm
ASE spectrum ripples[3] (RMS in 1nm range, 10pm resolution)		0.02	0.2	dB
ASE polarization extinction ratio (PER) at each port	14	17		dB

TYPICAL SOA PARAMETERS vs. OPERATING CURRENT

Test conditions: CW operation, input signal -25dBm, chip temperature 25°C, case temperature 25°C

OperatingCurrent, mA	Gain, dB	Gain bandwidth @ -3dB, nm	Saturation output power @ -3dB, dBm	Ripples RMS, dB
200	37	20	14	0.01
400	40	23	18	0.02
600	42	26	20	0.03
800	43	28	22	0.04

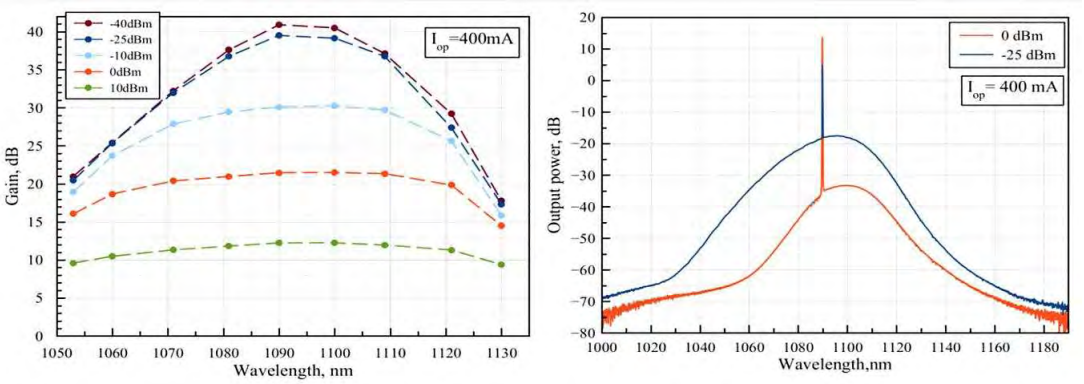
SOA Power Amplification Comparison

(25deg,Pin=10dBm,I=400mA)

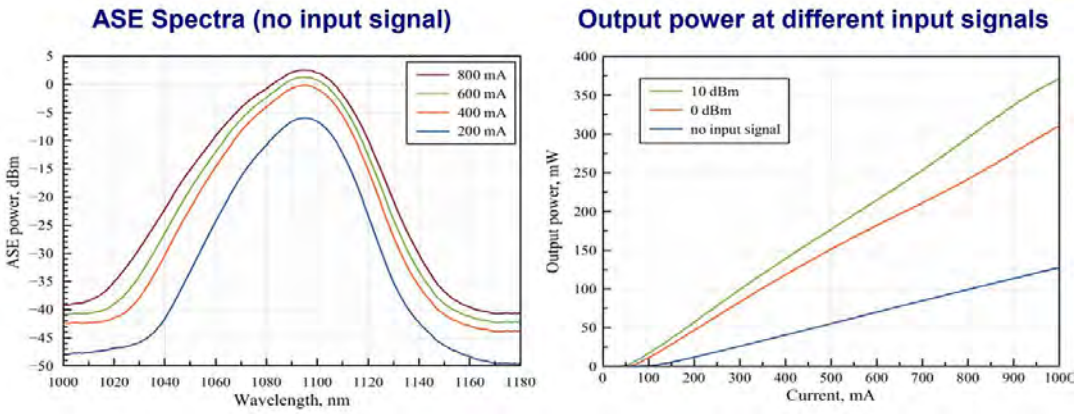
Parameters	Min.	Max.	Unit
SOA reverse voltage	-	2	V
SOA CW forward current	-	800	mA
Input optical power	-	20	dBm
Thermo Electric Cooler current	-	3	A
Thermo Electric Cooler voltage	-	4	V
Fiber bend radius	3	-	cm
Chip operating temperature range	10	40	°C
Case operating temperature range	0	70	°C

SOA Power Amplification Comparison

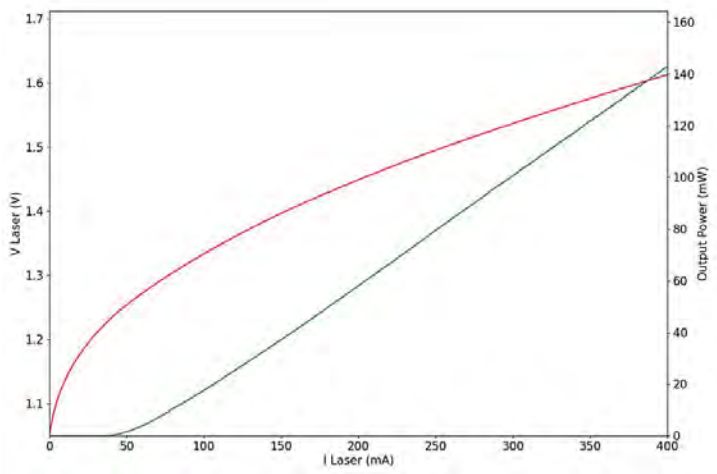
(25deg,Pin=10dBm,I=400mA)



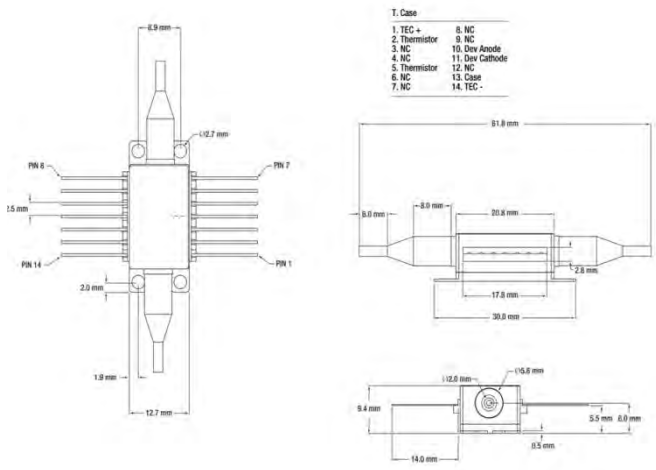
SOA ASE Spectrum(25deg,I=400mA)



SOA Characteristic Graph(25deg,Pin=10dBm)



Dimensions and Fiber definitions



NO.	Function	NO.	Function
1	Thermoelectric Cooler (+)	8	N/C
2	Thermistor	9	N/C
3	NC	10	SOA Anode (+)
4	NC	11	SOA Cathode (–)
5	Thermistor	12	N/C
6	N/C	13	Case
7	N/C	14	Thermoelectric Cooler (-)

Ordering Info

PL-HP-SOA-☆-A8▽-W□□□□-XX

☆ ：Output Power

A：10db

B：15db

C：20dB

▽：Bandwidth

1: 60-70nm

2: 30-40nm

□□□□：Wavelength

780:680nm

850:850nm

*****

1090:1090nm

1550:1550nm

XX: Fiber and Connector Type

SASA=(SMF-28E+ FC/APC)+(SMF-28E+ FC/APC)

SPSP=(SMF-28E+ FC/PC)+(SMF-28E+ FC/PC)

PAPA=(PM Fiber+ FC/APC)+(PM Fiber+ FC/APC)

PPPP=(PM Fiber+ FC/PC)+(PM Fiber+ FC/PC)