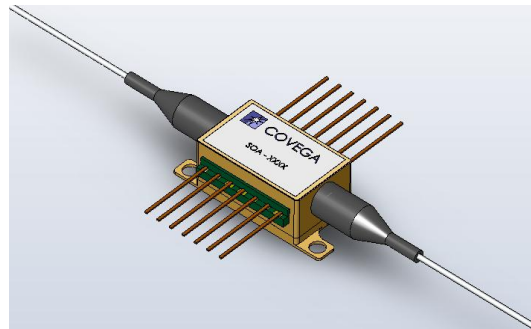# SOA 1117: 1550nm Semiconductor Optical Amplifier, Non-Linear

7.1.2.SP.1117 Rev F

Description

COVEGA's 1117 SOA is a polarization insensitive optical amplifier housed in a standard 14-pin butterfly package. Advanced epitaxial wafer growth and opto-electronic packaging techniques enable high output saturation power, low noise figure, and large gain across a broad spectral bandwidth.

Packaging options include input and output isolators, SMF and PMF fiber tails and choice of connectors.

Features

Applications

- ✓ Optical Booster and In-line Amplification in WDM Metro Network Systems
- ✓ Optical Loss Compensator
  - o Channel Launch (Modulator)
  - o Mid-Stage (Add/Drop)
- ✓ Pre-Amplifier
- ✓ Non-Linear Applications such as 2R / 3R Regeneration, Four Wave Mixing, Wavelength Conversion

- → High Fiber-to-Fiber Gain
- → Broad Spectral Bandwidth
- → Optimized for Non-Linear Applications

Specifications

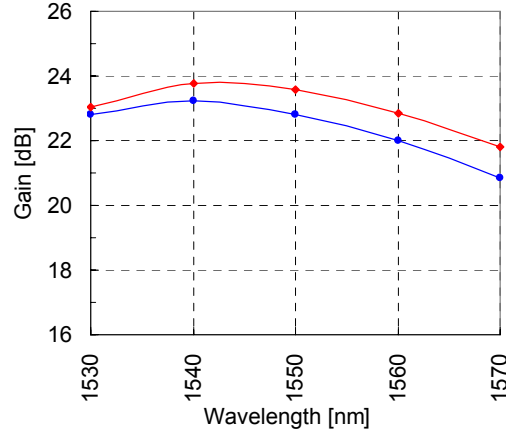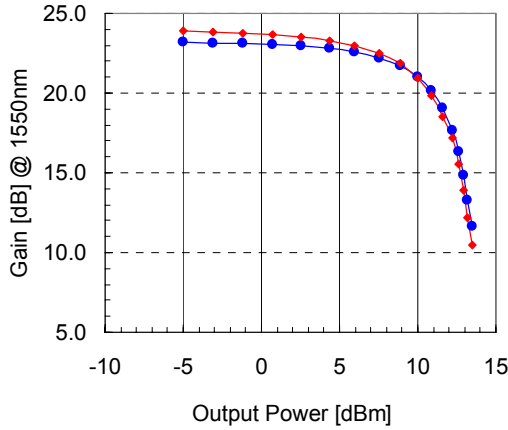CW; T (Chip) = 25°C, T (Case) = 0 - 70°C

Parameter		Min	Typ	Max	
Operating Current	I_{OP}		500	600	mA
Operating Wavelength Range: C-band	Λ	1528		1562	nm
Central Wavelength	λ_C	1520	1550	1570	nm
Optical 3 dB Bandwidth	BW	50	60		nm
Saturation Output Power @ -3 dB across Λ	P_{SAT}	6	9		dBm
Small Signal Gain across Λ @ Pin = -20 dBm	G	15	20		dB
Gain Ripple (p-p) @ I_{OP}	δG		0.2	0.5	dB
Polarization Dependent Gain	PDG		1	2.5	dB
Noise Figure	NF		9	11	dB
Forward Voltage	V_F		1.4	2.0	V
TEC Operation (typ / max @ T_{CASE} = 25°C / 70°C)					
- TEC Current	I_{TEC}		0.2	1.2	A
- TEC Voltage	V_{TEC}		0.4	3.5	V
- Thermistor Resistance	R_{TH}		10K		Ω

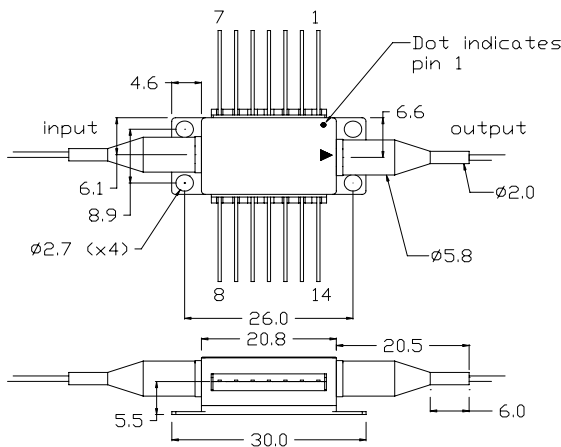SPECIFICATIONS SUBJECTED TO CHANGE WITHOUT NOTICE

The picture is a representation. The actual part may vary from the one shown.
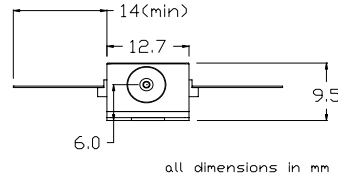
SOA 1117

Performance

Packaging

PIN IDENTIFICATION

1.	TEC +	14.	TEC -
2.	Thermistor	13.	Case
3.	NC	12.	NC
4.	NC	11.	SOA Cathode
5.	Thermistor	10.	SOA Anode
6.	NC	9.	NC
7.	NC	8.	NC

Recommended mounting torque is
10-20oz.in (0.07-0.14N.m).

all dimensions in mm

Ordering Information

SOA 1117 - X - 0 - X - X - X - X - X

X	0	X	X	X	X	X	Numeric
Isolator	**Reserved**	**Fiber jacket configuration***	**Input Fiber**	**Output Fiber**	**Input Connecter**	**Output Connector**	**Reserved**
0 = none		U = SMF-8, loose tube	S = SMF	S = SMF	A = FC/APC	A = FC/APC	0
1 = input only		T = SMF-28, tight jacket	P = PMF#	P = PMF#			
2 = output only		V = PMF 1550 nm, loose tube#					
3 = input & output							
#Isolators are available only on SM fiber configurations							
* see separate fibertail options datasheet							