

# INPHENIX

## Semiconductor Optical Amplifier Device (Wavelength Conversion-type)

IPSAD1303/ IPSAD1503 (1310nm/1550nm)

### Features

- Wide Optical Bandwidth
- High Optical Gain
- Low Polarization Sensitivity
- Low Facet Reflectivity



### Applications

- Wavelength Conversion
- All Optical Router without OEO Conversion
- 2R Regeneration/3R Regeneration

### IPSAD1303 WC-type SOA Device Specifications

Parameter	Symbol	Specifications			Unit
		Min.	Typ.	Max.	
Drive Current	$I_F$	250			mA
Operating Peak Wavelength	$\lambda_p$	1280		1340	nm
3 dB Optical Bandwidth	$\Delta\lambda_{3dB}$	50			nm
Small Signal Gain at $\lambda_p$ @ -25 dBm Signal	$G_{max}$	18			dB
Gain Ripple with respect to $\lambda$	$\Delta G$		0.5	1.0	dB
Saturation Output Power	$P_{sat}$		6		dBm
Noise Figure	NF	9			dB
Polarization Dependent Gain	PDG		0.5	1.0	dB

### IPSAD1503 WC-type SOA Device Specifications

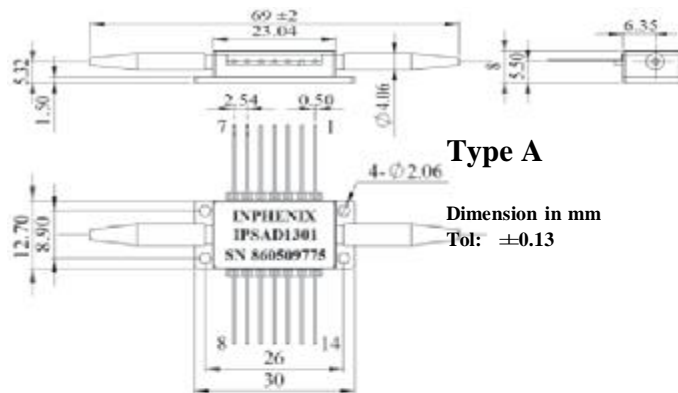
Parameter	Symbol	Specifications			Unit
		Min.	Typ.	Max.	
Drive Current	$I_F$	350			mA
Operating Peak Wavelength	$\lambda_p$	1510		1570	nm
3 dB Optical Bandwidth	$\Delta\lambda_{3dB}$	50			nm
Small Signal Gain at $\lambda_p$ @ -25 dBm Signal	$G_{max}$	16			dB
Gain Ripple with respect to $\lambda$	$\Delta G$		0.5	1.0	dB
Saturation Output Power	$P_{sat}$		5		dBm
Noise Figure	NF	9			dB
Polarization Dependent Gain	PDG		0.5	1.0	dB

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## Absolute Maximum Ratings

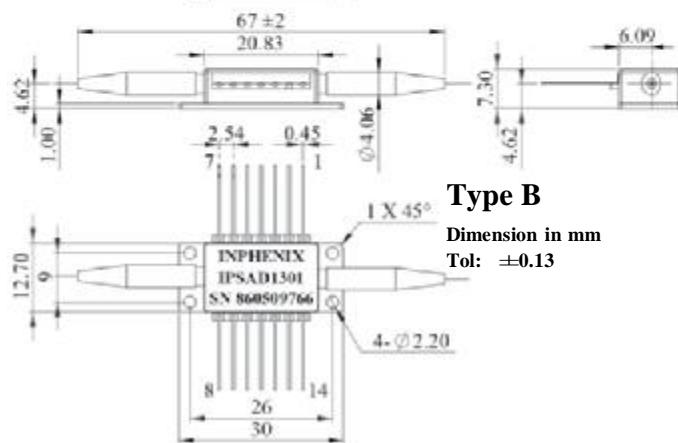
Parameter	Min	Max	Unit
Operating Temperature	-20	70	°C
Storage Temperature	-40	85	°C
SOA Forward Current		300	mA
SOA Reverse Voltage		2.5	V
TEC Drive Current		1.5	A
TEC Drive Voltage		3.6	V
Thermistor Resistance	10 kΩ @ 25 °C		
SOA Chip Temperature Setting	25 °C		
Fiber Type	SMF		
Fiber Jacket	900 μm or 250 μm tight buffer		
Package	14-pin Butterfly		

## Package Dimensions



**Type A**

Dimension in mm  
Tol: ±0.13



**Type B**

Dimension in mm  
Tol: ±0.13

## Pin Definition

Pin	14-pin Butterfly
1	TEC(+)
2	NC
3	Thermistor *
4	Thermistor *
5	NC
6	NC
7	NC
8	NC
9	NC
10	SOA(+)
11	SOA(-)
12	NC
13	Case
14	TEC(-)

Option: Pin 2 & Pin 5 for thermistor

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## Part Numbering System



**Model-**

IPSAD1303: 1310nm Wavelength Conversion-type SOA Device

IPSAD1503: 1550nm Wavelength Conversion-type SOA Device

**Package-**

4: 14-pin Butterfly, Type A

5: 14-pin Butterfly, Type B

**FiberType-**

1-Single Mode

**Jacket Type:**

1- 900  $\mu$ m

2- 250  $\mu$ m

**Connector Type:**

0=No Connectors

5= Deleted

1=Deleted

6= Deleted

2=Deleted

7=SC/APC

3=FC/APC

8=SC/UPC

4=FC/UPC

**Example:** IPSAD1303-5110: 1310 nm Wavelength Conversion-type SOA in 14-pin Butterfly Package with 900  $\mu$ m SM Fiber with no Connectors.

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