

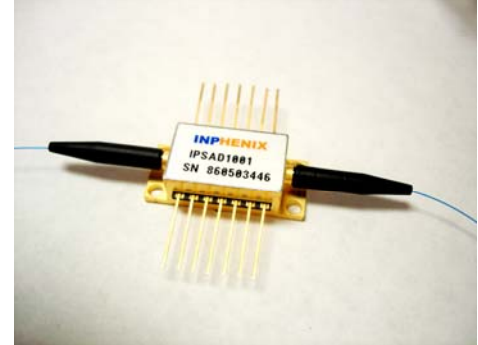
# INPHENIX

## Semiconductor Optical Amplifier Device (In-Line Type)

### IPSAD1003 (1040nm)

#### Features

- Wide Optical Bandwidth
- High Gain
- Low Gain Ripple
- MQW or Bulk Structure



#### Applications

- In-Line Amplifier
- Loss Compensation

#### Device Specifications

Parameter	Symbol	Specifications			Unit
		Min.	Typ.	Max.	
Drive Current	$I_F$	-	250	-	mA
Operating Wavelength	$\lambda_o$	-	1040	-	nm
3dB Optical Bandwidth	$\Delta\lambda_{3dB}$	-	55	-	nm
Small Signal Gain at @ - 25dBm Signal	$G_{max}$	-	25	-	dB
Gain Ripple with Respect to $\lambda$	$\Delta G$	-	0.2	-	dB
Saturation Output Power	$P_{sat}$	-	10	-	dBm
Noise Figure	NF	-	-	8	dB
Polarization Dependent Gain	PDG	10	-	-	dB

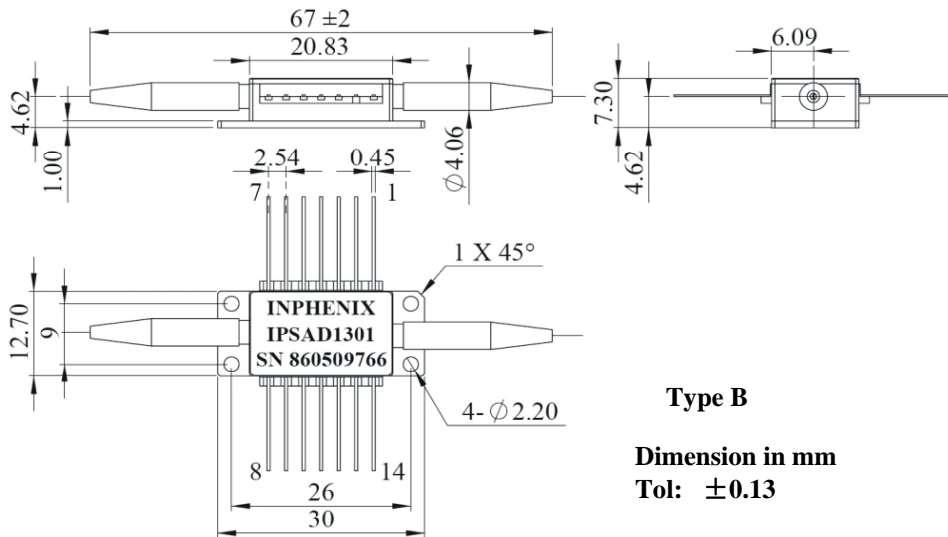
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## Absolute Maximum Ratings

Parameter	Min.	Max.	Unit
Operating Temperature	- 20	70	°C
Storage Temperature	- 40	85	°C
SOA Forward Current	-	350	mA
SOA Reverse Voltage	-	2.5	V
TEC Drive Current	-	1.5	A
TEC Drive Voltage	-	3.6	V
Thermistor Resistance	10k $\Omega$ @ 25°C		
SOA Chip Temperature Setting	25°C		
Fiber Type	SMF/PMF/MMF ClearCurve Fiber		
Fiber Jacket	250 $\mu$ m tight buffer with/without 900 $\mu$ m loose tube, or 900 $\mu$ m tight buffer		
Package	14-pin Butterfly Type B or C		

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## Package Dimensions



**Type B**

**Dimension in mm**

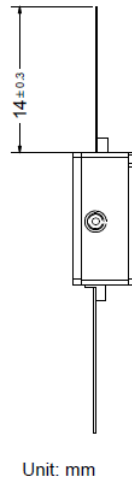
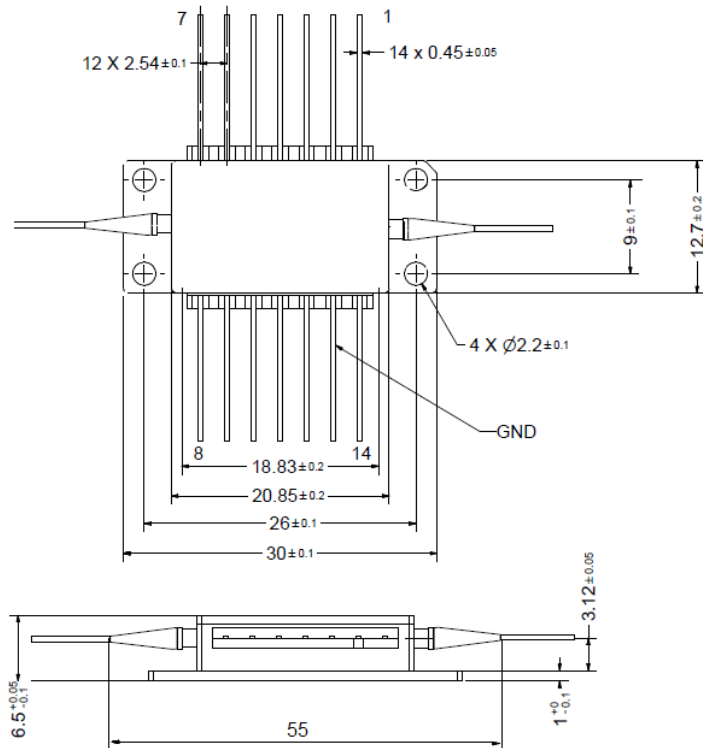
**Tol:  $\pm 0.13$**

## 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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## Type C

Dimension in mm  
Tol: ±0.13

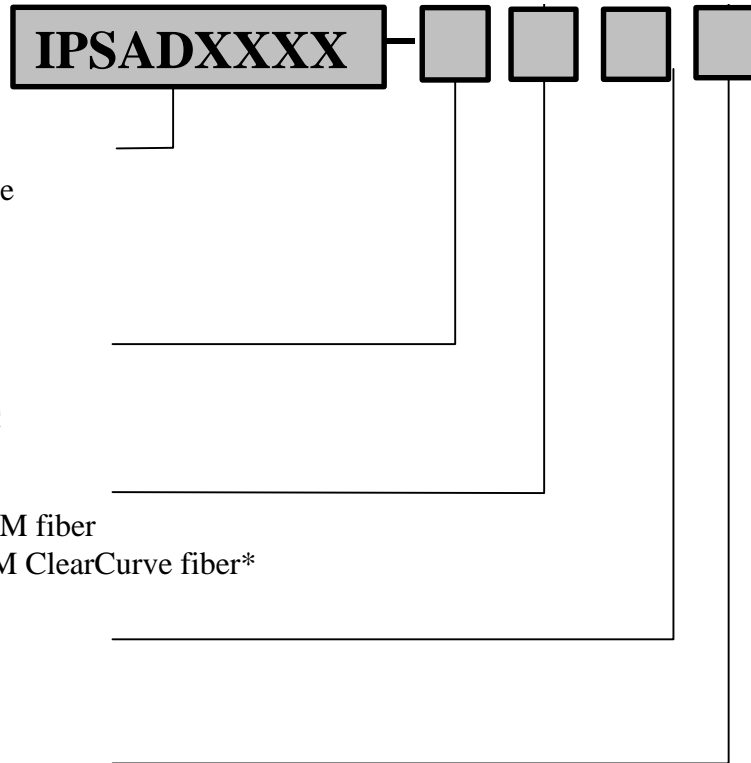
## Pin Definition

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:**  
IPSADXXX: SOA Device

**Package:**  
5: 14-pin Butterfly, Type B  
6: 14-pin Butterfly, Type C

**Fiber Type:**  
1: SM fiber  
2: PM fiber  
3: MM fiber  
8: SM ClearCurve fiber\*

**Jacket Type:**  
1: 900 $\mu$ m  
2: 250 $\mu$ m

**Connector Type:**  
0: No Connectors  
3: FC/APC  
4: FC/UPC  
7: SC/APC  
8: SC/UPC

**Example:** IPSAD1301-5110: 1310nm SOA in 14-pin Butterfly Package with 900 $\mu$ m SM Fiber with no Connectors.

\* SM ClearCurve fiber is not available on IPSAD0801, IPSAD0901 and IPSAD0902 products.

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