

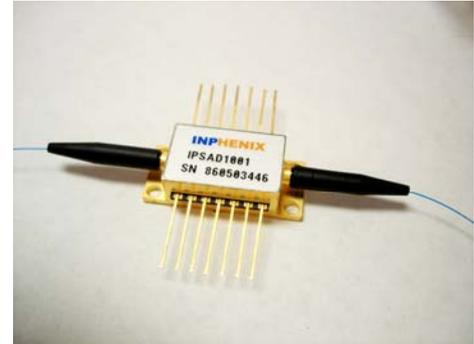
# INPHENIX

## Semiconductor Optical Amplifier Device (Switch Type)

### IPSAD1502 (1550nm)

#### Features

- Wide Optical Bandwidth
- Fast Switching Speed
- High Extinction Ratio
- Low Polarization Sensitivity
- MQW or Bulk Structure



#### Applications

- Optical Gate Switching with Loss Compensation
- Wavelength Routing
- Matrix Switch

#### Device Specifications

Parameter	Symbol	Specifications			Unit	
		Min.	Typ.	Max.		
Drive Current	$I_F$	-	120	180	mA	
Operating Wavelength	$\lambda_o$	1510	1550	1570	nm	
3dB Optical Bandwidth	$\Delta\lambda_{3dB}$	-	50	-	nm	
Small Signal Gain @ - 25dBm Signal	$G_{max}$	-	10	-	dB	
Gain Ripple with Respect to $\lambda$	$\Delta G$	-	0.2	1	dB	
Saturation Output Power	$P_{sat}$	3	-	-	dBm	
Noise Figure	NF	-	-	10	dB	
Polarization Dependent Gain	PDG	-	1.5	-	dB	
Extinction Ratio	ER	40	-	-	dB	
Switching Properties	Rise Time	$t_r$	-	500	-	ps
	Fall Time	$t_f$	-	500	-	ps

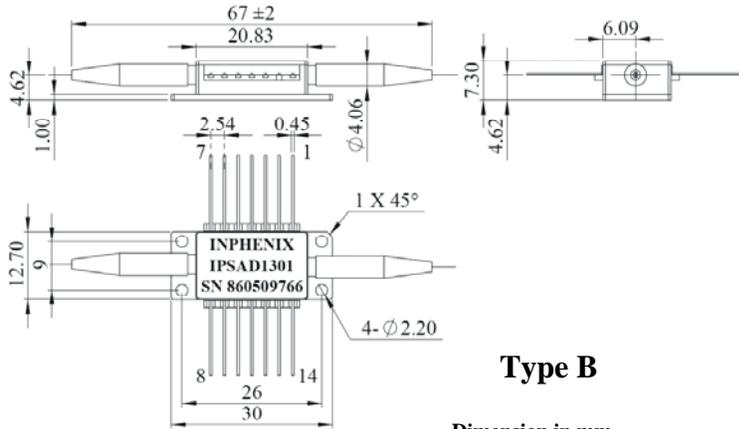
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## Absolute Maximum Ratings

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	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		

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## Package Dimensions



### Type B

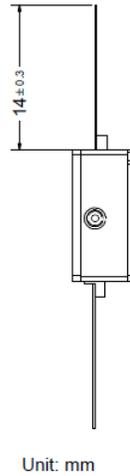
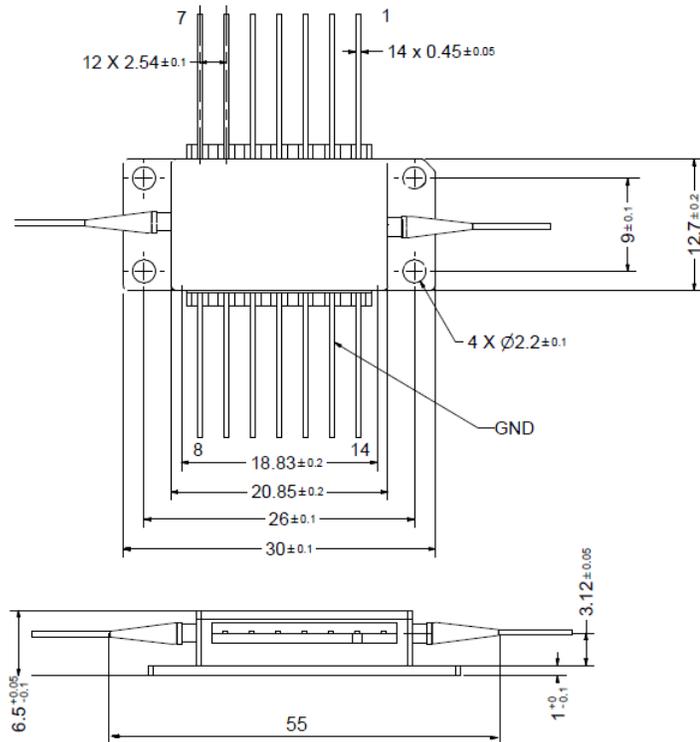
Dimension in mm  
Tol: ±0.13

## 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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Type C

Dimension in mm  
Tol: ±0.13

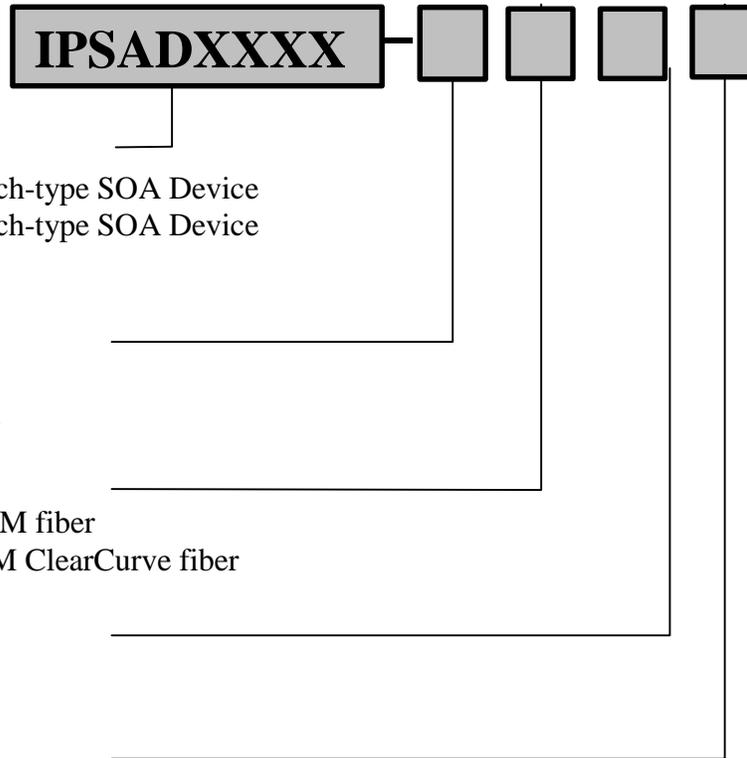
## Pin Definition

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:**

IPSAD1302: 1310nm Switch-type SOA Device  
IPSAD1502: 1550nm Switch-type SOA Device

**Package:**

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

**Fiber Type:**

1: SM fiber                    3: MM fiber  
2: PM fiber                    8: SM ClearCurve fiber

**Jacket Type:**

1: 900µm  
2: 250µm

**Connector Type:**

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

**Example:** IPSAD1302-5110: 1310nm Switch-type SOA in 14-pin Butterfly Package with 900µm SM Fiber with no Connectors.

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