#### **Product Specification, Revision 1.42**

# **INPHENIX**

### Semiconductor Optical Amplifier Device (Switch-type)

### IPSAD1302/ IPSAD1502 (1310nm/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

#### Specifications Unit Parameter Symbol Min. Typ. Max. Drive Current 150 mA IF 100 **Operating Peak Wavelength** 1340 1280 $\lambda_{\rm p}$ nm 3 dB Optical Bandwidth 50 $\Delta \lambda_{3dB}$ nm Small Signal Gain at $\lambda_p$ @ -25 dBm 10 dB G<sub>max</sub> Signal 0.2 dB Gain Ripple with Respect to $\lambda$ $\Delta G$ 1 Saturation Output Power 4 P<sub>sat</sub> dBm NF 9 Noise Figure dB Polarization Dependent Gain PDG 0.2 1 dB 40 **Extinction Ratio** ER dB Switching Properties Rise Time 500 ps $\tau_{\rm r}$ Fall Time 500 $\tau_{\rm f}$ ps

#### **IPSAD1302** Switch-type SOA Device Specifications

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#### **IPSAD1502** Switch-type SOA Device Specifications

Parameter		Symbol	Specifications			Unit
			Min.	Тур.	Max.	Unit
Drive Current		$I_F$		120	180	mA
Operating Peak Wavelength		$\lambda_{ m p}$	1510		1570	nm
3 dB Optical Bandwidth		$\Delta\lambda_{3dB}$	50			nm
Small Signal Gain at λ <sub>p</sub> @ -25 dBm		G <sub>max</sub>		10		dB
Signal						
Gain Ripple with Respect to $\lambda$		$\Delta G$		0.2	1	dB
Saturation Output Power		P <sub>sat</sub>	3			dBm
Noise Figure		NF		10		dB
Polarization Dependent Gain		PDG		0.2	1	dB
Extinction Ratio		ER	40			dB
Switching Properties	Rise Time	$ au_{ m r}$		500		ps
	Fall Time	$ au_{ m f}$		500		ps

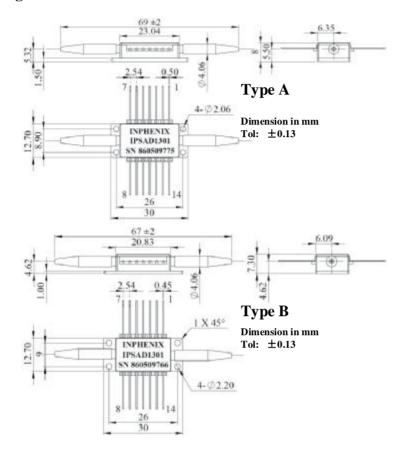
#### **Absolute Maximum Ratings**

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	А	
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			

**Product Specification, Revision 1.42** 

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#### **Package Dimensions**



#### **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

# **INPHENIX**

#### **Part Numbering System**

	IPSAI	D1302	][		
	m Switch-type SOA m Switch-type SOA				
Package- 4: 14-pin Butterfly, 5: 14-pin Butterfly,					
FiberType- 1-Single Mode					
<b>Jacket Type:</b> 1- 900 μm 2- 250 μm					
Connector Type:					
0=No Connectors 1=Deleted 2=Deleted 3=FC/APC 4=FC/UPC	5= Deleted 6= Deleted 7=SC/APC 8=SC/UPC				
-	802-5110: 1310 nm S m SM Fiber with no	• •	in 14-pin 1	Butterfly	

#### **Corporate Office**

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