

# 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

### IPSAD1302 Switch-type SOA Device Specifications

Parameter	Symbol	Specifications			Unit
		Min.	Typ.	Max.	
Drive Current	$I_F$		100	150	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	$G_{max}$		10		dB
Gain Ripple with Respect to $\lambda$	$\Delta G$		0.2	0.5	dB
Saturation Output Power	$P_{sat}$	4			dBm
Noise Figure	NF		8		dB
Polarization Dependent Gain	PDG		0.2	0.5	dB
Extinction Ratio	ER	40			dB
Switching Properties	Rise Time	$\tau_r$		500	ps
	Fall Time	$\tau_f$		500	ps



### IPSAD1502 Switch-type SOA Device Specifications

Parameter	Symbol	Specifications			Unit
		Min.	Typ.	Max.	
Drive Current	$I_F$		120	180	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	$G_{max}$		10		dB
Gain Ripple with Respect to $\lambda$	$\Delta G$		0.2	0.5	dB
Saturation Output Power	$P_{sat}$	3			dBm
Noise Figure	NF		10		dB
Polarization Dependent Gain	PDG		0.2	0.5	dB
Extinction Ratio	ER	40			dB
Switching Properties	Rise Time	$\tau_r$		500	ps
	Fall Time	$\tau_f$		500	ps

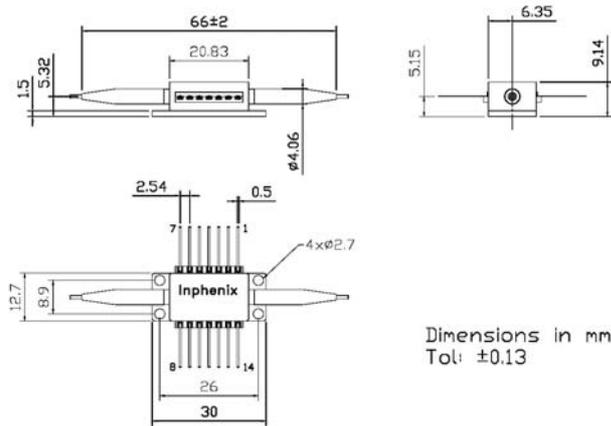
### Absolute Maximum Ratings

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	A
TEC Drive Voltage		3.6	V
Thermistor Resistance	10 k $\Omega$ @ 25 °C		
SOA Chip Temperature Setting	25 °C		
Fiber Type	SMF		
Fiber Jacket	900 $\mu$ m or 250 $\mu$ m tight buffer		
Package	14-pin Butterfly		

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## Package Dimensions



Dimensions 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(-)



**Part Numbering Structure**



**Model-**

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

**Package-**

1: Deleted  
 2: 14-pin Butterfly

**Fiber Type:**

1- 900  $\mu$ m SM Fiber  
 2- 250  $\mu$ m SM Fiber

**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:** IPSAD1302-110: 1310 nm Switch-type SOA in 14-pin Butterfly Package with 900  $\mu$ m SM Fiber with no Connectors.

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