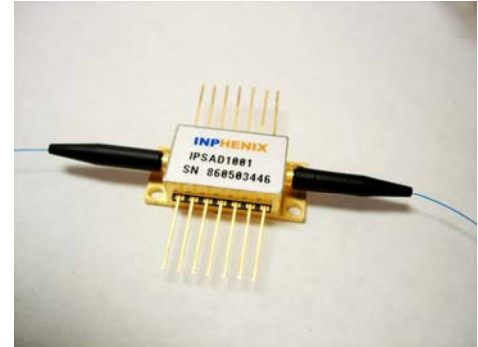# INPHENIX

Semiconductor Optical Amplifier Device (Switch Type)

IPSAD1511 (1550nm)

Features

- Wide Optical Bandwidth
- Fast Switching Speed
- High Extinction Ratio
- 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	-	600	750	mA
Operating Wavelength		λ_o	1500	-	1570	nm
3dB Optical Bandwidth		$\Delta\lambda_{3dB}$	-	-	-	nm
Small Signal Gain @ - 25dBm Signal		G_{max}	22	25	-	dB
Gain Ripple with Respect to λ		ΔG	-	0.2	1	dB
Saturation Output Power		P_{sat}	13	15	-	dBm
Noise Figure		NF	-	-	9.5	dB
Polarization Dependent Gain		PDG	-	-	-	dB
Extinction Ratio		ER	-	80	-	dB
Switching Properties	Rise Time	t_r	-	1000	-	ps
	Fall Time	t_f	-	1000	-	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	-	1000	mA
SOA Reverse Voltage	-	2.5	V
TEC Drive Current	-	1.5	A
TEC Drive Voltage	-	3.6	V
Thermistor Resistance	10kΩ @ 25°C		
SOA Chip Temperature Setting	25°C		
Fiber Type	SMF/PMF/MMF ClearCurve Fiber		
Fiber Jacket	250μm tight buffer with/without 900μm loose tube, or 900μm tight buffer		
Package	14-pin Butterfly		

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Package Dimensions
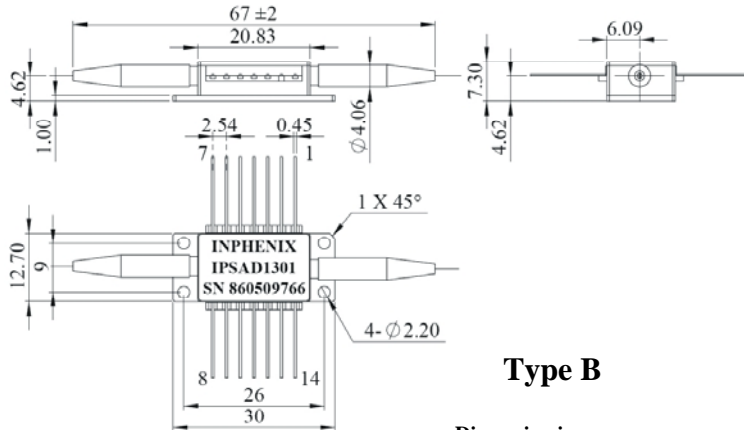
Type B

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
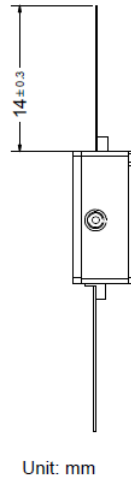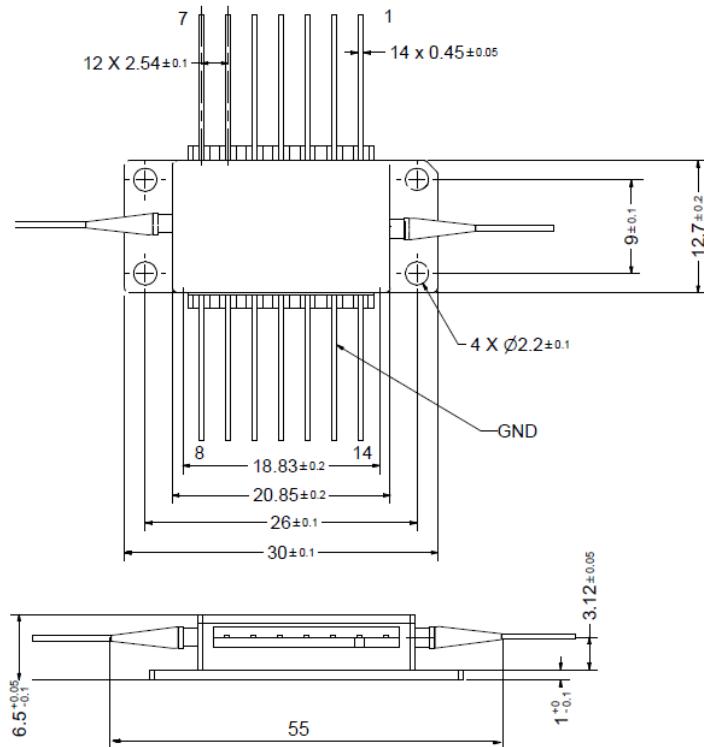
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Unit: mm

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

$$\boxed{\text{IPSADXXXX}} \;-\; \square \; \square \; \square \; \square$$
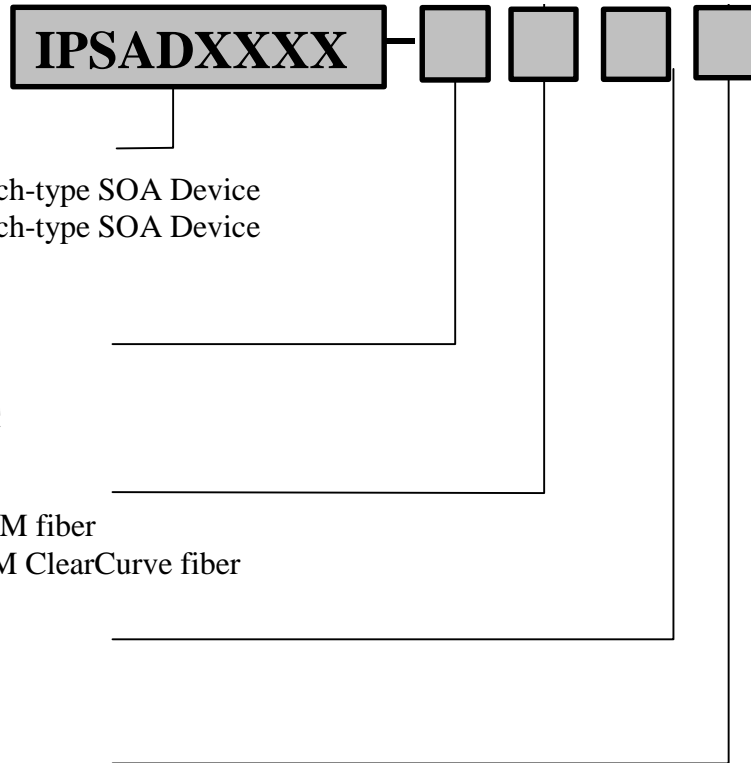
Model:
IPSAD1302: 1310nm Switch-type SOA Device
IPSAD1502: 1550nm Switch-type SOA Device

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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