

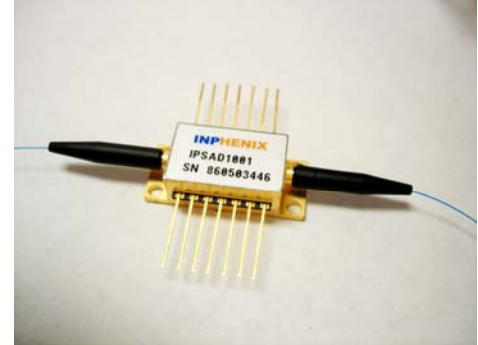
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Semiconductor Optical Amplifier Device (Switch Type)

IPSAD1513 (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	-	500	600	mA	
Operating Wavelength	λ_o	1528	-	1562	nm	
3dB Optical Bandwidth	$\Delta\lambda_{3dB}$	-	-	-	nm	
Small Signal Gain @ - 25dBm Signal	G_{max}	10	13	-	dB	
Gain Ripple with Respect to λ	ΔG	-	0.2	1	dB	
Saturation Output Power	P_{sat}	12	14	-	dBm	
Noise Figure	NF	-	-	9.5	dB	
Polarization Dependent Gain	PDG	-	1	1.8	dB	
Extinction Ratio	ER	-	60	-	dB	
Switching Properties	Rise Time	t_r	-	1000	-	ps
	Fall Time	t_f	-	1000	-	ps

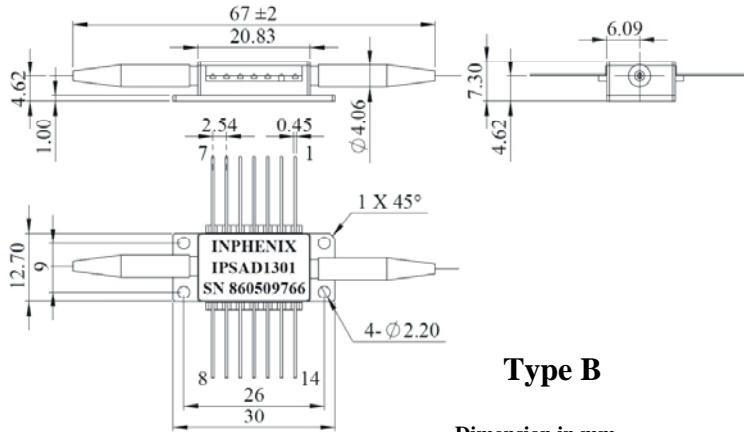
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Absolute Maximum Ratings

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	10k Ω @ 25°C		
SOA Chip Temperature Setting	25°C		
Fiber Type	SMF/PMF/MMF ClearCurve Fiber		
Fiber Jacket	250 μ m tight buffer with/without 900 μ m loose tube, or 900 μ m tight buffer		
Package	14-pin Butterfly		

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Package Dimensions



Type B

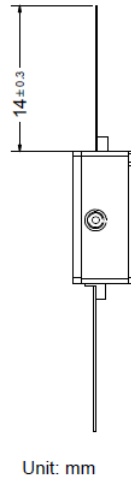
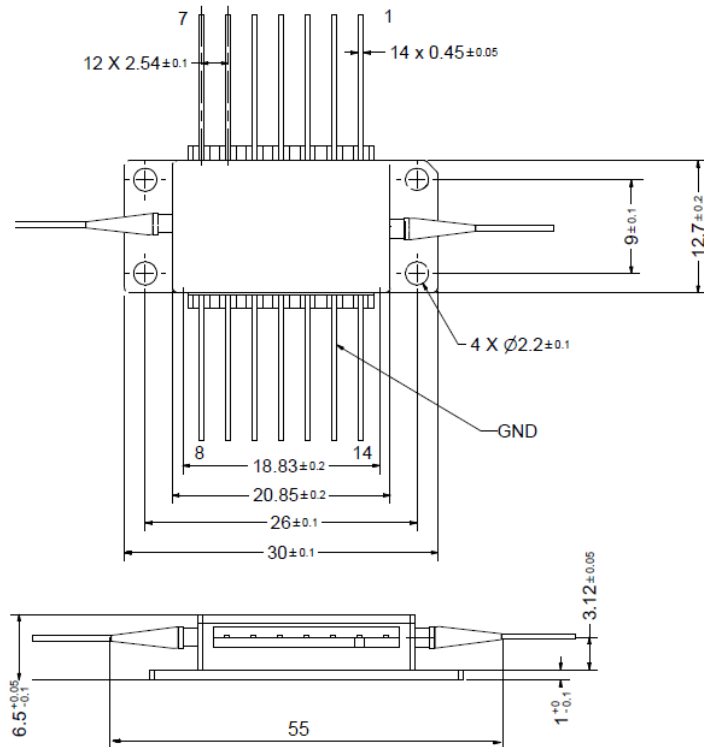
Dimension in mm
Tol: ±0.13

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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Unit: mm

Type C

Dimension in mm
Tol: ±0.13

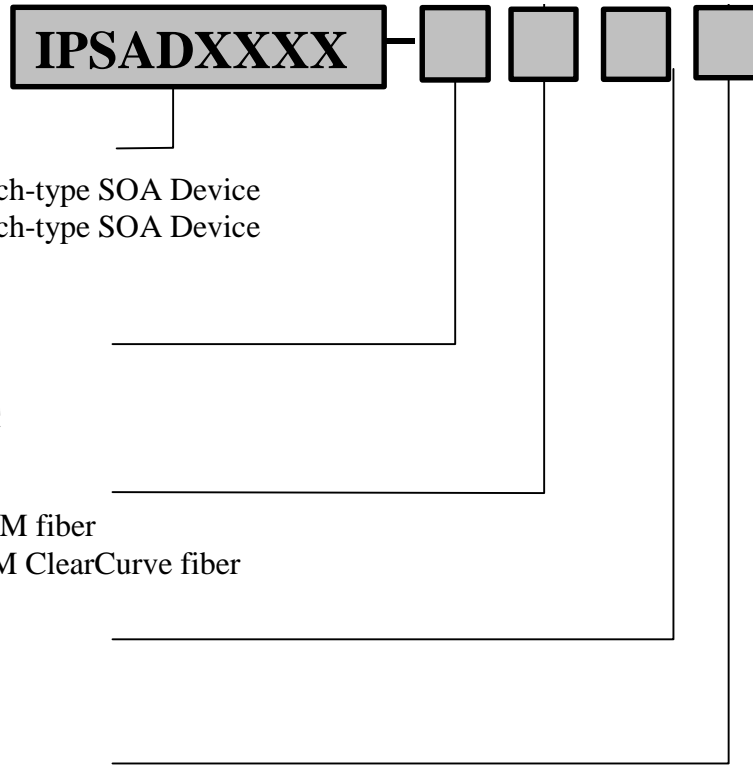
Pin Definition

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



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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