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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	λ_p	1280		1340	nm
3 dB Optical Bandwidth	$\Delta\lambda_{3dB}$	50			nm
Small Signal Gain at λ_p @ -25 dBm Signal	G_{max}		10		dB
Gain Ripple with Respect to λ	ΔG		0.2	1	dB
Saturation Output Power	P_{sat}	4			dBm
Noise Figure	NF		9		dB
Polarization Dependent Gain	PDG		0.2	1	dB
Extinction Ratio	ER	40			dB
Switching Properties	Rise Time	τ_r		500	ps
	Fall Time	τ_f		500	ps



IPSAD1502 Switch-type SOA Device Specifications

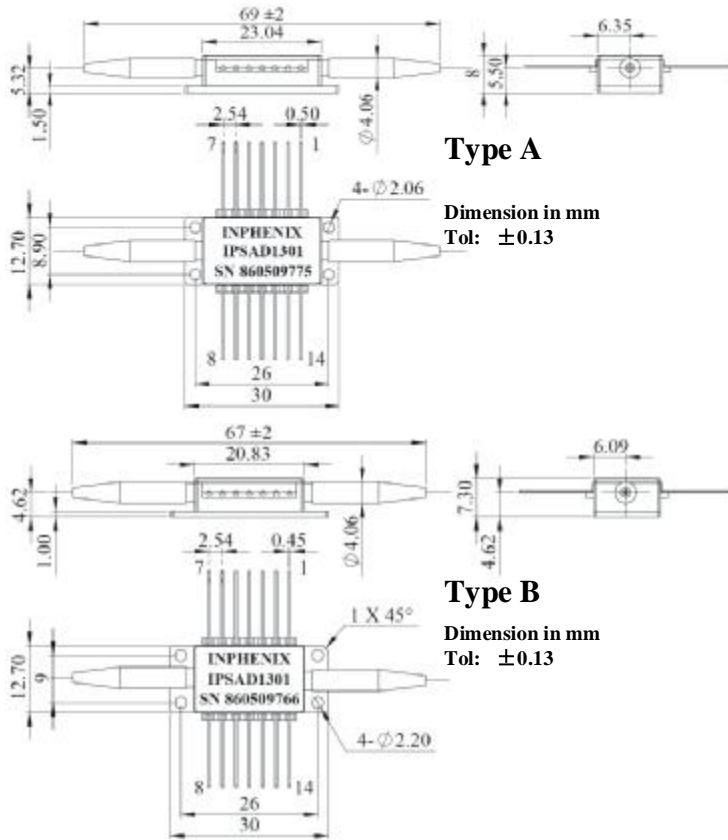
Parameter	Symbol	Specifications			Unit
		Min.	Typ.	Max.	
Drive Current	I_F		120	180	mA
Operating Peak Wavelength	λ_p	1510		1570	nm
3 dB Optical Bandwidth	$\Delta\lambda_{3dB}$	50			nm
Small Signal Gain at λ_p @ -25 dBm Signal	G_{max}		10		dB
Gain Ripple with Respect to λ	ΔG		0.2	1	dB
Saturation Output Power	P_{sat}	3			dBm
Noise Figure	NF		10		dB
Polarization Dependent Gain	PDG		0.2	1	dB
Extinction Ratio	ER	40			dB
Switching Properties	Rise Time	τ_r		500	ps
	Fall Time	τ_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 Ω @ 25 °C		
SOA Chip Temperature Setting	25 °C		
Fiber Type	SMF		
Fiber Jacket	900 μ m or 250 μ m tight buffer		
Package	14-pin Butterfly		

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Package Dimensions



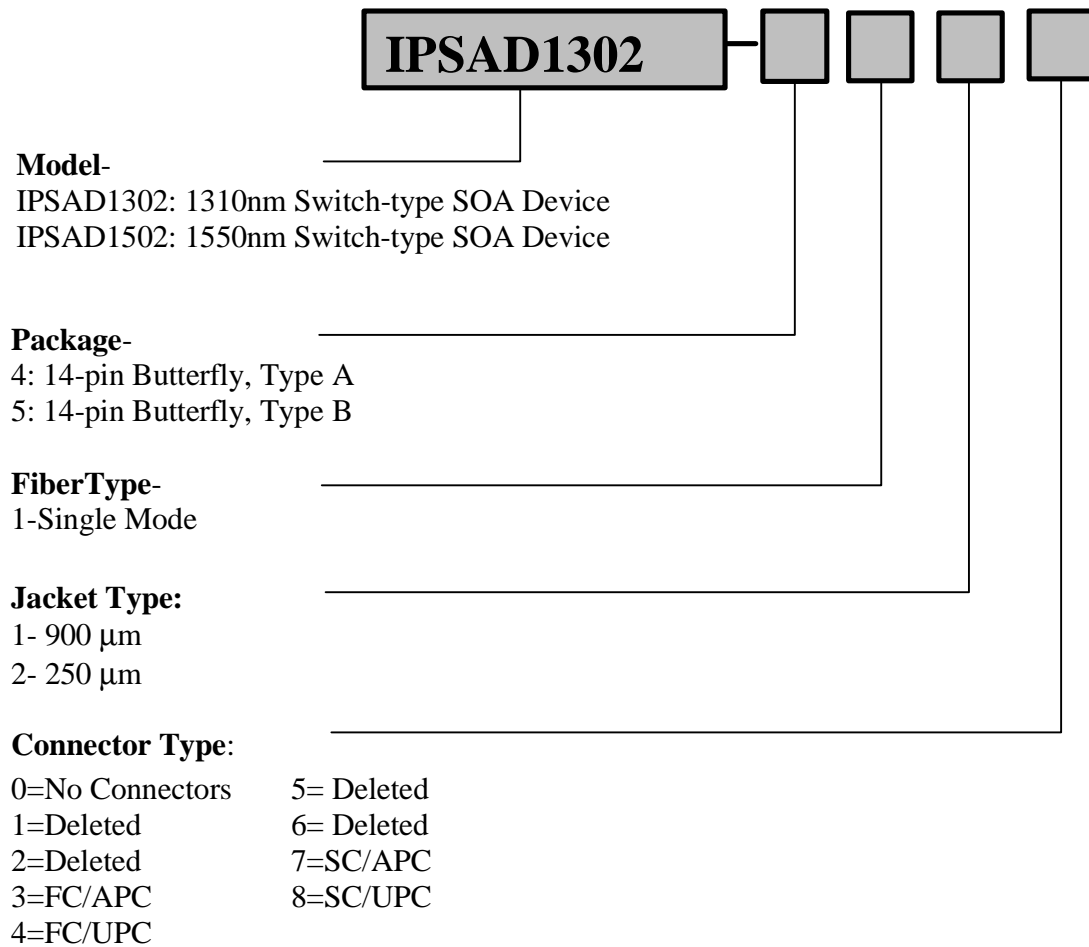
Pin Definition

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

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Part Numbering System



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

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