

1630nm Polarization insensitive Semiconductor Optical Amplifier Devices

1630nm Polarization insensitive Semiconductor Optical Amplifier Devices Datasheet

1. Product Information

Part Number: SOAD-6311100122

Product Description: The Semiconductor Optical Amplifier Devices at 1630nm are designed by using a high quality angled multi-quantum-well SOA chip in a 14-pin butterfly package with TEC/thermistor for closed-loop temperature control which can assure a stable amplified output for a large dynamic input signal. The devices are available in a standard 14-PIN butterfly package at the 1630nm band. The SOA devices have high optical gain, high saturation output power, low polarization dependent loss, low noise figure and broad wavelength range. We have options of optical isolators for output side of the SOA as well as output fiber of SM fibers, PM fibers and other special fibers per customer specifications. The products are Telcordia GR-468-CORE qualified and in compliance with RoHS requirement.

Applications:

- Loss compensation for fiber-optic connection and switch
- WDM fiber-optic networks
- 100G fiber-optic data center

Features:

- Wide optical bandwidth
- High saturation output power
- Low polarization sensitivity
- Low gain ripple

Reliability: Telcordia GR-468-CORE, RoHS



2. Performance Specifications

Absolute Maximum Ratings

Stresses in excess of the absolute maximum ratings can cause permanent damage to the device. These are absolute stress ratings only. Functional operation of the device is not implied at these or any other conditions in excess of those given in the operational sections of the data sheet. Exposure to absolute maximum ratings for extended periods can adversely affect device reliability.

Parameter	Symbol	Condition	Min.	Typical	Max.	Unit
Storage Temperature	T _s	-	-40	-	+85	°C
Operating Case Temperature	T _c	-	-20	-	+70	°C
Forward Current	I _F	-	-	-	650	mA
SOA Reverse Voltage	V _R	-	-	-	2.5	V
TEC Current	I _{TEC}	-	-	1.0	1.5	A
TEC Voltage	V _{TEC}	-	-	2.8	3.5	V

Optical Characteristics (at 25 °C laser temperature)

Parameter	Symbol	Condition	Min.	Typical	Max.	Unit
Center Wavelength	λ _c	T _L =15~35°C, CW	1610	1630	1650	nm
3dB Optical Bandwidth	Δλ _{3dB}	-	40	-	-	nm

3dB Saturation Output Power	Psat	CW	8	-	-	dBm
Small Signal Gain @ λ_c ($P_{in} = -25$ dBm)	G_{max}	-	13	-	-	dB
Gain Ripple with Respect to λ	ΔG	-	-	0.5	1.0	dB
Noise Figure	NF	-	-	8	9	dB
Polarization Dependent Gain	PDG	-	-	0.5	1.0	dB
Optical Isolation	ISO	-	30	-	-	dB

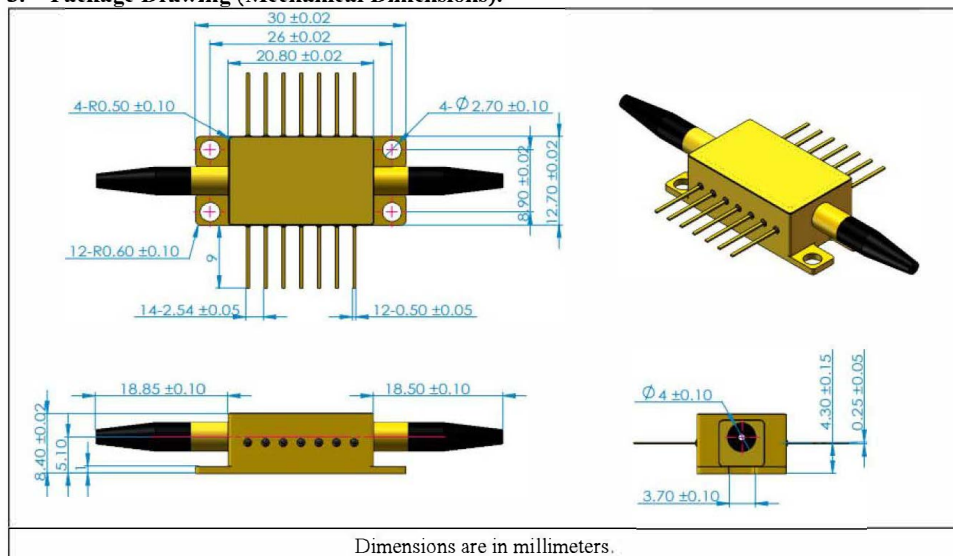
Electrical Characteristics (at 25 °C laser temperature)

Parameter	Symbol	Condition	Min.	Typical	Max.	Unit
Operating Current	I_{op}	-	-	350	500	mA
TEC Set Temperature	T_s	-	15	-	35	°C
Thermistor Current	I_{TC}	-	10	-	100	μ A
Thermistor Resistance	R_{TH}	$T_L = 25$ °C	9.5	10	10.5	K Ω
Thermistor Temperature	-	-	-	-	100	°C

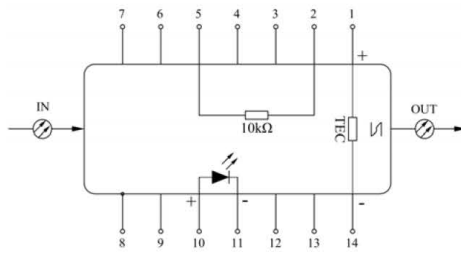
Fiber Pigtail Specifications

Parameters	Specifications	Parameters	Specifications
Fiber Type	SMF-28e	Pigtail Length	1.0 \pm 0.1m
Jacket Type	900 μ m loose tube	Connector Type	FC/APC

3. Package Drawing (Mechanical Dimensions):



4. Pinout Assignments:



1	Thermoelectric Cooler (+)
2	Thermistor
3	NC
4	NC
5	Thermistor
6	NC
7	NC
8	Case Ground
9	NC
10	SOA Anode (+)
11	SOA Cathode (-)
12	NC
13	NC
14	Thermoelectric Cooler (-)

5. Test Report: The test report should be provided when the products are delivered. Following characteristic test data should be included: Saturation Output Power, Center wavelength, Small Signal Gain, PDG, Pinout Assignments.

6. Packaging: Vacuum sealed anti-static plastic package. Following items should be indicated on the outer packaging surface: Product Name; Product Number; Serial Number

7. Ordering Info: SOAD-6311100122=SOAD, semiconductor optical amplifier device, 63=1630nm band, 1=Polarization insensitive, 1=14-PIN butterfly, 1=8dBm, 0=SMF-28e input fiber, 0=SMF-28e output fiber, 1=900µm loose tube, 2=100cm long input and output pigtail length, 2= FC/APC

Ordering Information									
SOAD-	□ □	□	□	□	□	□	□	□	□
	Wavelength	Polarization Type	Package	Output Power	Input Fiber Type	Output Fiber Type	Pigtail Type	Pigtail length	Connector
SOAD-	06: 1060nm	1:Polarization insensitive	1: 14-PIN	0: 6dBm	0: SMF-28e	0: SMF-28e	0:250µm bare fiber	1:50cm	0:None
	31: 1310nm	2:Single polarization	2: 8-PIN	1: 8dBm	1: PMF-1310	1: PMF-1310	1:900µm loose tube	2:100cm	1:FC/UPC
	45: 1450nm			2: 10dBm	2: PMF-1550	2: PMF-1550	2:900µm tight tube	3:150cm	2:FC/APC
	55: 1550nm			3: 13dBm	8: PM980	8: PM980	C: Customized	4:200cm	3:SC/UPC
	60: 1600nm			C: Customized	9: Flexco1060	9: Flexco1060		C:Customized	4:SC/APC
	65: 1650nm				C: Customized	C: Customized			5:LC/UPC
									6:LC/APC
									C:Customized
Example of Ordering Form:SOAD-5521122122-01									
SOAD-	55	2	1	1	2	2	1	2	2
	1550nm	Single polarization	14-PIN	8dBm	PMF-1550	PMF-1550	900µm loose tube	100cm	FC/APC

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