

O-Band Single Mode MEMS Attenuator



- **Product Description**

Multimode/single mode variable attenuator Based on Idealphotonics' unique optical design and processing capabilities, our VOA has the characteristics of being able to quickly adjust optical attenuation, small size, low insertion loss, low polarization-related loss, high mode-related stability and high reliability. It is mainly used in multimode transmission networks, power balancing, product testing, and related instruments and equipment.

Insertion loss ≤ 1.0 dB Fiber connector FC/APC connector

● Product features

Wide operating wavelength range & wide temperature range、 Low insertion loss、 Low polarization-dependent loss and polarization mode dispersion、 High reliability and stability、 Telcordia GR-1221 & GR-1209

● Part Number

MP-VOA-MEMS-O-1-9-SA

● Application area

Multimode product testing、 Multimode transmission network、 Power balancing、 Receiver protection、 Related instruments and equipment

● Core parameters

Wavelength Range	Attenuation Range	Max. Optical Power
O band	$\geq 40\text{dB}$	$\leq 500\text{mW}$



Parameter	Unit	Single mode	Multi-mode
Switching speed	ms	≤ 3	
Lifespan	Cycle	$\geq 1 \times 10^9$	
Maximum optical power	mW	≤ 500	
Drive voltage	V	0~7V	0~9V
Fiber and sleeve type	Made according to customer requirements		
Fiber length	Made according to customer requirements		
Connector type	Made according to customer requirements		

Item	Optical performance			Specification	Notes
1	Attenuator type	Bright or Dark		Bright	Bright: Minimum insertion loss@0V
					Dark: Maximum attenuation@0V
2	Operating wavelength	nm		Multimode: $850 \pm 30\text{nm}$ 1310 $\pm 30\text{nm}$	Single-mode: O/C/L band or 1250-1650
3	Attenuation range	Min	dB	Multimode: ≥ 30 ; Single-mode: ≥ 40	Operating voltage: $\leq \pm 9\text{V}$, Square wave
4	Insertion loss	Max	dB	1	
5	Repeatability@20dB	Max	dB	0.1	
6	Mode-dependent loss @20dB/20Minute	Max	dB	0.2	
7	Return loss	Min	dB	30	
8	Response time	Max	ms	3	



Item	Optical performance			Specification	Notes
9	Maximum optical power	Max	mw	500	
Electrical performance				Specification	
1	Drive Voltage (AC)	Max	V	Single mode: 0-7V, Multimode: 0-9V	
2	Power consumption	Max	mw	10	
Mechanical performance				Specification	
1	Fiber type			50/125um, 62.5/125um, SMF-28E	
	Lifespan	Min		Cycle	$\geq 1 \times 10^9$
2	Fiber Length	Min		m	1

Notes:

*. All indicators are without connectors and are only valid at the above wavelengths, polarization states and temperatures.

**. Indicators are subject to change without prior notice.

Recommended applications

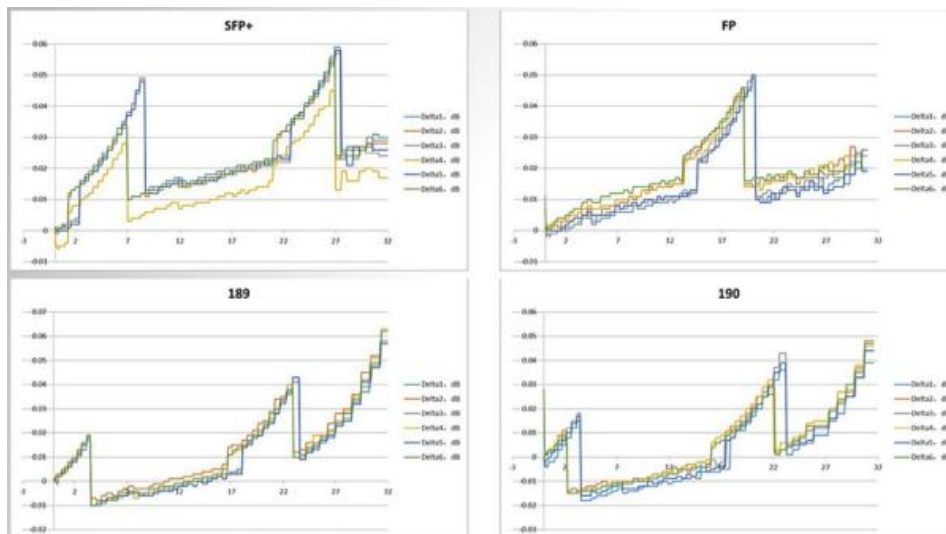
A 5:95 beam splitter is connected to the back end of the multimode VOA, where the 5% port output is connected to the multimode PD, which is the monitoring end, and the 95% port is directly output, which is the output end.

Data is reversed through the monitoring end to control the output voltage so that the output end reaches the set attenuation value.

Test block diagram



Test Data---Attenuation accuracy



1. The horizontal axis is the attenuation value
2. The vertical axis is: the difference between the attenuation value estimated by the monitoring end and the actual attenuation value of the output end.

Recommended power supply conditions

1. Continuous square wave drive, frequency: 5KHZ, waveform: square wave
2. Peak-to-peak value: 0-35V, duty cycle: 50%



Ordering Information

MP-MEMS-VOA- W□□□□ -☆-△-XX

W□□□□: Wavelength

850:850nm

1310:1310nm

1550:1550nm

1570:1570nm

1650:1650nm

O/C/L: O/C/L Band

☆ : Pigtail Length

05:0.5m

1: 1m

10:10m

△: Loose Tube

B:Bare Fiber

9:900um Loose Tube

20:2mm Loose Tube

30: 2mm Loose Tube

XX: Fiber and Connector Type

S5A=MM50/125+ FC/APC

S5P= MM50/125+ FC/PC

S6A=MM62.5/125+ FC/APC



S6P= MM62.5/125+ FC/PC

SMA=SM Fiber+FC/APC

SMP=SM Fiber+FC/PC