

## 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  $\leq 1.0$  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

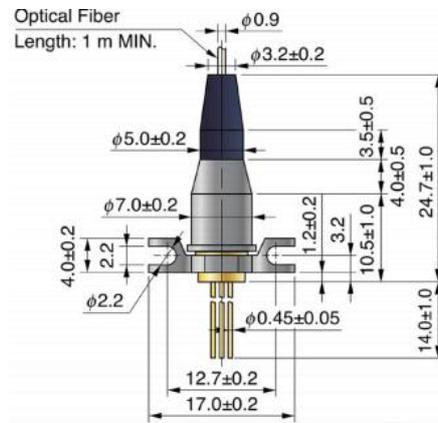
Multimode product testing、 Multimode transmission network、 Power balancing、 Receiver protection、 Related instruments and equipment

## ● Core parameters

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



## ● Dimension Drawing



## ● General Parameters

### Parameters

Parameter	Unit	Single mode	Multi-mode
Attenuation type	nm	Bright or Dark	
Wavelength	nm	O/C/L band or 1250-1650	850 ± 30nm 1310 ± 30nm
Attenuation range	dB	≥ 40/45	≥ 30
Insertion loss (IL)	dB	≤ 0.6	≤ 0.6
Return loss	dB	≥ 50	≥ 30
Repeatability	dB	≤ 0.03dB@ATT ≤ 20dB	
PDL1	dB	≤ 0.2@10dB	
PDL2	dB	≤ 0.5@20dB	
Operating temperature	°C	-5~70	
Storage temperature	°C	-40~85	
Switching speed	ms	≤ 3	
Lifespan	Cycle	≥ 1x10 <sup>9</sup>	
Maximum optical power	mW	≤ 500	
Drive voltage	V	0~7V	0~9V
Fiber and sleeve type	Made according to customer requirements		



Parameter	Unit	Single mode	Multi-mode
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±30nm 1310±30nm	Single-mode: O/C/L band or 1250-1650
3	Attenuation range	Min	dB	Multimode: ≥30; Single-mode: ≥40	Operating voltage: ≤±9V, 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	
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	

Item	Optical performance		Specification	Notes
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

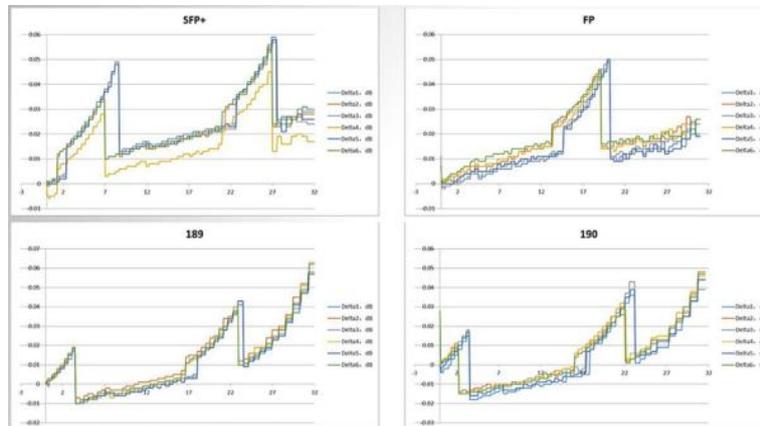
A 5:95 beam splitter is connected to the back end of the multimode VOA, where the 5% port output is connected to the multimode PD, which is the monitoring end, and the 95% port is directly output, which is the output end.

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**