

# MEMS Variable Fiber Optical Attenuator (Φ6mm)

(US patent 8,666,218 and other patents pending)

## Product Description

The MEMS Series VOA is based on a micro-electro-mechanical mechanism featuring integrated compact design, simple construction, easy direct drive, and excellent optical performance of ultra low insertion loss, low PDL, and broad wavelength operation range. The MEMS Series VOA is compliant with the Telcordia 1209 and 1221 reliability standards. The MEMS Series VOA is available in either normally-open or normally-closed configurations. Temperature compensation version is available.

The VOA is driven by applying an electrical voltage. The electrical connection is a flexible PCB with two holes at the end to mate two corresponding pins on the board.



## Performance Specifications

MEMS Series TVOA	Min	Typical	Max	Unit
Operation Wavelength	1260		1620	nm
Insertion Loss <sup>[1]</sup>		0.5	1.0	dB
Polarization Dependent Loss <sup>[2]</sup> (SM version only)		0.15	0.5	dB
Wavelength Dependence Loss <sup>[3], [4]</sup>		0.2	0.6	dB
Attenuation Range		25	30	dB
Attenuation Resolution		Continuous		
Extinction Ratio (PM version only)	18	23	25	dB
Polarization Mode Dispersion (SM version only)		0.01	0.05	ps
Return Loss	45			dB
Response Time		3	6	ms
Driving Voltage <sup>[5]</sup>	3	4.5	5.2 <sup>[7]</sup>	V
Device Resistance	80	100	120	Ω
Optical Power handling		300	500	mW
Operating Temperature	-5		75	°C
Storage Temperature	-40		85	°C
Reliability		Telcordia 1209 and 1221		

Notes:

- [1]. Without connector and at room temperature
- [2]. At attenuation equal or less than 20 dB
- [3]. At 0dB attenuation and at whole temperature range
- [4]. Within 40nm Bandwidth
- [5]. At 20dB attenuation for transparent version, at 0.8dB attenuation for opaque version.
- [6]. This is related to tap ratio. The spec data is regarding 3% tap.
- [7]. Over this value will damage the device.
- [8]. Tap response depends on tap ratio.

## Features

- VOA + Tap
- Compact Size
- Low Cost
- High Reliability
- Low IL,
- Low PDL,
- Low DL ,
- Low DL
- Direct Drive

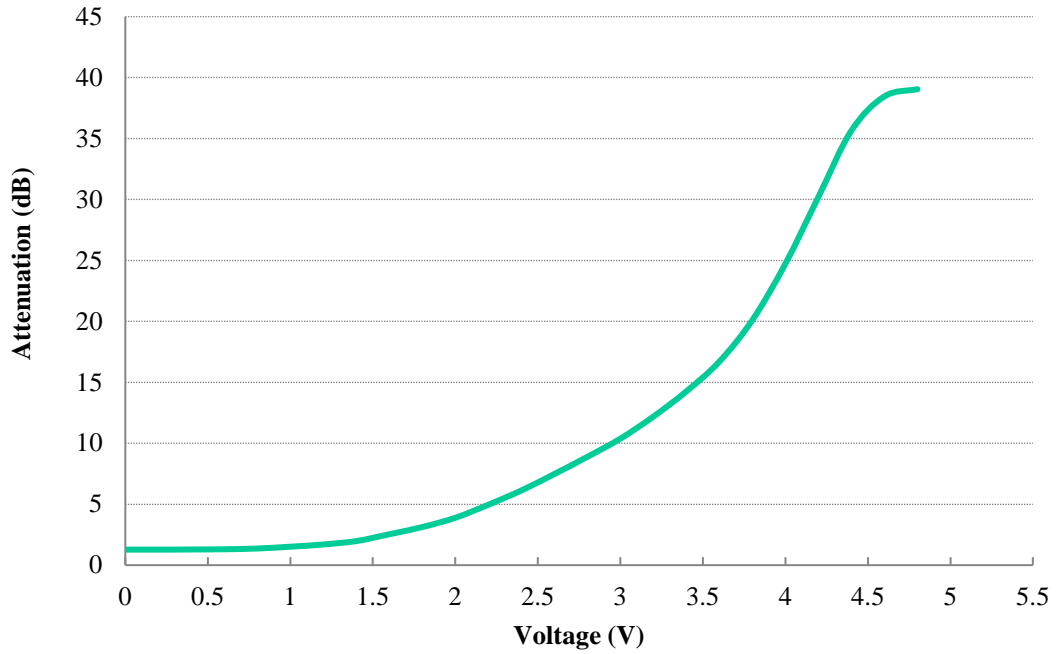
## Applications

- Power Control
- Power Regulation
- Channel Balance
- Instrumentation



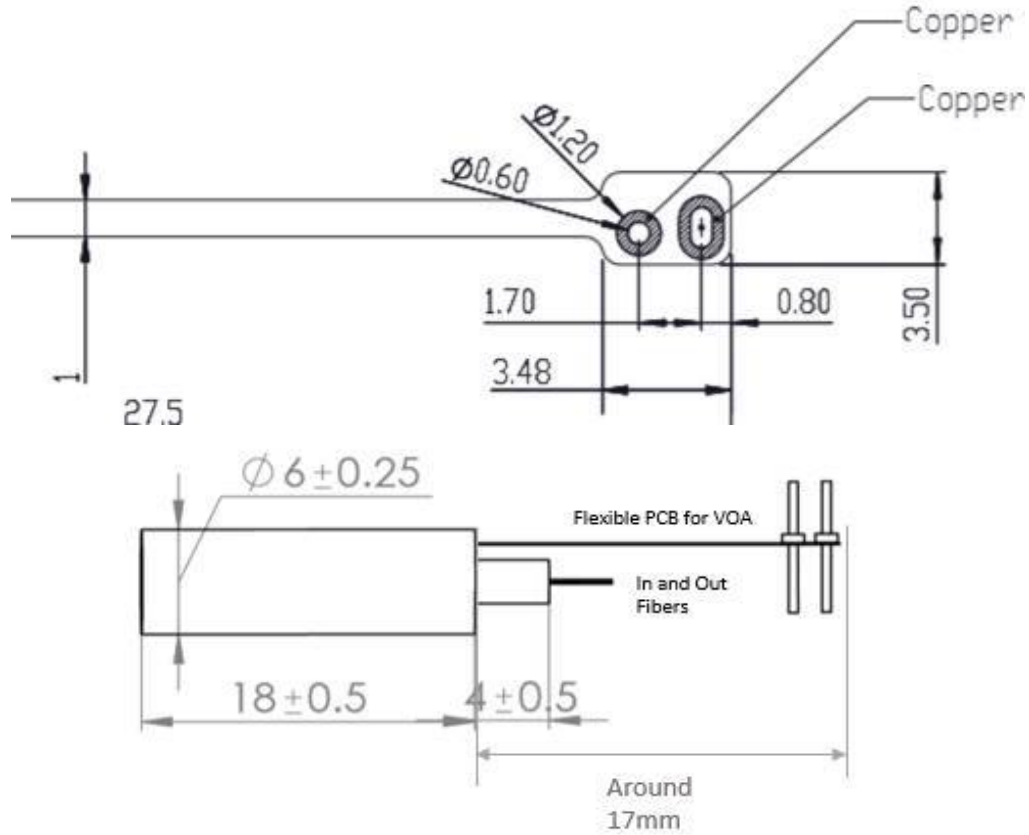
# etMEMS™ Single Mode Variable Optical Attenuator Integrated With Input Tap

## VOA Performance



# etMEMS™ Single Mode Variable Optical Attenuator Integrated With Input Tap

## Mechanical Footprint Dimensions (Unit:mm)



## Ordering Information

MEOA-	1	1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Type	Wavelength	Off State	Package	Fiber	Fiber Length	Connector		
		1260-1620=8 1310 = 3 1550 = 5 C+L=2 Special = 0	Transparent=1 Opaque=2	Regular =1 Special =0	SMF-28 =1 PM1550=5 Special =0	Bare fiber=1 900um tube =3 Special=0	0.25m= 1 0.5m = 2 1.0m= 3 Special =0	None = 1 FC/PC = 2 FC/APC = 3 SC/PC = 4 SC/APC = 5 ST/PC = 6 LC/PC = 7 Special = 0	