

etMEMS™

# Ultra Mini Variable Optical Attenuator

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

## Product Description

The etMEMS™ Series VOA is based on a proprietary micro-electro-mechanical mechanism featuring compact design, high reliability, and excellent optical performance. The VOA is compliant with the Telcordia 1209 and 1221 reliability standards.

The VOA is available in either normally-open or normally-closed configurations. The VOA is driven by applying an electrical voltage.



## Performance Specifications

MM Series VOA		Min	Typical	Max	Unit
Central Wavelength		1310±50 / 1480±50 / 1550±50			nm
Insertion Loss <sup>[1]</sup>			0.5	0.8	dB
Attenuation Range		25	30		dB
Polarization Dependent Loss	@10dB		0.15	0.3	dB
	@20dB		0.25	0.5	dB
Wavelength Dependent Loss	@10dB		0.2	0.4	dB
	@20dB		0.4	0.7	dB
Temperature Dependent Loss <sup>[2]</sup>	@10dB		0.4	0.7	dB
	@20dB		0.8	1.2	dB
Attenuation Resolution			Continuous		
Polarization Mode Dispersion			0.01	0.05	ps
Return Loss		45			dB
Repeatability				0.1	dB
Response Time			3	6	ms
Driving Voltage at 10 dB attenuation				3	V
Driving Voltage at 30 dB attenuation			5	5.2 <sup>[3]</sup>	V
Device Resistance			100		ohm
Power Consumption <sup>[4]</sup>			80	130	mW
Optical Power Handling			300	500	mW
Operating Temperature		-5		75	°C
Storage Temperature		-40		85	°C
Reliability		Telcordia 1209 and 1221			
Fiber Type		Corning SMF28 or equivalent			
Package Dimension		See drawing below			mm

Notes:

1. Excluding connectors
2. Reference to room temperature
3. Over this value will damage the device
4. For full dynamic range.

## Features

- Compact
- Low Cost
- High Reliability
- Low IL, PDL, WDL and TDL
- Low Power Consumption

## Applications

- Power Control
- Power Regulate
- Channel Balance
- Instrumentation



Revision: 10-02-16

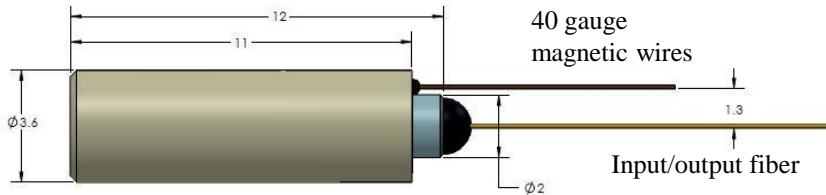
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## Mechanical Footprint Dimensions (mm)

Mini Package



## Electrical Driving Instruction

NOTES

- 40 gauge magnetic wire 1 and wire 2 are for control voltage without polarity.
- Do not apply voltage more than 5.2V.

## Ordering Information

TMOA-	<input type="checkbox"/>	<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	
	Drive Voltage 5V=11 3.5V=22 Special-00	1310=3 1550 = 5 S+C+L=2 1260~1620= 8 Special = 0	Transparent=1 Opaque = 2	L14.5mm=1 L12mm=2 Special=0	SMF-28 =1 Special = 0	Bare fiber=1 900um loose 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 LC/APC=8 Special = 0



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## Typical Performance Charts

