

MEMS Variable Optical Attenuator (current control)

patent pending

Product Description

The MM Series VOA is based on a micro-electro-mechanical mechanism featuring compact design, simple construction, easy direct drive, and excellent optical performance. The MM series VOA is compliant with the Telcordia 1209 and 1221 reliability standards.

The MM series VOA is available in either normally-open or normally-closed configurations and with an integrated tap option. The VOA is driven by directly applying an electrical current.



Performance Specifications

MM Series VOA	Min	Typical	Max	Unit
Wavelength		1260-1620		nm
Insertion Loss ¹		0.5	0.7	dB
Polarization Dependent Loss ²		0.15	0.4	dB
Wavelength Dependent Loss ^{2, 4}		0.3	0.6	dB
Temperature Dependent Loss ³		0.5	1	dB
Attenuation Range		25	60	dB
Attenuation Resolution		Continuous		
Polarization Mode Dispersion ²		0.01	0.050	ps
Return Loss	45			dB
Response Time		1	2	ms
Operating Temperature	-5		75	°C
Driving Current ²		28	35	mA
Device resistance		40	60	Ω
Optical Power Handling		300	500	mW
Storage Temperature	-40		85	°C
Reliability		Telcordia 1209 and 1221		
Fiber Type		Corning SMF28		
Package Dimension		18.0xØ6.0		mm

Notes:

1. Without connector and at room temperature
2. At 20dB or less attenuation
3. At 10 dB or less attenuation and at whole temperature range
4. Within 30nm bandwidth
5. At 20dB attenuation for transparent version, at 0.7dB for opaque version

Features

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

Applications

- Power Control
- Power Regulate
- Channel Balance
- Instrumentation

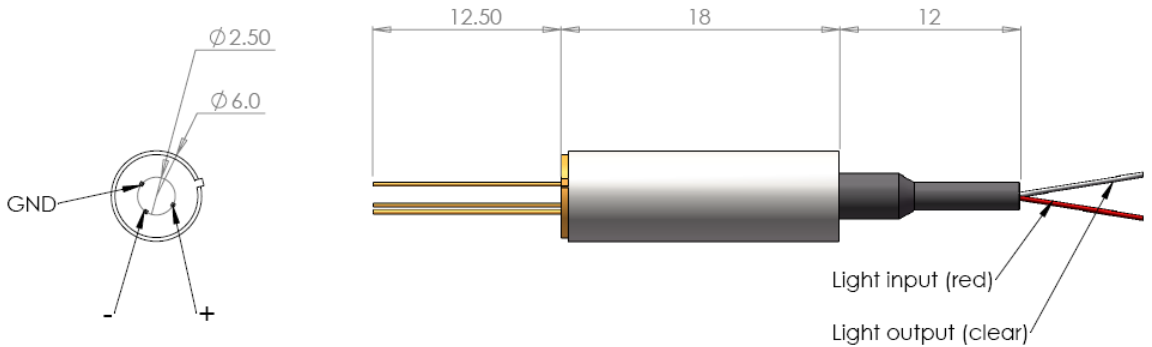


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Mechanical Footprint Dimensions (mm)



Ordering Information

MMOA-	<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	
	Current =22	1310=3 1550 = 5 C+L=2 1310&1550= 8 Special = 0	Transparent=1 Opaque = 2	Standard=5 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 = 7 Special = 0

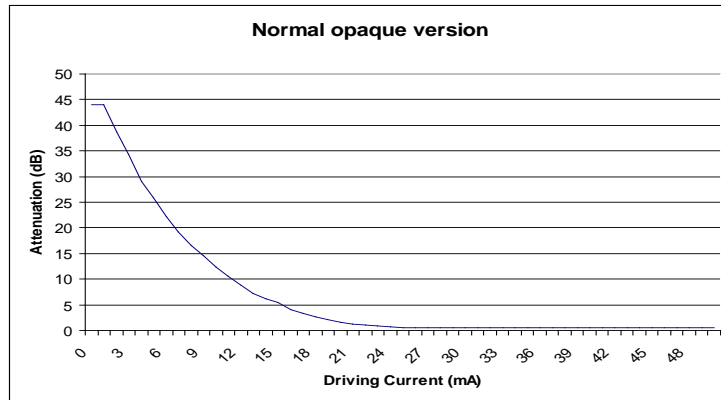
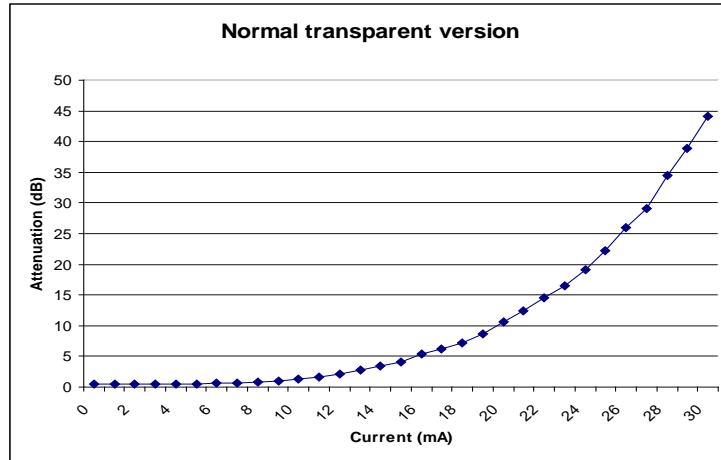


MEMS VOA Typical Performance Charts (1)

VOA Performance (tested with open-loop)

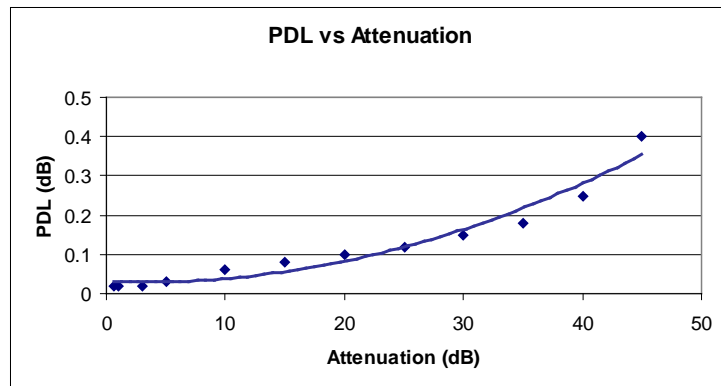
Features

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Applications

- Power Control
- Power Regulation
- Channel Balance
- Instrumentation

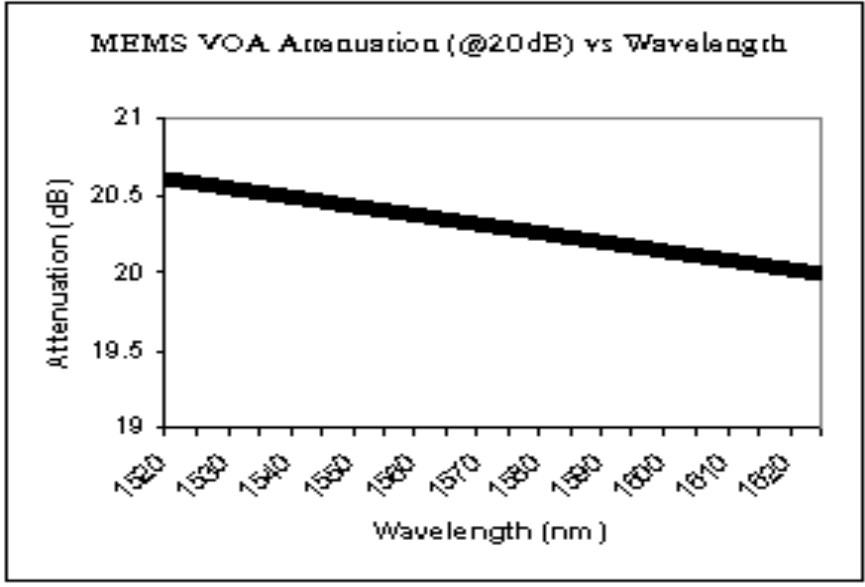


MEMS VOA Typical Performance Charts (2)

VOA Performance

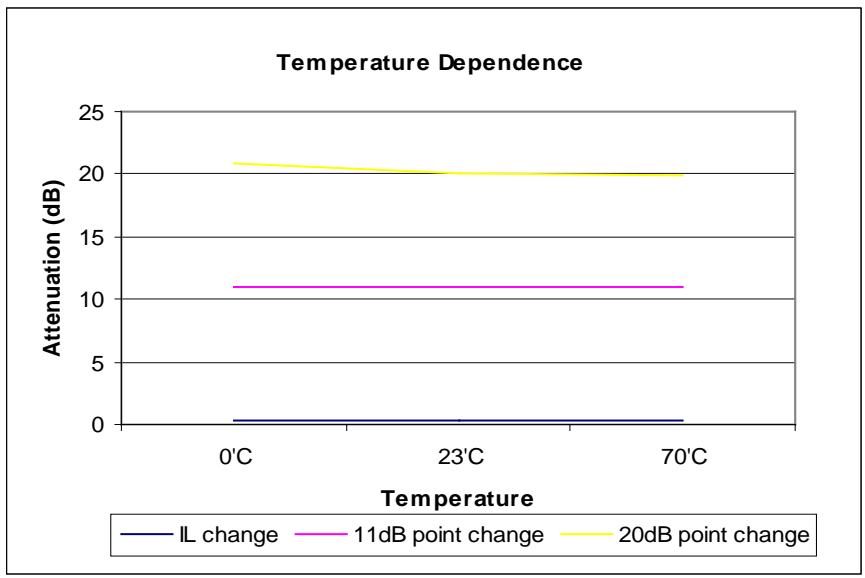
Features

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



Applications

- Power Control
- Power Regulation
- Channel Balance
- Instrumentation

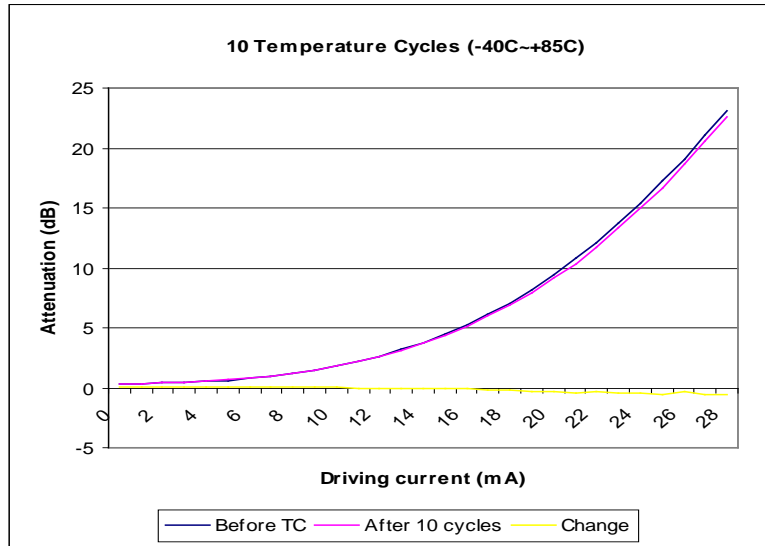


MEMS VOA Typical Performance Charts (3)

Features

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

VOA Performance



Applications

- Power Control
- Power Regulation
- Channel Balance
- Instrumentation

