



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.



Features

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

Performance Specifications

MM Series VOA	Min	Typical	Max	Unit
Central Wavelength	1310±50 / 1480±50 / 1550±50			nm
Insertion Loss ^[1]		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 ^[2]	@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 ^[3]	V
Device Resistance		100		ohm
Power Consumption ^[4]		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.

Applications

- Power Control
- Power Regulate
- Channel Balance
- Instrumentation

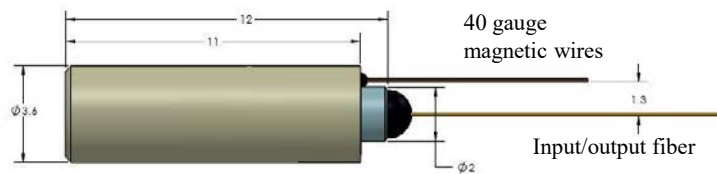


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Mechanical Footprint Dimensions (mm)

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

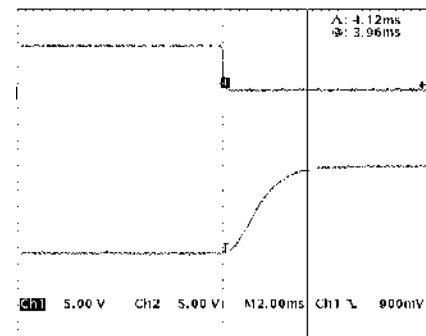
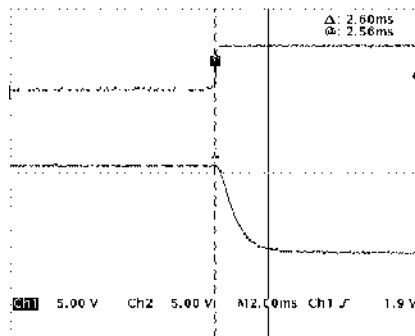
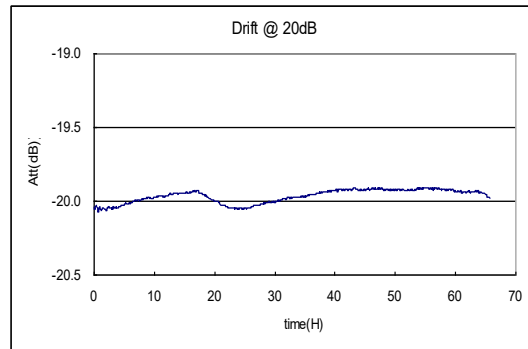
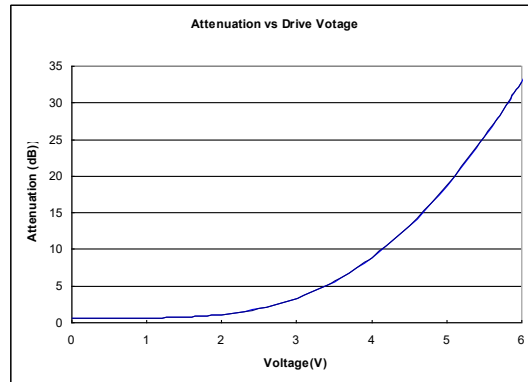
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	Type	Wavelength	Off State	Package	Fiber	Fiber Length	Connector		
	Drive Voltage 5V=11 3.5V=22 Special=00	1310=3 1550 = 5 S+C+L=2 1260-1620= 8 Special = 0	Transparent=1 Opaque = 2	L14.5mm=1 L12mm=2 Special=0	SMF-28 =1 Special = 0	Bare fiber=1 900um 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



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