

## etMEMS™

# Mini Variable Optical Attenuator

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

### Product Description

The **etMEMS™** Series VOA is based on a patented micro-electro-mechanical mechanism featuring compact design, high reliability, direct drive, and excellent optical performance. The MM series 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

Operating Temperature	-5	75	°C
Storage Temperature	-40	85	°C
Reliability	Telcordia 1209 and 1221		
Fiber Type	Corning SMF28 or equivalent		
Notes:			
1. Excluding connectors			
2. Reference to room temperature			
3. For full dynamic range. Other drive voltages available			
4. Over this value will damage the device			
<b>MM VOA Pigtail</b>	Min	Typical	Max
Wavelength	C-Band		nm
Insertion Loss <sup>1</sup>	0.2	0.4	dB
Attenuation Range	25		dB
Attenuation Resolution	Continuous		
Return Loss <sup>2</sup>	30		dB
Response Time	2	5	ms
Driving voltage <sup>2</sup>	4	5	V
Resistance <sup>3</sup>	85	100	ohm
Power consumption <sup>2</sup>	80	130	mW
Optical Power Handling	10	15	dBm
Operating Temperature	-5	75	°C
Storage Temperature	-40	85	°C
Fiber Type	0.9mm, UL94 V-0 Hytrel Yellow, SM28e, Tight Buffered fiber		
Fiber Length	1.1	1.3	1.5
Package Dimension	See drawing below		mm
Notes:			
1. Excluding connectors			
2. For full dynamic range.			
3. No voltage applied at room temperature			

### Features

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

### Applications

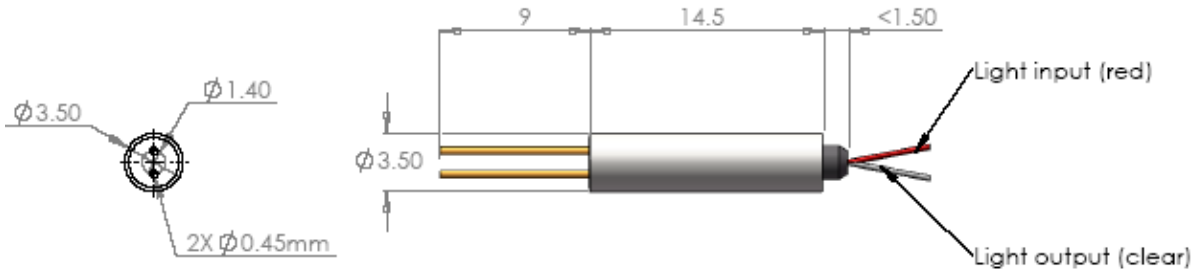
- Power Control
- Power Regulate
- Channel Balance
- Instrumentation



Revision: 04-22-15

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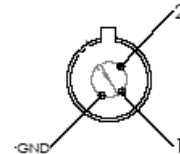
## Mechanical Footprint Dimensions (mm)



## Electrical Driving Instruction

### NOTES

- Pin1 and Pin2 are for control voltage without polarity.
- GND connect to the case. It can be cut.
- Do not apply more than 5.2V.



## Ordering Information

TMOA-	Type	Wavelength	Off State	Package	Fiber	Fiber Length	Connector
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	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	Φ6.0mm=1 Φ3.5mm=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 = 7 Special = 0

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## Typical Performance Charts

