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MEMS Reflective Fiber Optical Variable Attenuator

(Protected by US Patent 10752492B2)

Product Description

The MEMS Series Fiber Optical Variable Attenuator uses a patented thermal activated micro-mirror, moving-in and -out optical paths, uniquely featuring large extinction ratio, high stability over wide temperature range, and very long life cycle. The thermal MEMS is insensitive to moisture and ESD without drift issues, providing a high reliability platform for over 25 years continuous operation. The MEMS Straight Series VOAs are configured in single and dual channels (activated at the same time). The VOAs are bidirectional and are Telcordia standards GR1221 qualified.

Agiltron provides customized design and modular assemblies to meet control and integration applications.



Features

- High Reliability
- Direct DC drive
- Ultra Small
- ESD Insensitive

Performance Specifications

MEMS Straight Series VOA	Min	Typical	Max	Unit	
Operation Wavelength	Single Mode	1260~1610		nm	
	Multimode	810-890, 1260-1360, 1500-1600			
Insertion Loss ^{[1], [2]}		0.6	1.0 / 1.2 ^[3]	dB	
PDL (Single mode)			0.1	dB	
Extinction Ratio	PM fiber	18		dB	
	SM, PM	50		dB	
Return Loss	Multimode	35		dB	
	SM, PM	55 ^[4]		dB	
Attenuation	Multimode	45		dB	
			3	7	ms
Response Time				ms	
Repetition Rate			20	Hz	
Durability		10 ⁹		Cycle	
Power Consumption (at maximum)			170	mW	
Operating Temperature ^[5]		-5	70	°C	
Storage Temperature		-40	85	°C	
Optical Power Handling			300	500	mW
Package Dimension		10L x 6.6W x 4.6H		mm	
Fiber Type	Single Mode	SMF-28 or equivalent			
	PM	Panda 250 PM or equivalent			
	Multimode	MM 50/125, MM 62.5/125 or equivalent			

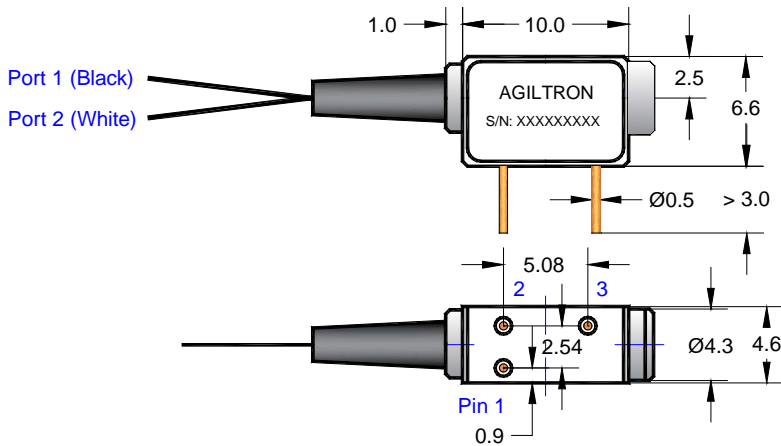
[1]. Excluding connectors.
 [2]. Multimode IL measured @ Light Source CPR < 14dB.
 [3]. Dual band.
 [4]. High attenuation > 70dB is available, please contact us.
 [5]. Lower temperature version is available, please call us.



Revised on 9/9/21
 (Click here for latest revision)

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Mechanical Dimension (unit: mm)

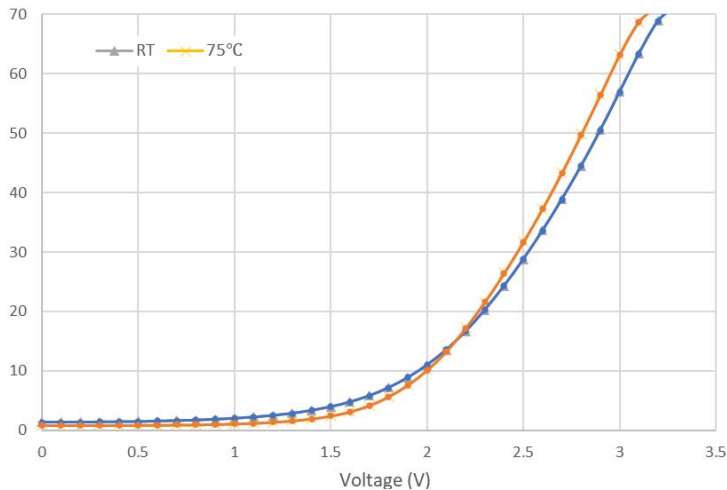


*Product dimensions may change without notice. This is sometimes required for non-standard specifications.

Electrical Driving Requirements

1. Resistance load device, insensitive to ESD.
2. Highly recommend to add 70ohm resistor in series on PIN 3 in driver to smooth the attenuation slope.
3. **Warning: Damaged if applying voltage over the maximum (even for a short time).**
4. Pin 1 = NC, Pin 2 = 0V, Pin 3 = 0~4.5V (maximum)

Typical Attenuation vs. Voltage w/ T compensation



Note: Measured by adding the resistor and temperature compensation on MSOA.

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Ordering Information

MSOA-	Non-Power State	Wavelength	Channel	Package	Fiber Type	Fiber Length	Connector	
<input type="checkbox"/> <input type="checkbox"/>	Transparent=01 Opaque =02	1260~1620=B 1060=1 1310=3 1550=5 850 =8 1310/1550=9 850/1310=A Special=0	Single =1	Standard Reflection =3 Reflection Temperature compensated =4 Special=0	SMF-28=1 Panda 250 PM 250=B MM 50/125=5 MM 62.5/125=6 Special=0	Bare fiber=1 900 μm 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 LC=7 Special=0