

Fiber-Fiber™ MEMS Broadband Optical Attenuator

(Patent pending)

Product Description

The **Fiber-Fiber™** series VOA is based on fiber to fiber direct coupling with a micro-electro-mechanical (MEMS) shutter in between. It eliminates the need for lens and optical coating, featuring low loss, ultra-broadband without altering fiber transmission character, high power, compact size, and easy drive. The current MEMS chips accommodate fiber with core diameter from 3 to 105 μm. VOAs with fiber of larger diameters can be made with special chip fabrication run with a NRE charge. The **Fiber-Fiber™** series VOA is compliant with the Telcordia 1209 and 1221 reliability standards. The VOA is driven by directly applying a low electrical voltage.

Features

- Low Insertion Loss
- High Reliability
- Broadband
- High Optical Power



Performance Specifications

Fiber-Fiber™ series VOA	Min	Typical	Max	Unit	
Wavelength	380 ^[1]		2000	nm	
Band Width	Broad band without coating				
Insertion Loss ^[2]		0.5	1.0	dB	
Attenuation Resolution	Continuous				
Attenuation Range	Core < 8 μm	35	40	60	dB
Return Loss		28	30	40	dB
Response Time		5	20	30	ms
Optical Power Handling ^[5]		50	200	500	mW
Polarization Extinction Ratio		18	20	30	ms
Driving Voltage (full range)		3.5		5	VDC
Power Consumption	0	80 ^[3]	220 ^[4]	mW	
Reliability	Telcordia 1209 and 1221				
Operating Temperature				-5 ~ 70	°C
Storage Temperature				-40 ~ 85	°C
Fiber Type	50/125, 62.5/125,				
Package Dimension	See drawing below				
	mm				

Notes:

[1] Transmission is the same as the fiber without wavelength alternation

[2] Measure with CPR<20 laser/LED source and excluding connectors

[3] about 15dB

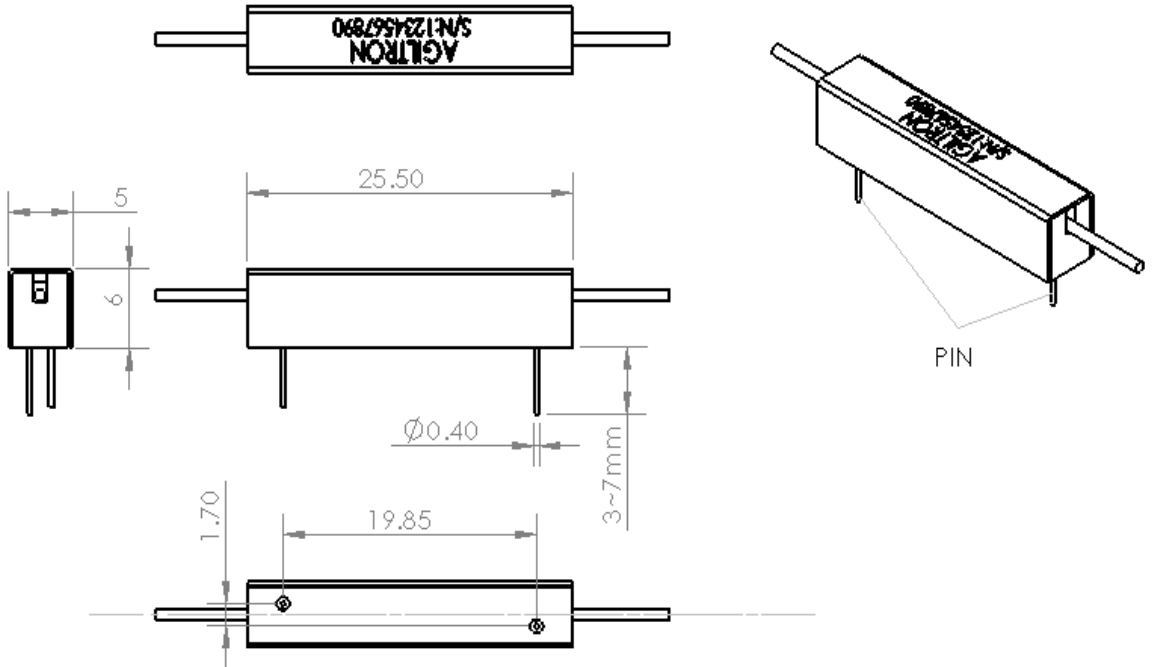
[4] at full attenuation

[5] The power handling is related to wavelength: 50mW for 380nm, 200mW for 980nm, 500mW for 1060nm

Applications

- Dynamic gain equalization
- Sensor
- Instrumentation

Mechanical Dimensions-Package



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

Electrical Driving Information

Pin No.	Definition	Voltage(V)	Pin No.	Definition	Voltage(V)
1	VOA	0 ~ 4.7	2	VOA	0

Ordering Information

FVOA-	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Configuration	Type	Test Wavelength	Fiber type	Fiber Length	Connector	
	Standard = 11 Special=00	Normally Open=1	488 = 4 532 = 5 630 = 6 780 = 7 850 = 8 980 = 9 1060 = 1 1310 = 3 1550 = C 2000 = 2 Special = 0	Select from the table below Special =00	Bare fiber=1 900um 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

01	SMF-28	34	PM1550	71	GIF 50/125um
02	SMF-28e	35	PM1950	72	GIF 62.5
03	Corning XB	36	PM1310	73	106/125um
04	SM450	37	PM405	74	FG105LCA
05	SM2000	38	PM480	75	FG50LGA
06	SM600	39	PM630	76	STP 50/125
07	Hi780	40	PM850		
08	SM800	41	PM980		
09	Hi980	42	PM780		
10	Hi1060	43	PM350		
11					
12					