

etMEMS™ 2x2 Multimode Fiberoptic Switch

(Protected by U.S. patent 8,203,775 and other patents pending)

Product Description

The etMEMS™ Series 2x2 Multimode Fiberoptic switch connects optical channels by redirecting incoming optical signals into selected output fibers. This is achieved using a proprietary etMEMS™ configuration and activated via an electrical control signal. It uniquely features rugged thermal activated micro-mirror movement instead of rotation, and latches to preserve the selected optical path after the drive signal and the power have been removed. This novel design significantly simplify the control electronics, offering unprecedented high stability and an unmatched low cost.

We also offer the built-in driver version, which features a convenient user interface.



Performance Specifications

MEMS™ 2x2 MM Switch	Min	Typical	Max	Unit
Operation Wavelength	Single Band: 820~880, 1260~1360, 1510~1610			nm
	Dual Band: 850/1310, 1310/1550			
	Broad Band: 1260~1620			
Insertion Loss ^[1] , ^[2]		0.6	1.0	dB
Wavelength Dependent Loss		0.2	0.3 ^[3]	dB
Return Loss ^[1]	35			dB
Cross Talk ^[1]	35			dB
Repeatability			±0.05	dB
Switching Speed		20		ms
Repetition Rate			20	Hz
Durability	10 ⁹			Cycle
Switching Type		Latching		
Operating Temperature	-5		70	°C
Storage Temperature	-40		85	°C
Optical Power Handling 4		300	500	mW
Fiber Type		MM 50/125		

[1]. Excluding connectors.

[2]. Measure at Light source CPR<14dB.

[3]. Dual band and Broad band.

Features

- High Reliability
- Latching
- Intrinsic tolerance to ESD

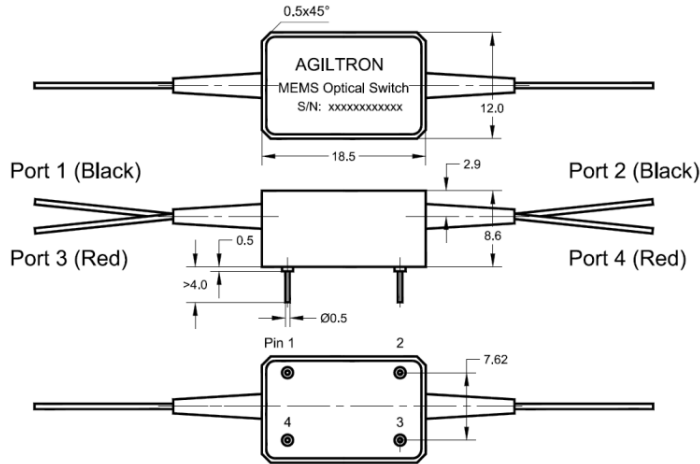
Applications

- Channel Routing
- Configurable Add/Drop
- System Monitoring
- Instrumentation



etMEMS™ 2x2 Multimode Fiberoptic Switch

Mechanical Dimensions with Built-in Driver (Unit: mm)



Electrical Driving Requirements with Built-in Driver

Pin No.	Symbol	Type	Description
1	12VDC	I	DC power supply, voltage range is 11.5V-12.5V.
2	TTL-A	I	TTL input port.
3	TTL-B	I	TTL input port.
4	GND		Ground.

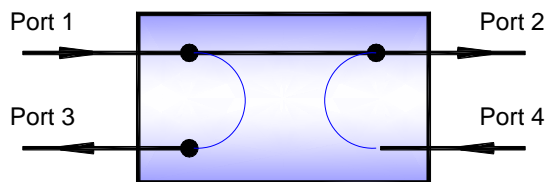
Control Input Pins ^[1]		Optical Path Directing
TTL-A	TTL-B	
H pulse ^[2]	L	Port 1→2, Port 4→3
L	H pulse ^[2]	Port 1→3, Port 4→2

[1]. H: high level (3.5V-5.5V), L: low level (0V-1.5V).

[2]. H pulse: (3.5V-5.5V) high level pulse, minimum width of 10 us is required. It should return to L to prevent repetitively switching actions.

[3]. Please call sale for user manual if the position sensing is needed.

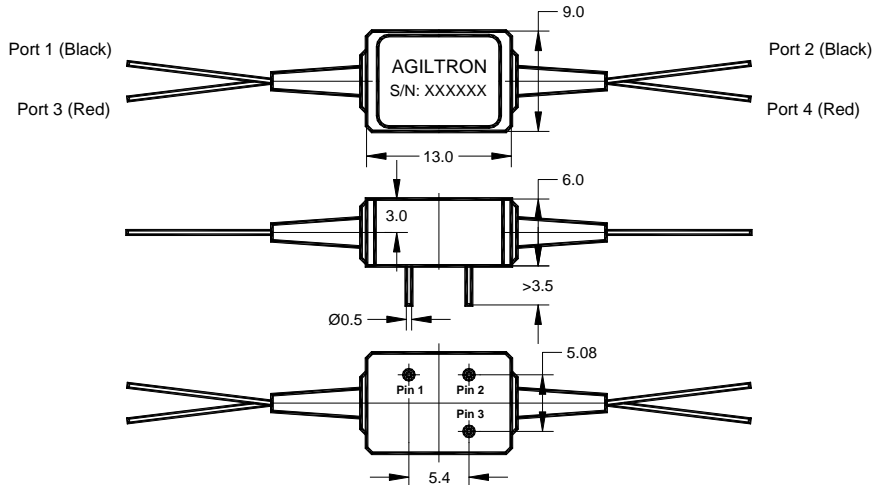
Function Diagram



MEMS 2x2 Switch

etMEMS™ 2x2 Multimode Fiberoptic Switch

Mechanical Dimensions w/o Built-in Driver (Unit: mm)



Electrical Driving Requirements w/o Built-in Driver

Optical Path	Pin 1	Pin 2	Pin 3	Pin 4
Port 1→2, Port 4→3	Driving pulse	NC	NC	GND
Port 1→3, Port 4→2	NC	Driving pulse		

Driving Pulse Definition	Min	Typical	Max	Unit
Driving Pulse Voltage	9	9.3	9.5 [1]	V
Driving Pulse Width	12	12.5	13 [1]	ms
Peak Current		290		mA

[1]. Attention! Outside this range could damage the device.

Ordering Information

MEMS-	2	2	<input type="checkbox"/>	1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Type	Wavelength	Switch	Package	Fiber Type	Fiber Length	Connector				
2x2=22	1060=1 C+L=2 1310=3 1550=5 780=7 850=8 1310/1550=9 850/1310=A 1260-1620=B Special=0	latching=1	With Build-in Driver=1 W/O Build-in Driver=2 Special=0	MM 50/125=5 OM4=7 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 Duplex LC=8 Special=0			

