*et*MEMS™ 1x2 Multimode Fiberoptic Switches

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

Features

- High Reliability
- Latching
- Intrinsic tolerance to ESD

Product Description

The *et*MEMS™ Series 1x2 Multimode Fiberoptic switch connects optical channels by redirecting incoming optical signals into selected output fibers. This is achieved using a proprietary *et*MEMS™ 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 a

We offer the straight and reflective versions for the flexibility to connect fibers. In addition, we also offer the built-in driver version, which features a convenient user interface.

Performance Specifications

*et*MEMS™ 1x2 MM Switch	Min	Typical	Max	Unit
Operation Wavelength	Single band 820~880, 1260~1360, 1510~1610 Dual band 850/1310, 1310/1550 Broad band 1260~1620			nm
Insertion Loss [1, 3]		0.6	1.0	dB
Wavelength Dependent Loss		0.2	0.3 [2]	dB
Return Loss [1]	35			dB
Cross Talk [1]	35			dB
Switching Speed		20		ms
Repeatability			±0.05	dB
Repetition Rate			20	Hz
Durability	10^9			Cycle
Switching Type		Latching		
Operating Temperature	-5		70	°C
Storage Temperature	-40		85	°C
Optical Power Handling		300	500	mW
Fiber Type		MM 50/125, OM4		

[1]. Excluding connectors.

[2]. Dual band and Broad band.

[3]. Measure at light source CPR <14dB.
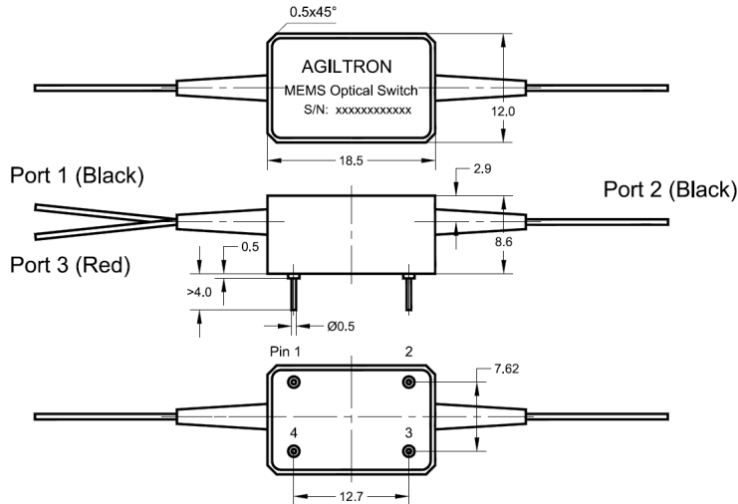
Applications

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

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etMEMS™ 1x2 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
L	H pulse [2]	Port 1→3

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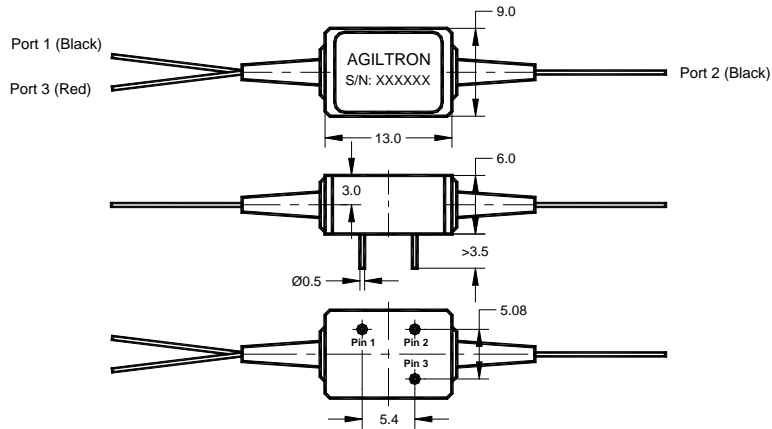[3]. Please call sale for user manual if the position sensing is needed.

Functional Diagram
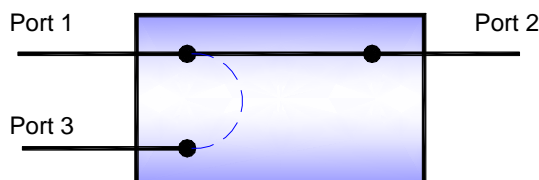
MEMS Mini 1x2 Switch

RoHS Compliant

etMEMS™ 1x2 Multimode Fiberoptic Switch

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

Electrical Driving Requirements w/o built-in driver

Optical Path	Pin 1	Pin 2	Pin 3
Port 1→2	Driving Pulse	GND	NC
Port 1→3	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-	☐☐	☐	1	☐	☐	☐	☐	☐
	Type	Wavelength	Switch	Package	Fiber Type		Fiber Length	Connector
	1x1=11 1x2=12 2x1=21 Special=00	1060=1 C+L=2 1310=3 1410=4 1550=5 780=7 850=8 1310 & 1550=9 850/1310=A 1260~1620=B Special=0	Latching =1	With Built-in driver=1 W/O Built-in driver=3 Special = 0	MM50/125=5 OM4=7 Special=0	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 Duplex LC=8 Special=0

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