# *et*MEMS™ 1x2 Fiberoptic Switch

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

## Product Description

The *et*MEMS™ Series 1x2 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 an unmatched low cost.

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.

## Features

- High Reliability
- Latching
- Intrinsic tolerance to ESD

## Applications

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

## Performance Specifications

| *et*MEMS™ 1x2 Switch | Min | Typical | Max | Unit |
|---|---|---|---|---|
| Operation Wavelength | Single Band | 1260~1360 or 1510~1610 | | nm |
| | Dual Band | 1260~1360 and 1510~1610 | | |
| | Broad Band | 1260~1620 | | |
| Insertion Loss [1] | | 0.6 | 1.0 | dB |
| Wavelength Dependent Loss | | 0.2 | 0.3 [2] | dB |
| Polarization Dependent Loss | | | 0.1 | dB |
| Return Loss [1] | 50 | | | dB |
| Cross Talk [1] | 50 | | | dB |
| Switching Time | | 5 | | 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 | | SMF-28 [3] | | |

[1]. Excluding connectors.

[2]. Dual band and Broad band.

[3]. Please contact us for other SM fiber version.

RoHS Compliant

Revision: 03-10-15

15 Presidential Way, Woburn, MA 01801 Tel: (781) 935-1200 Fax: (781) 935-2040
www.agiltron.com

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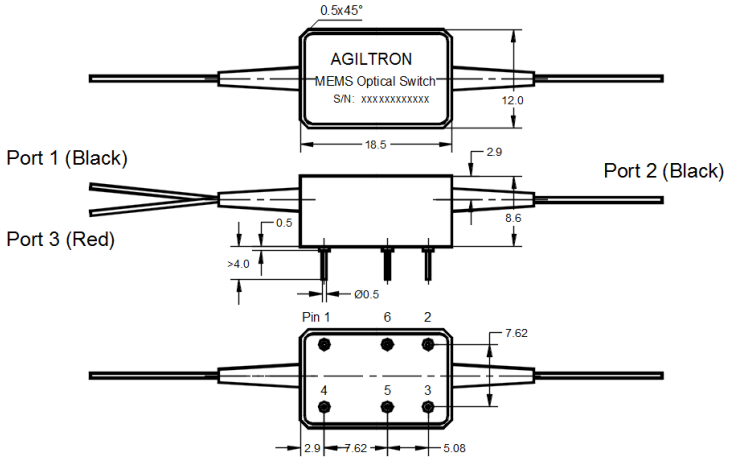
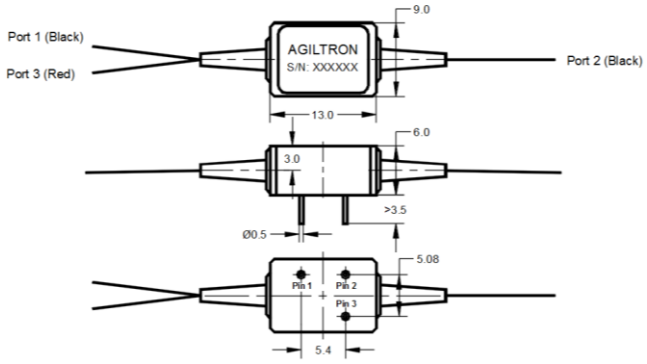
## Mechanical Dimensions (Unit: mm)

### Straight version with Built-in Driver




### Straight version without Built-in Driver




## Electrical Driving Requirements

| 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 [2] | ms |
| Peak Current | | 290 | | mA |

[1]. Attention! Outside this range could damage the device.
[2]. Please contact us for the built-in driver version.

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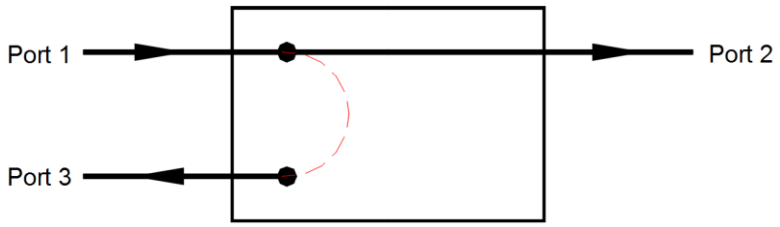
## Functional Diagram




MEMS 1x2 Switch

## Ordering Information

| MEMS- | ☐☐ | ☐ | 1 | ☐ | ☐ | ☐ | ☐ | ☐ |
|---|---|---|---|---|---|---|---|---|
| | Type | Wavelength | Switch | Package | Fiber Type | | Fiber Length | Connector |
| | 1x1=11<br>1x2=12<br>2x1=21<br>Special=00 | C+L=2<br>1310=3<br>1410=4<br>1550=5<br>1310 & 1550=9<br>1260~1620=B<br>Special=0 | Latching=1<br>Special=0 | Straight & Built-in Driver=1<br>Straight=3<br>Special=0 | SMF-28=1<br>Special=0 | Bare fiber=1<br>900um tube=3<br>Special=0 | 0.25m=1<br>0.5m=2<br>1.0m=3<br>Special=0 | None=1<br>FC/PC=2<br>FC/APC=3<br>SC/PC=4<br>SC/APC=5<br>ST/PC=6<br>LC=7<br>Duplex LC=8<br>Special=0 |

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