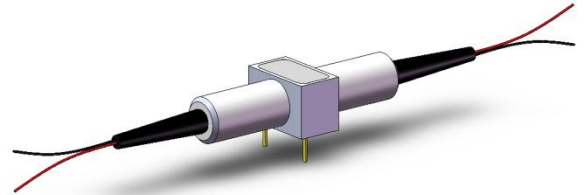


# etMEMS™ Mini 1x2, 1x2, 2x2 Fiberoptic Switch

(Protected by U.S. pending patents)

## Product Description

The etMEMS™ Series Mini 1x1, 1x2, 2x2 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, moving in and out optical paths instead of rotating mirror. This novel design significantly simplify the control electronics, offering unprecedented high stability, ultra compact dimension and an unmatched low cost .



## Performance Specifications

| etMEMS™ 1x1, 1x2, 2x2 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 <sup>[1]</sup> |                                    | 0.6                   | 1.0                     | dB    |
| Wavelength Dependent Loss     |                                    | 0.2                   | 0.3 (DW) <sup>[2]</sup> | dB    |
| Polarization Dependent Loss   |                                    |                       | 0.1                     | dB    |
| Return Loss <sup>[1]</sup>    | 50                                 |                       |                         | dB    |
| Cross Talk <sup>[1]</sup>     | 50                                 |                       |                         | dB    |
| Switching Time                |                                    | 10                    |                         | ms    |
| Repeatability                 |                                    |                       | ±0.05                   | dB    |
| Repetition Rate               |                                    |                       | 20                      | Hz    |
| Durability                    | 10 <sup>9</sup>                    |                       |                         | Cycle |
| Switching Type                |                                    | Non-Latching          |                         |       |
| Operating Temperature         | -5                                 |                       | 70                      | °C    |
| Storage Temperature           | -40                                |                       | 85                      | °C    |
| Optical Power Handling        |                                    | 300                   | 500                     | mW    |
| Fiber Type                    |                                    | SMF-28 <sup>[3]</sup> |                         |       |

[1]. Exclude connectors.

[2]. DW: Dual band and Broad band.

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

## Features

- High Reliability
- Intrinsic tolerance to ESD

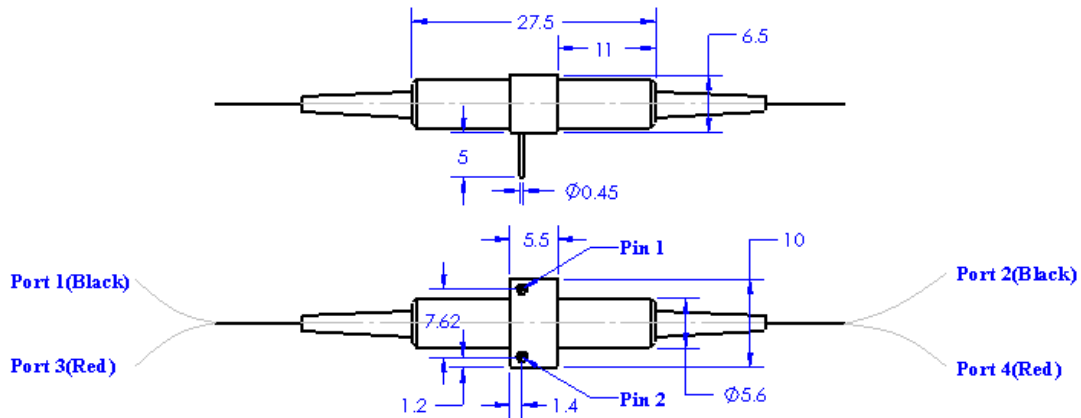
## Applications

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



# etMEMS™ Mini 1x1, 1x2, 2x2 Fiberoptic Switch

## Mechanical Dimensions (Unit: mm)

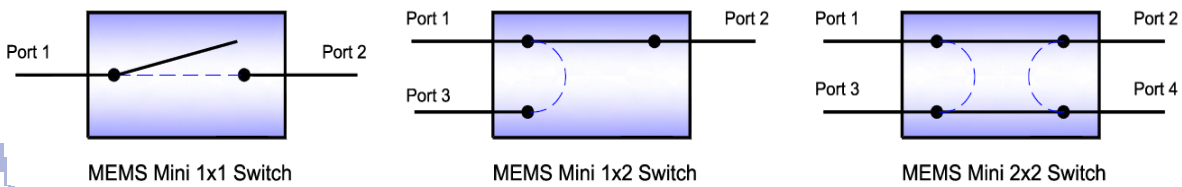


## Electrical Driving Requirements

| Optical Path |          |                    | Pin 1 | Pin 2 |
|--------------|----------|--------------------|-------|-------|
| 1x1          | 1x2      | 2x2                |       |       |
| Block        | Port 1↔3 | Port 1↔3, Port 4↔2 | L     | GND   |
| Port 1↔2     | Port 1↔2 | Port 1↔2, Port 4↔3 | H     |       |

| Driving Voltage   | Min | Typical | Max | Unit |
|-------------------|-----|---------|-----|------|
| H                 | 4.0 | 4.5     | 5.0 | V    |
| L                 |     |         | 0.8 | V    |
| Power Consumption |     | 170     |     | mW   |

## Functional Diagram



# etMEMS™ Mini 1x1, 1x2, 2x2 Fiberoptic Switch

## Ordering Information

| MEMS-   | Type                                     | Wavelength   | Switch           | Package  | Fiber Type            | Fiber Length                              | Connector                                |   |
|---|--|--|------------------|----------|-----------------------|---|--|---|
| <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 2 9 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | 1x1=11<br>1x2=12<br>2x2=22<br>Special=00 | 1060=1<br>C+L=2<br>1310=3<br>1410=4<br>1550=5<br>1310 & 1550=9<br>1260-1620=B<br>Special=0 | Non-latching = 2 | Mini = 9 | 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 |

## Recommend MEMS Non-Latching Switch Driver

