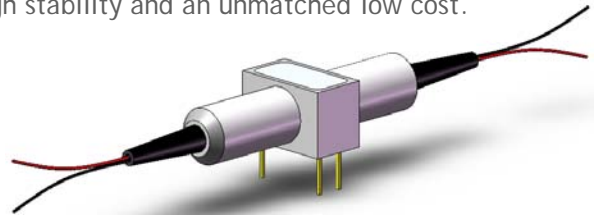# *et*MEMS™ Mini 1x1, 1x2, 2x2 Multimode Fiberoptic Switch

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

Product Description

The *et*MEMS™ mini 1x1, 1x2, 2x2 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.

Features

- High Reliability
- Latching
- Intrinsic tolerance to ESD

Applications

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

RoHS Compliant

Performance Specifications

*et*MEMS™ 1x1, 1x2, 2x2 Switch	Min	Typical	Max	Unit
Operation Wavelength		Single band 820~880, 1260~1360 Dual band 820~880 and 1260~1360		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 Time		5		ms
Repeatability			±0.05	dB
Repetition Rate			20	Hz
Durability	10^9			Cycle
Switching Type		Latching		
Operating Temperature	-5		70	^{o}C
Storage Temperature	-40		85	^{o}C
Optical Power Handling		300	500	mW
Fiber Type		MM 50/125, MM 62.5/125, OM4		

[1]. Exclude connectors

[2]. Dual band

[3]. Measure at CPR≤15dB

Mechanical Dimensions (Unit: mm)

Port 1(Black)
Port 3(Red)
Pin 1
Pin 2
Pin 3
Port 2(Black)
Port 4(Red)
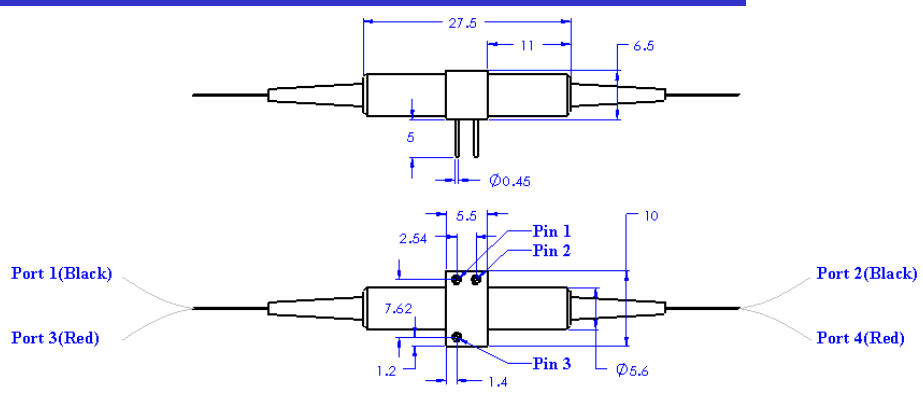
Electrical Driving Requirements

Optical Path			Pin 1	Pin 2	Pin 3
1x1	1x2	2x2			
Port 1↔2	Port 1↔2	Port 1↔2, Port 4↔3	Driving pulse	NC	GND
Block	Port 1↔3	Port 1↔3, Port 4↔2	NC	Driving pulse	

Driving Pulse	Min	Typical	Max	Unit
Pulse Voltage	9	9.3	9.5 [4]	V
Pulse Width	12	12.5	13 [4]	ms
Peak Current		290		mA

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

Functional Diagram

MEMS Mini 1x1 MM Switch

MEMS Mini 1x2 MM Switch

MEMS Mini 2x2 MM Switch
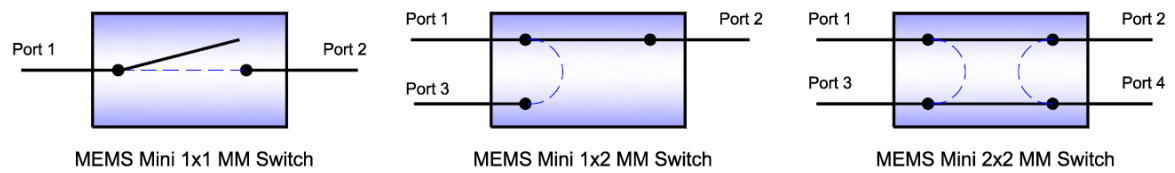
Ordering Information

MEMS-			1	9				
	Type	Wavelength	Switch	Package	Fiber Type		Fiber Length	Connector
	1x1=11 1x1=12 2x2=22 Special=00	1060=1 C+L=2 1310=3 1410=4 1550=5 780=7 850=8 850 &1310=A Special=0	Latching=1	Mini=9	MM50/125=5 MM62.5/125=6 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

Revision: 03-10-15