Fiber Optics

AGILTRON INC

LASER COMPONENTS

MEMS™ 1x2 Fiberoptic Switch

(Protected by U.S. patent 13/210,703 and pending patents)

Product Description

The MEMS Series 1x2 Fiberoptic switch connects optical channels by redirecting incoming optical signals into selected output fibers. This is achieved using a patent pending MEMS configuration and activated via an electrical control signal. Latching operation preserves the selected optical path after the drive signal has been removed. The switch has integrated electrical position sensors. This novel design significantly reduces moving part position sensitivity, offering unprecedented high stability as well as an unmatched low cost. Electronic driver is designed in the switch.

We offer tight-bend-fiber version, which reduces the minimum bending radius from normal 15 mm to 7 mm. This feature enables smaller overall foot print.

Features

- Low Optical Distortions
- High Reliability
- Fail-Safe Latching
- Epoxy-Free Optical Path

Applications

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

Performance Specifications

MEMS Series 1x2 Switch	Min	Typical	Max	Unit
Operation Wavelength	Single Band 1260~1360 or 1510~1610 Dual Band 1260~1360 and 1510~1610 Broad Band 1260~1620			nm
Insertion Loss [1,2]		0.6	1.0	dB
Wavelength Dependent Loss		0.2	0.3 (DW) [3]	dB
Polarization Dependent Loss			0.1	dB
Return Loss [1,2]	50			dB
Cross Talk [1,2]	50			dB
Switching Time		1		ms
Repeatability			±0.05	
Durability	10^9			Cycle
Operating Voltage	4.5	5	5.5	VDC
Switching Type		Latching		
Operating Temperature	-5		70	°C
Storage Temperature	-40		85	°C
Optical Power Handling		300	500*	mW
Fiber Type		SMF-28		
Package Dimension		18.5L x 12.0W x 9.0H		mm

1. Within operating temperature and SOP.
2. Excluding connectors.
3. DW: Dual band and Broad band.

RoHS Compliant

Revision: 060-12
01-16-12

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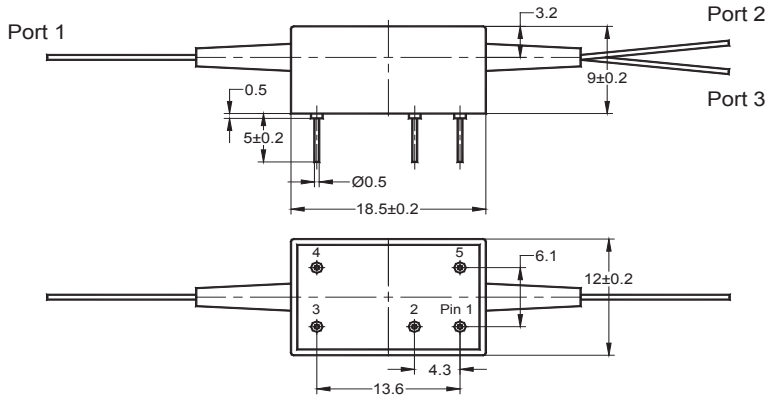
Mechanical Dimensions (Unit: mm)



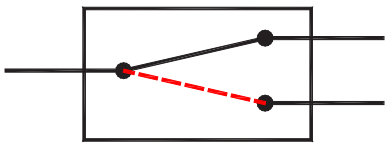
Electrical Driving Requirements

Agiltron offers a computer control kit with TTL and RS232 interfaces and Windows™ GUI.

Optical Path	Pin 1	Pin 3	Pin 4	Pin 2	Pin 5
1→2	H *	GND	5 VDC	NC	NC
1→3	L *	GND	5 VDC	NC	NC

*: H is 2.5~5VDC. L is less than 0.8VDC.

Functional Diagram



MEMS 1x2 Switch

Ordering Information

MEMS-	☐☐	☐	☐	☐	☐	☐	☐	☐
	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=5 650=6 780=7 850=8 1310 & 1550=9 Special=0	Latching Type=1 Special=0	Standard=1 Special=0	SMF-28=1 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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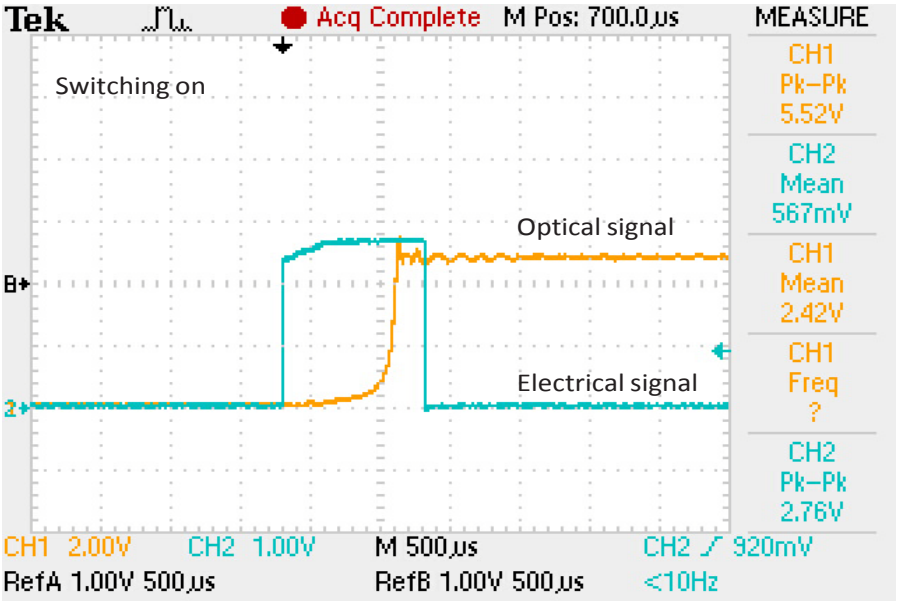
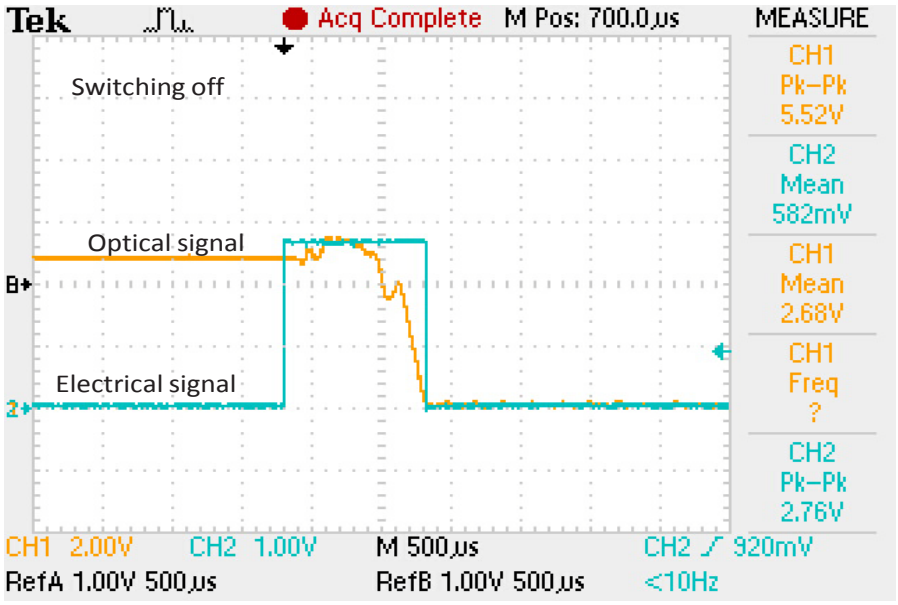
MEMS switching response





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