

MEMS™ Mini 1x4 Non-Latching Series Fiber Optic Switch

(Bidirectional, SM, PM)

(Protected by U.S. pending patents)

Product Description

The MEMS™ Mini 1x4 Non-Latching Series Fiber Optic 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. It uniquely features rugged thermal activated micro-mirror movement instead of rotation.

This novel design significantly reduces packaging requirement and simplifies driving electronics, offering unprecedented high stability as well as an unmatched low cost.

Features

- High reliability
- Intrinsic tolerance to ESD

Performance Specifications

MEMS™ Mini 1x4 Switch	Min	Typical	Max	Unit
Operation Wavelength	Single Band	1310±40 or 1550±40		nm
	Dual Band	1310±40 and 1510±40		
	Broad Band	1260~1620		
Insertion Loss ^[1]		0.6	1.0 (1.2 ^[2])	dB
Wavelength Dependent Loss		0.15	0.3 ^[2]	dB
PDL (Single mode Switch)			0.1	dB
Extinction Ratio (PM Switch)	18			dB
Cross Talk ^[1]	50			dB
Return Loss ^[1]	50			dB
Switching Time		20		ms
Repeatability			±0.05	dB
Repetition Rate		10		Hz
Durability	10 ⁹			Cycle
Switching Type		Non-Latching		
Operating Temperature	-5		70	°C
Storage Temperature	-40		85	°C
Optical Power Handling		300		mW
Fiber Type	Single mode Switch	SMF-28 or equivalent		
	PM Switch	Panda 250, Panda 400 fiber or equivalent		

[1]. Exclude connectors.

[2]. Dual and Broad band.

Applications

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

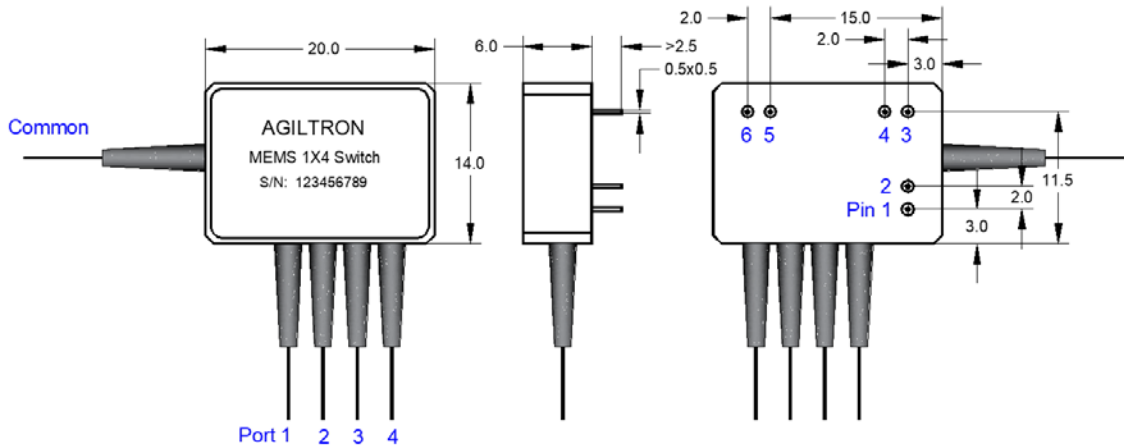


Revision: 11-12-20

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Mechanical Dimensions (Unit: mm)



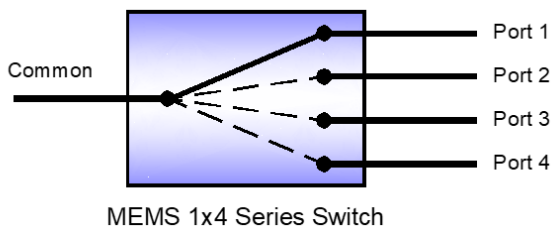
Electronic Control Requirements

Optical Path	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6
Common ↔ Port 1	H	GND	L	GND	L	GND
Common ↔ Port 2	L		H		L	
Common ↔ Port 3	L		L		H	
Common ↔ Port 4	L		L		L	

[1] NC: No electronic connection.

Driving Voltage		Min	Typical	Max	Unit
H	H1 version	3.5	3.6	4	VDC
	H2 version	4	4.5	5	VDC
L				0.8	VDC
Power Consumption (For each MEMS Chip)			170		mW

Functional Diagram



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Ordering Information

Type	Wavelength	Switch	Version	Fiber Type	Fiber Length	Connector
MESM ^[1] MEMP ^[2]	1x3=13 1x4=14 Special=00 1060=1 C+L=2 1310=3 1550=5 780=7 850=8 1310/1550=9 1260-1620=B Special=0	Non-Latching=2	H1=1 H2=2 Special=0	SMF-28=1 Panda 400=A Panda 250=B Special=0	Bare fiber=1 900 um tube=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

- [1]. **MESM:** MEMS 1x4 Single mode Mini Switch.
 [2]. **MEPM:** MEMS 1x4 Mini PM Switch.

Recommendation Control Circuit

