

# *et*MEMS<sup>™</sup> 1x16 Non-Latching Fiberoptic Switch

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

#### **Product Description**

The *et*MEMS<sup>TM</sup> Series 1x16 Non-Latching 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. It uniquely features rugged thermal activated micro-mirror movement instead of rotation, and latched to preserve the selectd optical path after the drive signal has been removed.

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

etMEMS <sup>™</sup> 1x16 Switch	Min	Typical	Max	Unit
	Singe Band	1260~1360 or 15	10~1610	
Operation Wavelength	Dual Band	1260~1360 and 7	1510~1610	nm
	Broad Band	1260~1620		-
Insertion Loss [1] [2]		1.0	2.0	dB
Wavelength Dependent Loss		0.2	0.3	dB
Polarization Dependent Loss			0.15	dB
Return Loss <sup>[1] [2]</sup>	50			dB
Cross Talk <sup>[1] [2]</sup>	50			dB
Repeatability			±0.05	dB
Switching Time			20	ms
Durability	10 <sup>9</sup>			Cycle
Switching Type		Non-Latching Typ	be	
Operating Temperature	-5		70	°C
Storage Temperature	-40		85	°C
Optical Power Handling [3]		300	500	mW
Fiber Type		SMF-28		

#### **Performance Specifications**

[1]. Within operating temperature and SOP.

[2].Excluding connectors.

[3]. Continuous operation, for pulse operation call.

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#### Applications

Channel Blocking

- Configurable Add/Drop
- System Monitoring
- Instrumentation

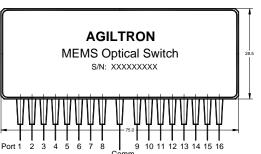


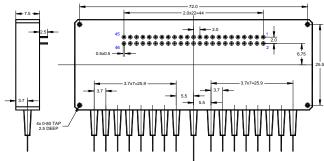
Revision: 1-16-17



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## Mechanical Dimensions (mm)





## **Electrical Driving Requirements**

Optical																		C	ontro	l Sigr	nal A	ppli	ed o	n Pin	n #															
Path	1	2	3	4	5	6	7	8	9 10	11	12	13	14	15 16	17	18	19	20	21	22	23	24	25	26	27 2	8 29	3	31	32	33 34	35	36	37	38	39 40	41	42	43	44	45 4
C↔P1	NC	NC			NC	NC	NC	NC		NC	NC	NC	NC	•	NC	NC	NC	NC			NC	NC	NC	NC		N	C N	C NC	NC		NC	NC	NC	NC		NC	NC	: NC	NC	
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C↔P6	NC	NC			NC	NC	NC	NC		NC	NC	н	NC		NC	NC	NC	NC			NC	NC	NC	NC		N	C N	с пс	NC	1	NC	NC	NC	NC		NC	NC	NC	NC	
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C↔P8	NC	NC			NC	NC	NC	NC		NC	NC	NC	NC		NC	NC	н				NC	NC	NC	NC		N	C N	C NC	NC	1	NC	NC	NC	NC	1	NC	NC	NC	NC	
C↔P9	NC	NC	GI	ND	NC	NC	NC	NC	GND	NC	NC	NC	NC	GND	NC	NC	NC	NC	GN	D	н	NC	н	NC	GND	N	C N	с пс	NC	GND	NC	NC	NC	NC	GND	NC	NC	NC	NC	GN
C↔P10	NC	NC			NC	NC	NC	NC		NC	NC	NC	NC		NC	NC	NC	NC			NC	NC	н	NC		н	N	с пс	NC	1	NC	NC	NC	NC	1	NC	NC	NC	NC	1
C↔P11	NC	NC			NC	NC	NC	NC		NC	NC	NC	NC		NC	NC	NC	NC		Ì	NC	NC	н	NC		N	C N	с н	NC	1	NC	NC	NC	NC		NC	NC	NC	NC	
C↔P12	NC	NC			NC	NC	NC	NC		NC	NC	NC	NC		NC	NC	NC	NC		Ī	NC	NC	н	NC		N	C N	с пс	NC	1	н	NC	NC	NC		NC	NC	NC	NC	
C↔P13	NC	NC			NC	NC	NC	NC		NC	NC	NC	NC		NC	NC	NC	NC			NC	NC	н	NC		N	c N	C NC	NC	1	NC	NC	н	NC	1	NC	NC	NC	NC	1
C↔P14	NC	NC			NC	NC	NC	NC		NC	NC	NC	NC		NC	NC	NC	NC		Ī	NC	NC	н	NC		N	C N	с пс	NC	1	NC	NC	NC	NC		н	NC	NC	NC	
C↔P15	NC	NC			NC	NC	NC	NC		NC	NC	NC	NC		NC	NC	NC	NC	1	Ì	NC	NC	н	NC		N	C N	C NC	NC	1	NC	NC	NC	NC		NC	NC	н	NC	
C↔P16	NC	NC			NC	NC	NC	NC		NC	NC	NC	NC		NC	NC	NC	NC	1	ľ	NC	NC	н	NC		N	C N	C NC	NC	1	NC	NC	NC	NC	1	NC	NC	NC	NC	1

Note : [1].C: Common port. [2].NC: No electrical connection.

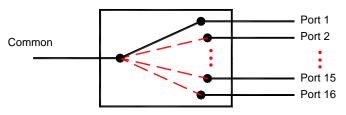
Driving Voltage	Min	Typical	Max	Unit
н	4	4.5	5	V
Power Consumption (for each Chip)		170		mW

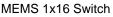




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Functional Diagram





### **Ordering Information**

MEMS-		2					
Туре	Wavelength	Switch	Package	Fiber Typ	e	Fiber Length	Connector
1x16=116 Special=000	C+L=2 1310=3 1550=5 1310 & 1550=9 1260-1620=B Special=0	Non-Latching=2			Bare fiber=1 900um tube=3 Special=0	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

