

etMEMS 1x12 Fiberoptic Switch

(Protected by U.S. pending patents)

Product Description

The etMEMS Series 1x12 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, eliminating the temperature compensation.

This novel design is intrinsically resistant to ESD, and significantly reduces packaging requirement, offering unprecedented high stability and long life cycle as well as an unmatched low cost.

Performance Specifications

MEMS 1x12 Switch	Min	Typical	Max	Unit
Operation Wavelength	Singe Band	1260-1360 or 1510-1610		nm
	Dual Band	1260-1360 and 1510-1610		
	Broad Band	1260-1620		
Insertion Loss ^[1] ^[2]		0.8	1.6	dB
Wavelength Dependent Loss		0.2	0.3	dB
Polarization Dependent Loss			0.2	dB
Return Loss ^[1] ^[2]	50			dB
Cross Talk ^[1] ^[2]	50			dB
Repeatability			±0.05	dB
Switching Time		10		ms
Durability	10 ⁹			Cycle
Switching Type		Non-Latching Type		
Operating Temperature	-5		70	°C
Storage Temperature	-40		85	°C
Optical Power Handling ^[3]		300	500	mW
Fiber Type		SMF-28		

[1]. Within operating temperature and SOP.

[2]. Excluding connectors.

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

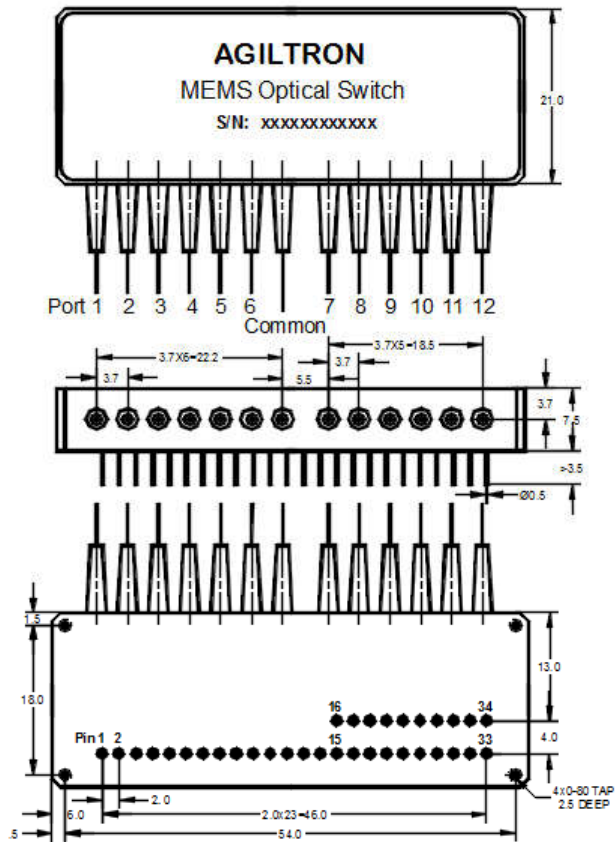
Applications

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



etMEMS 1x12 Fiberoptic Switch

Mechanical Dimensions (Unit: mm)



Electrical Driving Requirements

Optical Path	Control Signal Applied on # Pin																																	
	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	28	29	30	31	32	33	34
Comm→P1	NC	NC			NC	NC	NC	NC			NC	NC	NC	NC			NC	NC	NC	NC			NC	NC			NC	NC	NC	NC			NC	NC
Comm→P2	H	NC			NC	NC	NC	NC			NC	NC	NC	NC			NC	NC	NC	NC			NC	NC			NC	NC	NC	NC			NC	NC
Comm→P3	NC	NC			H	NC	NC	NC			NC	NC	NC	NC			NC	NC	NC	NC			NC	NC			NC	NC	NC	NC			NC	NC
Comm→P4	NC	NC			NC	NC	H	NC			NC	NC	NC	NC			NC	NC	NC	NC			NC	NC			NC	NC	NC	NC			NC	NC
Comm→P5	NC	NC			NC	NC	NC	NC			H	NC	NC	NC			NC	NC	NC	NC			NC	NC			NC	NC	NC	NC			NC	NC
Comm→P6	NC	NC		GND	NC	NC	NC	NC		GND	NC	NC	H	NC		GND	NC	NC	NC	NC			NC	NC		GND	NC	NC	NC	NC			NC	NC
Comm→P7	NC	NC			NC	NC	NC	NC			NC	NC	NC	NC			H	NC	H	NC			NC	NC			NC	NC	NC	NC			NC	NC
Comm→P8	NC	NC			NC	NC	NC	NC			NC	NC	NC	NC			H	NC	NC	NC			H	NC			NC	NC	NC	NC			NC	NC
Comm→P9	NC	NC			NC	NC	NC	NC			NC	NC	NC	NC			H	NC	NC	NC			NC	NC			H	NC	NC	NC			NC	NC
Comm→P10	NC	NC			NC	NC	NC	NC			NC	NC	NC	NC			H	NC	NC	NC			NC	NC			NC	NC	H	NC			NC	NC
Comm→P11	NC	NC			NC	NC	NC	NC			NC	NC	NC	NC			H	NC	NC	NC			NC	NC			NC	NC	NC	NC			H	NC
Comm→P12	NC	NC			NC	NC	NC	NC			NC	NC	NC	NC			H	NC	NC	NC			NC	NC			NC	NC	NC	NC			NC	NC



etMEMS 1x12 Fiberoptic Switch

Driving Symbol Description

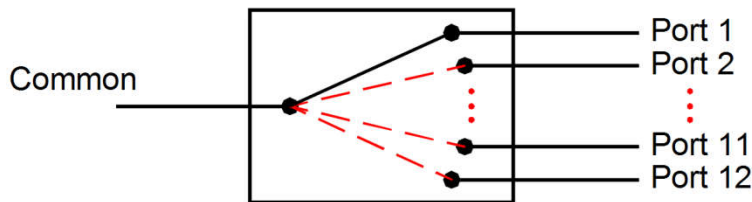
Symbol	Description
H	Driving voltage
NC	No electric connection
GND	Ground

Specifications	Min	Typical	Max	Unit
H	4.0	4.5	5.0 ^[1]	V
Power Consumption		170 ^[2]		mW

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

[2]. Necessary power on each driving pin, measured at 3.5VDC and room temperature.

Functional Diagram



MEMS 1x12 Switch

Ordering Information

MEMS-	Type	Wavelength	Switch	Package	Fiber Type	Fiber Length	Connector	
□□□ □ 2 □ □ □ □ □	1x12=112 Special=00	C+L=2 1310=3 1550=5 1310 & 1550=9 1260-1620=B Special=0	Non-latching=2	Standard=1 Special=0	SMF-28=1 Special=0	Bare fiber=1 900um loose 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

