Fiber Optics

AGILTRON INC

LASER COMPONENTS

MEMSLatch™ 1x8 Fiberoptic Switch

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

Product Description

The MEMSLatch Series 1x8 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 and latches to preserve the selected 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. It is conveniently driven by 5V.

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.

Performance Specifications

MEMS Series 1x8 Switch	Min	Typical	Max	Unit
Operation Wavelength	Single Band:	1260~1360 or 1510~1610		nm
	Dual Band:	1260~1360 and 1510~1610		
	Broad Band:	1260~1620		
Insertion Loss [1] [2]		0.7	1.2	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
Switching Type		Latching		
Operating Temperature	-5		70	°C
Storage Temperature	-40		85	°C
Optical Power Handling		300	500 [4]	mW
Fiber Type		SMF-28		
Package Dimension		41.0L x 40.0W x 9.0H		mm

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

Applications

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

RoHS Compliant

Revision: 060-12
04-27-12

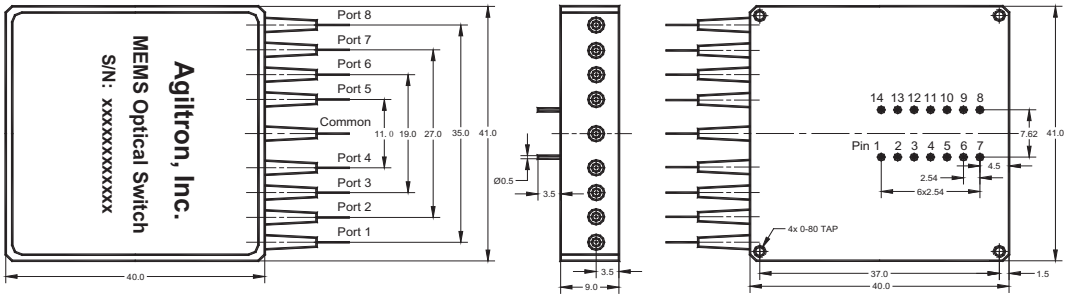
Germany & Other Countries
Laser Components GmbH
Tel: +49 8142 2864 – 0
Fax: +49 8142 2864 – 11
info@lasercomponents.com
www.lasercomponents.com

United Kingdom
Laser Components (UK) Ltd.
Tel: +44 1245 491 499
Fax: +44 1245 491 801
info@lasercomponents.co.uk
www.lasercomponents.co.uk

LASER COMPONENTS

MEMSLatch™ 1x8 Fiberoptic Switch

Mechanical Dimensions (Unit: mm)



Electrical Driving Requirements

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

Pin #	1	2	3	4	5	6	7
TTL/Parallel Digital I/O Mode	NC	VCC	STROBE	GND	D0	D1	D2
Pin #	8	9	10	11	12	13	14
TTL/Parallel Digital I/O Mode	NC	NC	NC	GND	NC	D3/MODE	RESET

1. VCC: 5V DC.
2. Peak Current : 200mA.
3. Static Current: 20mA.

Optical Path	Electric Drive			
	D0	D1	D2	D3
Common ↔ Port 1	L	L	L	GND
Common ↔ Port 2	L	L	H	GND
Common ↔ Port 3	L	H	L	GND
Common ↔ Port 4	L	H	H	GND
Common ↔ Port 5	H	L	L	GND
Common ↔ Port 6	H	L	H	GND
Common ↔ Port 7	H	H	L	GND
Common ↔ Port 8	H	H	H	GND

RoHS Compliant

Revision: 060-12
04-27-12

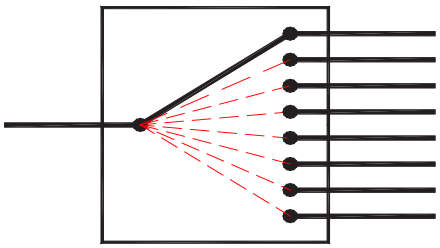
Germany & Other Countries
Laser Components GmbH
Tel: +49 8142 2864 – 0
Fax: +49 8142 2864 – 11
info@lasercomponents.com
www.lasercomponents.com

United Kingdom
Laser Components (UK) Ltd.
Tel: +44 1245 491 499
Fax: +44 1245 491 801
info@lasercomponents.co.uk
www.lasercomponents.co.uk

LASER COMPONENTS

MEMSLatch™ 1x8 Fiberoptic Switch

Functional Diagram



MEMS 1x8 Switch

Ordering Information

MEMS-	☐☐	☐	☐	☐	☐	☐	☐	☐
	Type	Wavelength	Switch	Package	Fiber Type		Fiber Length	Connector
	1x8=18 8x1=81 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

RoHS Compliant

Revision: 060-12
04-27-12

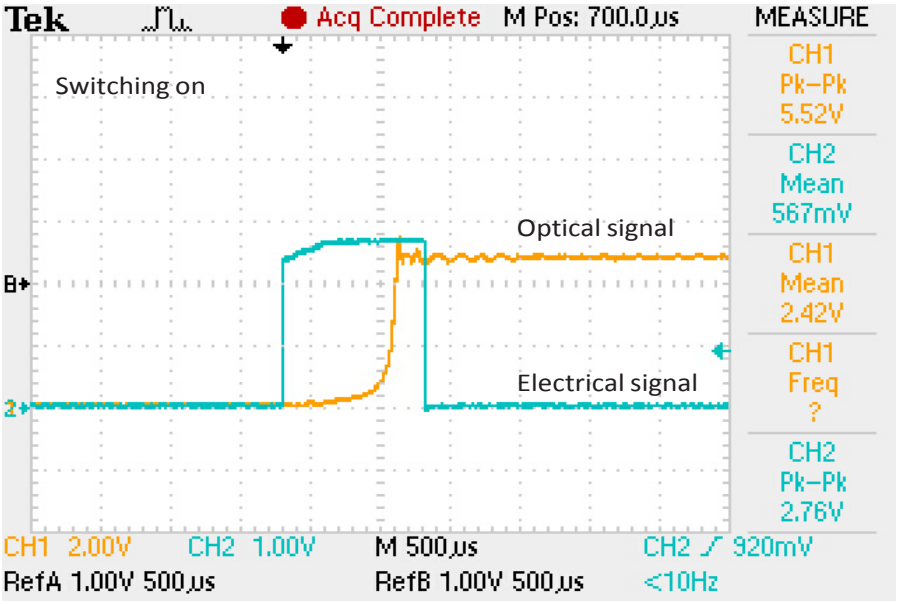
Germany & Other Countries
Laser Components GmbH
Tel: +49 8142 2864 – 0
Fax: +49 8142 2864 – 11
info@lasercomponents.com
www.lasercomponents.com

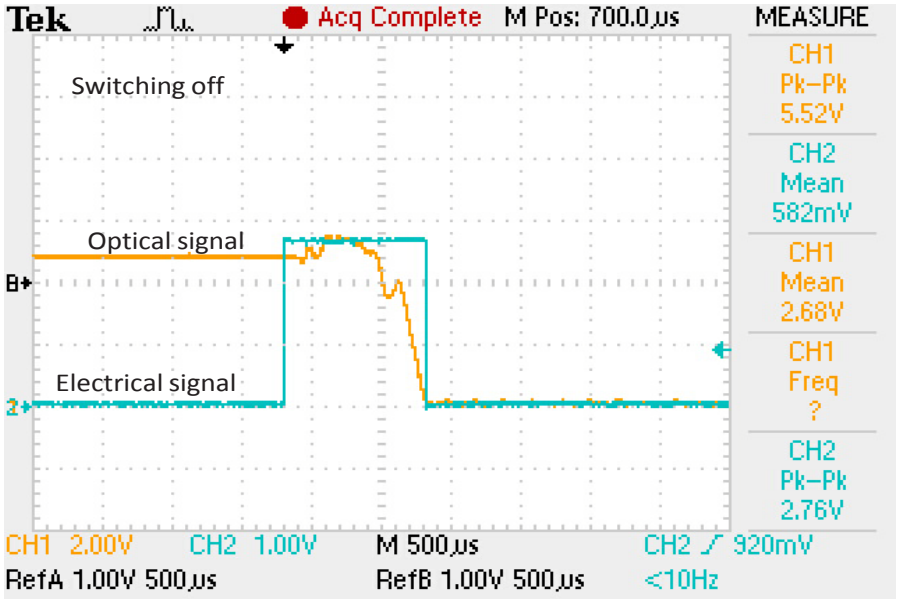
United Kingdom
Laser Components (UK) Ltd.
Tel: +44 1245 491 499
Fax: +44 1245 491 801
info@lasercomponents.co.uk
www.lasercomponents.co.uk

LASER COMPONENTS

MEMSLatch™ 1x8 Fiberoptic Switch

MEMS switching response





RoHS Compliant

Revision: 060-12
04-27-12

Germany & Other Countries
Laser Components GmbH
Tel: +49 8142 2864 – 0
Fax: +49 8142 2864 – 11
info@lasercomponents.com
www.lasercomponents.com

United Kingdom
Laser Components (UK) Ltd.
Tel: +44 1245 491 499
Fax: +44 1245 491 801
info@lasercomponents.co.uk
www.lasercomponents.co.uk

06/12 / V1 / HW / agiltron/sm_schalter/mems_switch_1x8_sm.indd