

Non-Latching Type, SM & MM: 1x1, 1x2



DATASHEET

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The MEMS Series Ultra-Mini 1x2 Reflective Fiber Optical Switch connects optical channels by redirecting incoming optical signals into selected output fibers. This is achieved by using a proprietary thermal activated micro-mirror, moving-in and -out optical paths, uniquely featuring high stability over wide temperature range without compensation, small size and very long life cycle. The ultra-mini Reflective switches are configured in 1x1 and 1x2 with single or multimode fibers. The Ultra-Mini switches are Telcordia standards GR1221 qualified.

Agiltron provides customized design and modular assemblies to meet control and integration applications.

Features

- High Reliability
- Direct DC drive
- Ultra Small
- Intrinsic tolerance to ESD

Specifications

Paramet	er	Min	Typical	Max	Unit	
Operation Mayalangth	Single Mode	1260~1360 and / or 1510~1610				
Operation Wavelength	Multimode	810~890 and/or 1260/1360				
Insertion Loss [1], [2]			0.6	1.0 / 1.2 [3]	dB	
Polarization Dependent Lo	oss (SM)		0.1		dB	
Return Loss [1]	Single Mode	50			dB	
	Multimode	35				
Cross Talk On-Off Ratio [1]	Single Mode	50			4D	
Cross raik On-On Ratio	Multimode	35			dB	
Switching Time			10		ms	
Repeatability				\pm 0.05	dB	
Repetition Rate	Repetition Rate			20	Hz	
Durability	Durability				Cycle	
Switching Type		Non-Latching				
Optical Power Handling (C	Optical Power Handling (CW)		300	500	mW	
Operating Temperature [4]		-5		+70	°C	
Storage Temperature		-40		+85	°C	
File and Trans	Single Mode	SMF-28 or equivalent				
Fiber Type	Multimode	MM 50/125, MM 62.5/125 or equivalent				

Notes:

- [1]. Excluding connectors.
- [2]. Multimode IL measured @ Light Source CPR < 14dB.
- [3]. Dual band, Broad band.
- [4]. Lower temperature version is available, please call us.

Note: The specifications provided are for general applications with a cost-effective approach. If you need to narrow or expand the tolerance, coverage, limit, or qualifications, please [click this link]:

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P +1 781-935-1200

E sales@photonwares.com

www.agiltron.com



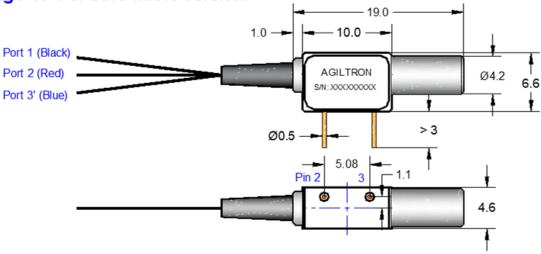
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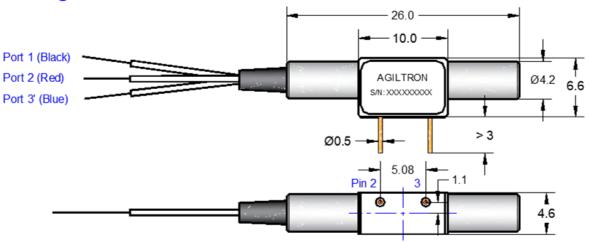
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Mechanical Dimensions (mm)

Package 1: For bare fibers version.



Package 2: For 900 um loose tube version.



*Product dimensions may change without notice. This is sometimes required for non-standard specifications.

Electrical Driving Requirements

Status	Switch Type			Pin No.			
	1x1 (Normally Transparent)	1X1 (Normally opaque)	1x2	Pin 1	Pin 2	Pin 3	
Status 1	Bright	Dark	Port $1 \rightarrow 2$	NC ^[1]	0	0	
Status 2	Dark	Bright	Port 1 → 3	NC	0	+V [2]	

[1]. NC: No electronic Connection. [2]. +V: $3.8 \sim 4.5$ VDC, Typical is 4.0 VDC. [3]. Power Consumption is about 170 mW.



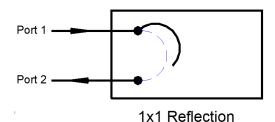


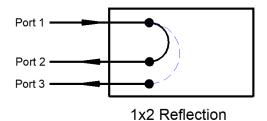
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Mechanical Dimensions (mm)





Ordering Information

			2	1				
Prefix	Туре	Wavelength*	Configuration	Package	Fiber Type	Fiber Cover	Fiber Length	Connector
MURS- ^[1]	1x1 N/T ^[2] = 1T 1x1 N/D ^[3] = 1D 1x2 = 12	1060 nm = 1 1310 nm = 3 1550 nm = 5 780 nm = 7 850 nm = 8 1310/1550 nm = 9 850/1310 nm = A 1260~1620 nm = B Special = 0	Non-latching = 2	Standard = 1	SMF-28 = 1 MM 50/125 = 2 MM 62.5/125 = 6 Special = 0	Bare fiber = 1 900 um 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/PC = 7 Duplex LC/PC = 8 LC/APC = A LC/UPC = U Special = 0

[1]. MURS: MEMS Ultra-Mini Reflective Switch.

[2]. N/T: 1x1 Switch, Normally Transparence.

[3]. N/D: 1x1 Switch, Normally Dark.

Application Notes

Fiber Core Alignment

Note that the minimum attenuation for these devices depends on excellent core-to-core alignment when the connectors are mated. This is crucial for shorter wavelengths with smaller fiber core diameters that can increase the loss of many decibels above the specification if they are not perfectly aligned. Different vendors' connectors may not mate well with each other, especially for angled APC.

Fiber Cleanliness

Fibers with smaller core diameters (<5 µm) must be kept extremely clean, contamination at fiber-fiber interfaces, combined with the high optical power density, can lead to significant optical damage. This type of damage usually requires re-polishing or replacement of the connector.

Maximum Optical Input Power

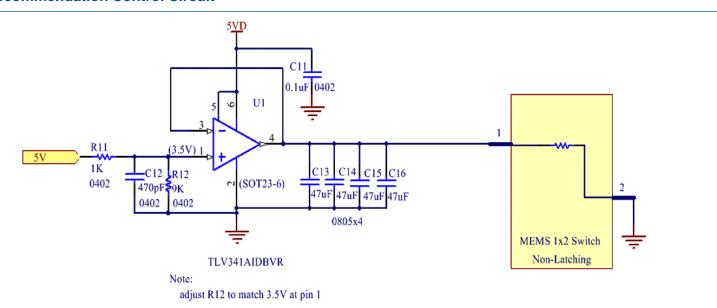
Due to their small fiber core diameters for short wavelength and high photon energies, the damage thresholds for device is substantially reduced than the common 1550nm fiber. To avoid damage to the exposed fiber end faces and internal components, the optical input power should never exceed 20 mW for wavelengths shorter 650nm. We produce a special version to increase the how handling by expanding the core side at the fiber ends.



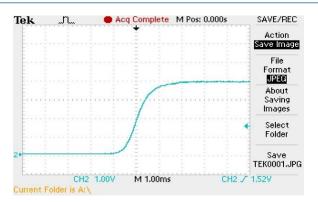
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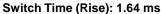


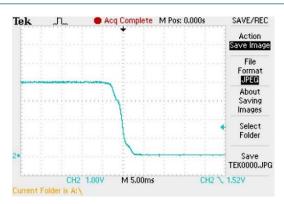
Recommendation Control Circuit



MEMS 1X1 Switch Response Time Test Report







Switch Time (Fall): 5.4 ms



Working at 1 Hz