

# ULTRA-MINI 1x1, 1x2, 2x2 (ADD/DROP) FIBER-OPTIC SWITCH

## OFMS SM Series

### Product Description

Oplink OFMS ultra-mini fiber-optic switches are ideal for module and system integration where the unique unilateral input and output fiber configuration is preferred. These switches are designed for use in re-configurable optical add/drop multiplexers, optical cross-connect systems, and network switching for fault protection applications.

The opto-mechanical ultra-mini switch can be directly mounted on printed circuit board (PCB) and offer the same excellent performance characteristics of Oplink's standard OFMS series switch products. The OFMS miniature switches are Telcordia standards GR-1221 and GR-1073 qualified.

Oplink provides customized design to meet special control and applications. Also, Oplink offers modular assemblies that integrate other components to form a full function module or subsystem.



### Performance Specification

Parameters	Min	Typ.	Max	Unit	
Operating Wavelength Range ( $\lambda_{op}$ )	1290 ~ 1330 and/or 1525 ~ 1610			nm	
Insertion Loss <sup>1</sup>	1x1, 1x2	$\leq 0.5$		dB	
	2x2AD	$\leq 0.6$			
Polarization Dependent Loss	$\leq 0.07$			dB	
Return Loss	$\geq 50$			dB	
Channel Cross-talk	$\geq 55$			dB	
Repeatability	$\pm 0.02$			dB	
Switching Time <sup>2</sup>	$\leq 4$			ms	
Operating Voltage	$5 \pm 10\%$			VDC	
Driving Current <sup>3</sup>	Latching	22	32	mA	
	Non-latching	31	46		
Coil Resistance	Latching	$202.5 \pm 10\%$		$\Omega$	
	Non-latching	$145 \pm 10\%$			
Cycle Rate	$\leq 10$			Hz	
Durability	10 millions			cycle	
Operating Power Handling	500			mW	
Operating Temperature ( $T_{op}$ )	0			70	$^{\circ}\text{C}$
Storage Temperature	-40			80	$^{\circ}\text{C}$
Humidity <sup>4</sup>	$< 85\% \text{ RH, or } < 90\% \text{ RH for short term}$				
Switch Type	latching or non-latching, single coil				
Fiber Type	Corning SMF-28 250 $\mu\text{m}$ fiber				
Fiber Color Coding	Red, Black, Clear and Blue for port 1,2,3 and 4 in order				
Package Dimension	250 $\mu\text{m}$ Bare Fiber	29.0 (L) x 10.5 (W) x 7.85 (H)		mm	
	900 $\mu\text{m}$ Loose Tube	38.5 (L) x 10.5 (W) x 7.85 (H)		mm	

### Features

- ◆ Miniature Size
- ◆ Unilateral Input/output Fiber Configuration
- ◆ Bi-directional Operation
- ◆ 1x1, 1x2 Latching or Non-latching Configurations
- ◆ Wide Operating Wavelength Range
- ◆ Seam-seal Package
- ◆ Highly Stable & Reliable

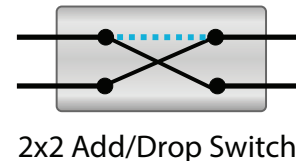
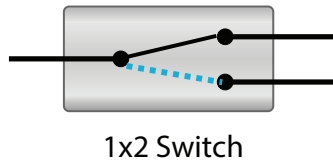
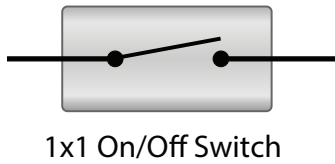
### Applications

- ◆ Network Switching
- ◆ Re-configurable Optical Add/drop Multiplexers
- ◆ Optical Cross-connect Systems
- ◆ Network Protection and Restoration
- ◆ Module and System Integration
- ◆ Instrumentation, Testing and Measurement

#### Notes:

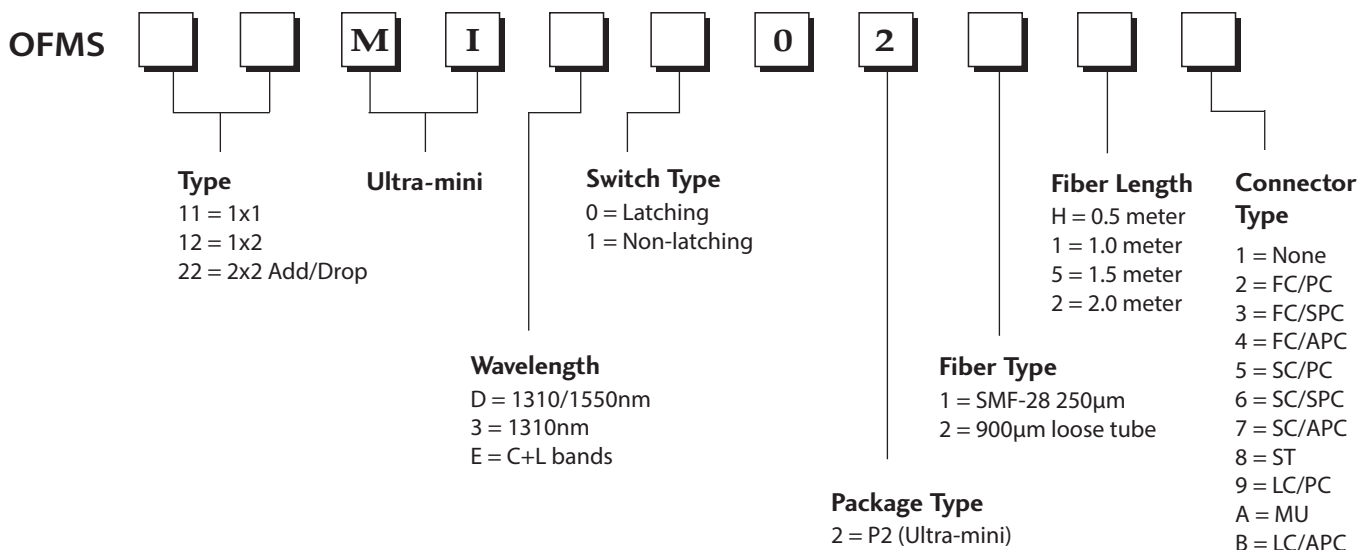
- 1) Excluding connectors; add 0.3 dB within  $\lambda_{op}$  and  $T_{op}$ .
- 2) Switching time is defined as the time interval between electrical trigger and 90% of stable optical output.
- 3) A  $> 20\text{ms}$  DC pulse is recommended for latching type of switch.
- 4) Short term is defined as less than 96 consecutive hours and less than a total of 15 days over a one year period.

## Function Diagram



## Ordering Information

Oplink can provide a remarkable range of customized optical solutions. For detail, please contact Oplink's OEM design team or account manager for your requirements and ordering information (510) 933-7200.



\* The tolerance of fiber length is +/-0.1m.  
\* 1 meter is standard. The lead time for special fiber length will be longer.  
\* RoHS: Add "G" to the end of the above PN for RoHS6 requirement.