1×N MEMS Optical Switch Module

Description

(MEMS SMOSM)

The 1xN MEMS SM optical switch module is an advanced microelectromechanical system (MEMS) optical device that features high-speed operation, low insertion loss, and high stability. It is capable of receiving a single input light signal and accurately distributing it to N independent output ports. The module is designed compactly and operates rapidly, completing light signal switching in the millisecond range, with extremely low insertion loss, thus enhancing the overall efficiency of the system. Moreover, it supports remote control and can flexibly configure the optical path through external signals, making it suitable for applications such as data centers, optical communication networks, and scientific research experiments.

Key Features

- Mini Size
- Fast Switching Time

Applications

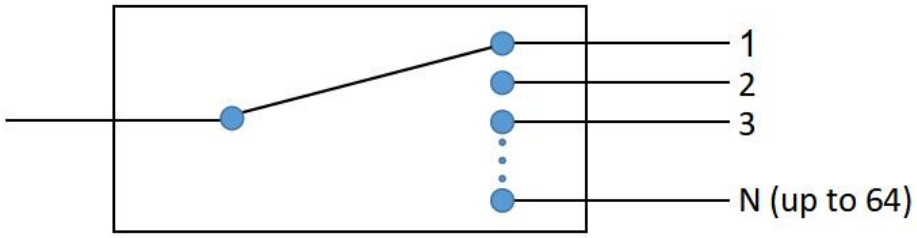
- Low Insertion Loss
- Enhanced Reliability and Exceptional Stability
- Metropolitan Area Network
- Data Center

Follow the Standards

- Fiber Optic Sensing and Monitoring
- Instruments
- Telcordia GR-1221

Optical Path Diagram

- Telcordia GR-1073

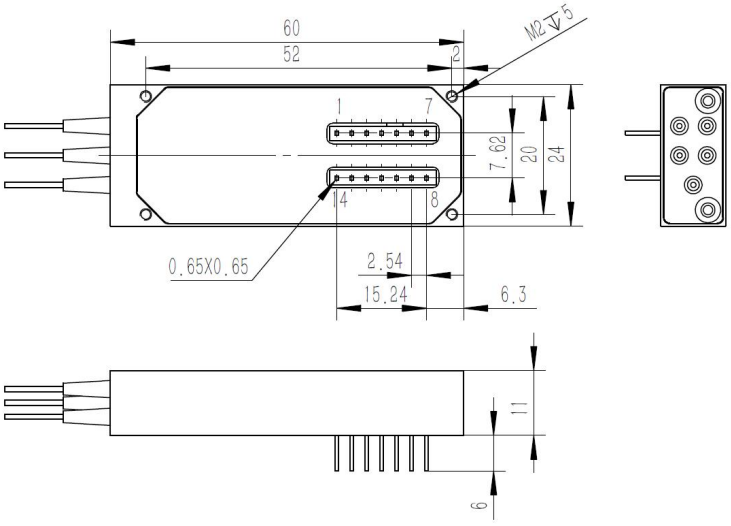


Specifications

Parameter \ Type	Unit	1×N (N≤64) MEMS SMOSM						
		1×2	1×4	1×8	1×16	1×32	1×48	1×64
Center Wavelength	nm	1310/1550/1625/1650						
Insertion Loss	dB	≤0.6	≤0.8		≤1.0	≤1.2	≤1.8	
Wavelength Dependent Loss	dB	≤0.3						
Temperature Dependent Loss	dB	≤0.4 (2≤N≤16), ≤0.6 (18≤N≤64)						
Polarization Dependent Loss	dB	≤0.2						
Return Loss	dB	≥50						
Cross Talk	dB	≥50 (2≤N≤32), ≥45 (33≤N≤64)						
Repeatability	dB	≤0.05						
Response Time	ms	≤20						
Switching Mode	/	Non-Latching						
Handling Power	mW	≤500						
Drive Voltage	V	DC 5±10%						
Operating Current	mA	≤50						
Operating Temperature	℃	-5~+70						
Storage Temperature	℃	-40~+85						
Operating Humidity	%	5~95						
Dimensions	mm	60*24*11						
Control Interface	/	TTL or I2C or RS232						

1. **Specifications are without connectors.7. IL is 0.2dB higher and RL is 5dB lower for each connector added.**
2. **IL is measured at CWL, 23℃.**
3. **IL is for single-band. Dual-band adds 0.1dB.**
4. **Power off isolation is same as crosstalk.**
5. **WDL is measured in a +/- 20nm range at 23°C.**
6. **Repeatability is defined after 100 cycles.**

Mechanical Dimension



Pin Configuration

PIN	NAME	FUNCTION
1	VDD	Power Supply：+5V
2	GND	Ground
3	PD1	TTL Input : L<0.8V, 2.2V<H<3.3V
4	PD2	TTL Input : L<0.8V, 2.2V<H<3.3V
5	PD3	TTL Input : L<0.8V, 2.2V<H<3.3V
6	PD4	TTL Input : L<0.8V, 2.2V<H<3.3V
7	PD5	TTL Input : L<0.8V, 2.2V<H<3.3V
8	NC	No Connection
9	NC	No Connection
10	GND	Ground
11	RX	Receive Data
12	TX	Transmission Data
13	NC	No Connection
14	RST	Reset system; Low=Operable

Data Bit Switching Logic Table

PD5	PD4	PD3	PD2	PD1	Channel
0	0	0	0	1	1
0	0	0	1	0	2
0	0	0	1	1	3
0	0	1	0	0	4
0	0	1	0	1	5
0	0	1	1	0	6
0	0	1	1	1	7
0	1	0	0	0	8
...	...	...	...	...	N

Note: Default reset on channel 1 after power-up

Ordering Information

MEMS-SMOSM-1*N-XXXX-XX-XXX-XX/XX-XX*XX

- Dimensions: 60*24*11 etc.
- Connector: FC/UPC, FC/APC etc.
- Fiber code:
- Pigtail Type: 0=250μm, 1=900μm etc.
- Operating Wavelength: 1550=1550nm etc.
- N≤64 etc.