

1xN MEMS optical switch is based on micro-electro-mechanical system technology. It allows channel selection between one input fiber and N output fibers by rotating the mirror of MEMS chip.

The switch is bi-directional and can also be used as a Nx1 selector switch. The optical switch offers highly reliable, durable, long-life operation in a compact package.

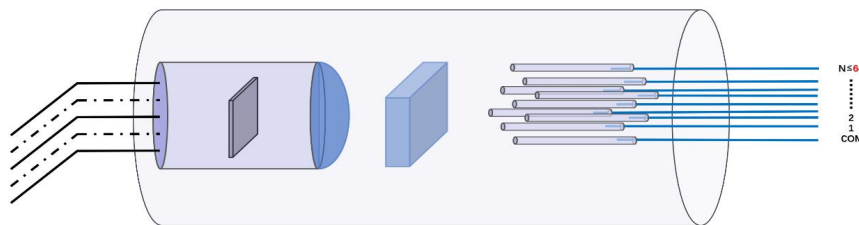
Features

- ◆ Proven MEMS durability and reliability
- ◆ Compact Form Factor
- ◆ Fast switching time
- ◆ Qualified to Telcordia GR-1073-CORE and RoHS

Applications

- ◆ Optical signal switching and routing
- ◆ Optical network protection and restoration
- ◆ Optical path monitoring (Working with OTDR or OCM)
- ◆ Instrumentation resource sharing

Product Configurations



Note: "C":common port
 "1、2、3...64":possible selected output ports=1~64;

Optical Specifications

PARAMETER		VALUE	UNIT	NOTE
Wavelength		13:1290~1330 15:1525~1568 16:1600-1650	nm	Or customer specify
Test Wavelength		1310/1550/1625 or 1650	nm	
OSW Channels		4/8/12/16/24/32/48/64		N
Insertion Loss	1x4	≤0.8 @S	dB	@CWL,23°C Without Connectors @S: 13 or 15 or 16 @D: 13&15 or 15&16 (If with connectors or support @D, IL
	1x8			
	1x12	≤1.0 @S		
	1x16			
	1x24	≤1.2 @S		
	1x32			
	1x48			

	1x64			increased by 0.2~0.3dB)
Return Loss	≥45	dB	Or customer specify	
Repeatability	≤0.1	dB		
Crosstalk	≥40	dB	Or customer specify	
Polarization Dependence Loss	≤0.2	dB		
Wavelength Dependence Loss	≤0.3 @S ≤1.0 @D	dB	@CWL±20nm, 23°C	
Temperature Dependence Loss	≤0.4 @N≤16 ≤0.6 @N≥24	dB		
Switch Time	5 @1x16 10 @1x32	ms	Module Or customer specify If support hitless, switching time doubled	
Durability	≥1x ¹⁰ ⁹	cycle		
Maximum Optical Power	≤500	mW		
Hitless	Optional @N≤32			

Electrical and Mechanical Specifications

PARAMETER	VALUE	UNIT	NOTE
Operation Temperature	-5~65	°C	
Storage Temperature	-40~85	°C	
Operation Humidity	5~95	%RH	
Storage Humidity	5~95	%RH	

Pigtail and connector type/length

PARAMETER	VALUE	UNIT	NOTE
Fiber Type	G657A2 or G657B3 250um bare fiber		
Fiber Pigtail (All Ports)	250um fiber or 900um loose tube		
Fiber Length (All Ports)	1.00±0.05	m	Or customer specify
Optical Connector (All port)	None		Or customer specify

MECHANICAL DRAWINGS

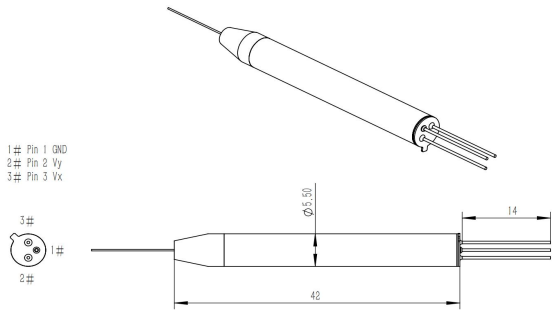


Figure 1 Mechanical Drawings(1xN≤16)

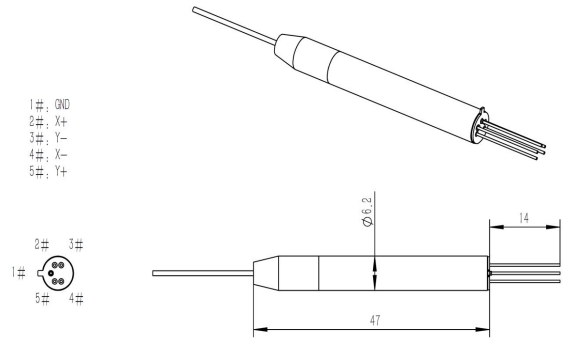


Figure 2 Mechanical Drawings(1xN≥24)

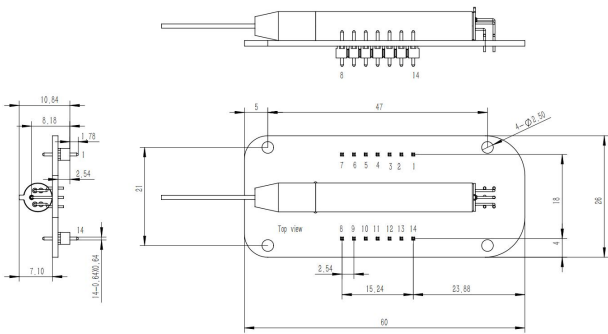


Figure 3 Cylindric Device with PCB (Type A, 1xN≥24)

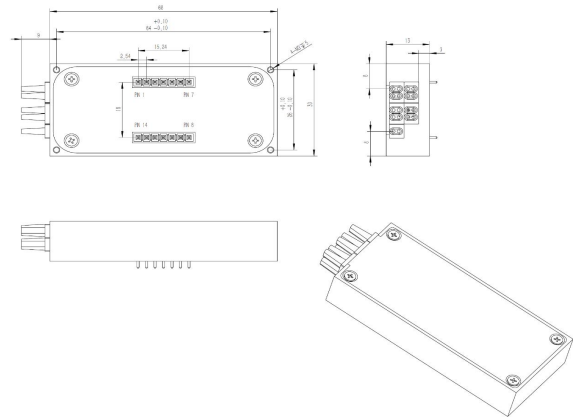


Figure 4 Module (Type B, 1xN≤16)

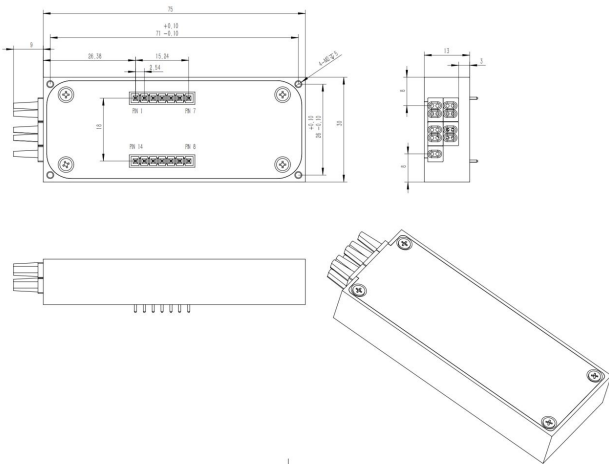


Figure 5 Module (Type B, 1xN≤32)

Electronic PIN Definition

Pin Number	Name	Input/Output	Level	Function
1	NC	No connect		
2	VCC	Power supply		+ (5.0±5%) V Power Supply Max

Pin Number	Name	Input/Output	Level	Function
				100mA
3	I/O		LVTTL	Reserved
4	GND			Power supply ground
5	I/O		LVTTL	Reserved
6	TXD	Output	LVTTL	TTL UART data output
7	RXD	Input	LVTTL	TTL UART data input
8	I/O		LVTTL	Reserved
9	I/O		LVTTL	Reserved
10	I/O		LVTTL	Reserved
11	Case GND			Case ground
12	I/O		LVTTL	Reserved
13	I/O		LVTTL	Reserved
14	Reset	Input	LVTTL	Reset, low active, the pulse width needs 4ms

TTL/UART Port Control Setting

Baud Rate: 115200

Start Bits: 1

Data Bits: 8

Parity: None

Stop Bits: 1

Flow Control: None

Port Control Grammar
Command

FLAG	LEN	RES	COMMA	DATA	SUM
2 Byte	1 Byte	1 Byte	1 Byte		1 Byte

FLAG: 0xEF EF or 0xA A A A

LEN: Total number of command bytes from RES to SUM

RES: 0xFF

SUM: Checksum, SUM=FLAG+LEN+RES+COMMA+DATA

Response

FLAG	LEN	RES	RESP	DATA	SUM
2 Byte	1 Byte	1 Byte	1 Byte		1 Byte

FLAG: 0xEDFA

LEN: Total number of command bytes from RES to SUM

RES: 0xFF

SUM: Checksum, SUM=FLAG+LEN+RES+COMMA+DATA

Port Controls Command

Set Channel						
Command	FLAG1	LEN	RES	COMMA	DATA	SUM
	0xEFEF	0x04	0xFF	0x04	CHANNEL(1byte)	SUM
	eg: Set channel N Set channel 1: EF EF 04 FF 04 01 E6 Set channel 2: EF EF 04 FF 04 02 E7 Set channel 3: EF EF 04 FF 04 03 E8 Set channel 4: EF EF 04 FF 04 04 E9 Set channel 7: EF EF 04 FF 04 07 EC					
Response	FLAG2	LEN	RES	RESP	DATA	SUM
	0xEDFA	0x04	RES	0x04	Success: 0xEE Fail: 0xEF	SUM
	eg: ED FA 04 FF 04 EE DC					

Get Channel						
Command	FLAG1	LEN	RES	COMMA	DATA	SUM
	0xEFEF	0x03	RES	0x02		SUM
eg: EF EF 03 FF 02 E2						
Response	FLAG2	LEN	RES	RESP	DATA	SUM
	0xEDFA	0x04	RES	0x02	CHANNEL (1byte)	SUM
	eg: ED FA 04 FF 02 07 F3					

Note:When channel 0 is set, the voltage is 0, that is block state

Order Information

MOSW-	1N -	Wavelength-	Fiber Type	Fiber Dia. -	Fiber length-	Connector-	Package
	14 : 1X4	13: 1310nm	S: SM	025: 250um bare fiber	01: 1m	00: no connector	C: Cylindric package
	18 : 1X8	15: 1550nm	M:MM	09: 0.9mm	other	01U: LC/UPC	CP: External PCB Version
	116 : 1X16	16: 1625nm				01A: LC/APC	M : Module, single stage,Max. 1x64
	132 : 1X32	1315: 1310/1550nm				02U: SC/UPC	M2 : Module2, dual stage,Max. 1x128
	164 : 1X64	1516: 1550/1625nm				02A: SC/APC	M3 : Module3, dual stage,Max. 1x288
	Other	other				03U: FC/UPC	
						03A: FC/APC	
						other	