1×4 *MagLight*™ Optical Switch (PM)

Photonics Beyond Boundary

Features

- No moving parts, best reliability
- Ultra fast switching speed
- Extremely stable latching mode
- Low power consumption
- Easy to route-all fibers on one end
- Exceptional durability and stability

RoHS Compliant

Applications

- Optical switching
- Channel protection
- System monitoring
- Test & measurement
- Fiber optics sensing system
- High speed optics beam scanning

Product Description

Primanex *MagLight* ™ 1x4 optical switch is an all solid-state device without any moving parts. The switching of the optical signal is based on well-known Faraday Effect, and realized by using a patent protected non-mechanical configuration with solid-state all-crystal design which eliminates the need for mechanical movement. The microsecond fiber optic switch is designed to meet the most demanding switching requirements for reliability, durability, speed, and none-stopping high frequency switching; more specifically, is designed to maintain the polarization state of incoming optical signal.

Specifications

Item	Unit	Parameters		Notes
		Unidirectional	Bidirectional	
Wavelength Range	nm	1525 ~ 1565		Other wavelengths available
Insertion Loss	dB	<2.2	<2.4	Add 0.6dB for high-power version
Polarization Extinction Ratio	dB	>18		
Return Loss	dB	>40	>30	
Crosstalk	dB	>40	>35	Typical >50dB
Repeatability	dB	+/- 0.01		
Durability	Cycles	> 30 Billions		
Switching Speed	μs	200 ~ 400		Other speed optional
Switching Type	N/A	Latching		Need power only during switching
Operating Temperature	℃	-5 ~ 70		
Storage Temperature	℃	-40 ~ 85		
Maximum Optical Power	mW	500		Refer to hi-power version for higher power handling requirement
Fiber Type	NA	Panda PM fiber		Customizable
Dimension(L×W×H)	mm	90×76×17.5		

*. All the specifications are based on the devices without connectors, and guaranteed over the operating temperature range, wavelength range, and all polarization states.

**. Specifications are subject to change without notice.

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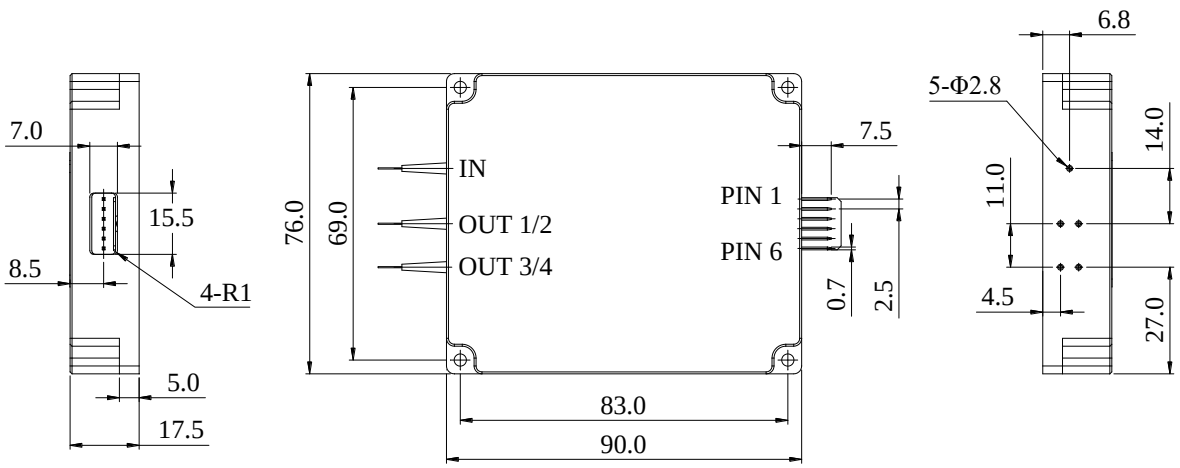
Dimensions Drawing (Unit: mm)



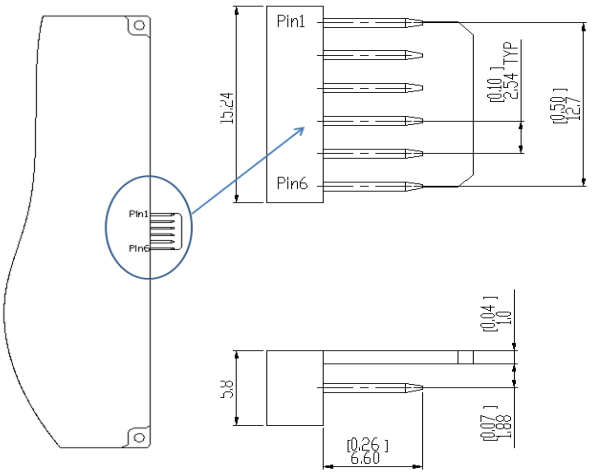
Electrical Connector Specifications

Vendor: Molex (P/N: 0022057068)

Housing: Natural nylon，UL 94V-O

Contact: Brass, 0.64 mm (.025") square

Plating: Tin



Electrical Specifications

Parameter	Specification	Unit
Switching Speed	200~400	μs
Switching Voltage(VCC)	5 (+/-5%)	V
Switching Current	< 200	mA
Pulse Width(typical)	1000	μs
Claim Frequency	< 800	Hz

*. for electrical specifications related to other switching speed, please contact Primanex.

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Port Mark & Pin Assignment

Ports & Pins	Assignment	Note
IN	The optical input port	-
OUT1, OUT2, OUT3, OUT4	The optical output port1, 2, 3, 4,	-
Pin 1	VCC	5V
Pin 2	GND	-
Pin 3	Ctrl 0	5V TTL
Pin 4	Ctrl 1	5V TTL
Pin 5	Ctrl 2	5V TTL
Pin 6	NA	-

Pin Control Table

Table1: Pin control signal corresponding to switching status for unidirectional and bidirectional switch

Switching State	Ctrl 0	Ctrl 1	Optical Path	
			Unidirectional	Bidirectional
0	0	0	IN → OUT1, OUT4 → IN	IN ↔ OUT1
1	0	1	IN → OUT2, OUT3 → IN	IN ↔ OUT2
2	1	0	IN → OUT3, OUT2 → IN	IN ↔ OUT3
3	1	1	IN → OUT4, OUT1 → IN	IN ↔ OUT4

Ordering Information (Example:RFMS10-14PM1121120）

□ FMS1□ -14PM□ □ □ 1□ □ □

Working Mode
- R. Regular (Unidirectional)
- B. Bidirectional

Power Handling
- 0. Regular 500mW
- 1. Hi-power: 100μJ for pulsed or 5W for CW
- 2. Others

Switch Speed
- 1. 200~400μs
- 2. 10~30μs
- 3. Others

Operating Wavelength
- 1. C Band
- 2. L Band
- 3. C & L Band
- 4. Others

Fiber Length
- 1. 0. 5 +/- 0.1m
- 2. 1.0 +/- 0.1m
- 3. Others

Dimension
- 1. Standard
- 2. Others

Fiber Type
- 1.250μm fiber
- 2.900μm fiber
- 3. Others

Connector Type
- 0. No Connector
- 1. FC/UPC
- 2. FC/APC
- 3. SC/UPC
- 4. SC/APC
- 5. LC/PC
- 6. MU/PC
- 7. Others

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