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LightBend™ Octo Full 2x2 MultiMode Fiberoptic Switch

(Bidirectional)

(Protected by U.S. patent 6823102 and pending patents)

Product Description

The LB Series Octo Full 2x2 multimode switch integrated 8 simultaneously activated 2x2 switches in a single compact format. It is designed for 40G transceiver bypass application. The device connects optical channels by redirecting incoming optical signals into selected output fibers. This is achieved using a patented opto-mechanical configuration and activated via an electrical control signal. Latching operation preserves the selected optical path after the drive signal has been removed. The switch has integrated electrical position sensors. This novel design significantly reduces moving part position sensitivity, offering unprecedented high stability as well as an unmatched low cost. The switch is bidirectional.

We offer tight-bend-fiber version, which reduces the minimum bending radius from normal 15 mm to 7 mm. This feature enables smaller overall foot print.

Features

- Low Optical Distortions
- High Reliability
- Fail-Safe Latching
- Epoxy-Free Optical Path

Applications

- Channel Blocking
- Configurable Add/Drop
- System Monitoring
- Instrumentation

Performance Specifications

LB Octo Full 2x2 MM Switch		Min	Typical	Max	Unit
Operation Wavelength		850, 1310, 1550, 850 & 1310			nm
Insertion Loss[1] [3]			0.5	1.0	dB
Wavelength Dependent Loss				0.25	dB
Return Loss [2], [3]		35			dB
Cross Talk [2] [3]		35			dB
Switching Time			3	10	ms
Repeatability				±0.02	dB
Durability		10^7			Cycle
Operating Voltage		4.5	5	6	VDC
Operating Current [±10%]	Latching		45		mA
	Non-Latching		62		
Switching Type		Latching/Non-Latching			
Operating Temperature		-5		70	°C
Storage Temperature		-40		85	°C
Optical Power Handling [4]			300	500	mW
Package Dimension		30.0L x 27.0W x 14.0H			mm

1. Insertion loss excludes connector.
2. Light source CPR<14dB.
3. Our device is designed and optimized for certain laser launch condition which is characterized as CPR value. In general, if application exceeds the specified CPR value, optical performance will become worsen.
4. Continuous operation, for pulse operation call.

Warning: This device must use the reference circuit to driver otherwise it is unstable.

RoHS Compliant

Revised on 06/30/22
(Click here for latest revision)

15 Presidential Way, Woburn, MA 01801 Tel: (781) 935-1200 Fax: (781) 935-2040
www.agiltron.com

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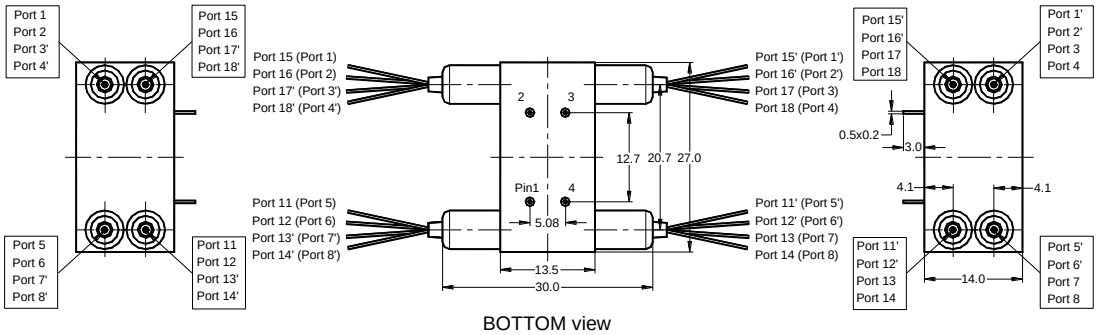
Mechanical Dimensions (Unit: mm)



BOTTOM view

Fiber or Loose tube colors:

[1]. Port 1, Port 1', Port 11, Port 11', Port 5, Port 5', Port 15 and Port 15' are Black.

[2]. Port 2, Port 2', Port 12, Port 12', Port 6, Port 6', Port 16 and Port 16' are Red.

[3]. Port 3, Port 3', Port 13, Port 13', Port 7, Port 7', Port 17 and Port 17' are Blue.

[4]. Port 4, Port 4', Port 14, Port 14', Port 8, Port 8', Port 18 and Port 18' are white.

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

Electrical Driving Requirements

The load is a resistive coil which is activated by applying 5V (draw ~ 40mA). However, the current flow direction must be correct otherwise it will cancel the permanent magnet inside causing instability. We strongly recommend to use the reference circuit to avoid major issues. We offer pushbutton elevation driver for verifications or convenient income inspection.

Latching type

Application Note: Applying a constant driving voltage increases stability. The switches can also be driven by a pulse mode using Agiltron recommended circuit for energy saving.

Optical Path	Electrical Drive		Status Sensor
	Pin 1	Pin 4	Pin 2-3
1→1′, 2→2′, 3→3′, 4→4′ 11→11′, 12→12′, 13→13′, 14→14′ 5→8′, 6→7′, 7→6′, 8→5′ 15→18′, 16→17′, 17→16′, 18→15′	GND	5V	Open
1→4′, 2→3′, 3→2′, 4→1′ 11→14′, 12→13′, 13→12′, 14→11′ 5→5′, 6→6′, 7→7′, 8→8′ 15→15′, 16→16′, 17→17′, 18→18′	5V	GND	Close

Non-Latching type

Optical Path	Electrical Drive		Status Sensor
	Pin 1	Pin 4	Pin 2-3
1→1′, 2→2′, 3→3′, 4→4′ 11→11′, 12→12′, 13→13′, 14→14′ 5→8′, 6→7′, 7→6′, 8→5′ 15→18′, 16→17′, 17→16′, 18→15′	No Power		Open
1→4′, 2→3′, 3→2′, 4→1′ 11→14′, 12→13′, 13→12′, 14→11′ 5→5′, 6→6′, 7→7′, 8→8′ 15→15′, 16→16′, 17→17′, 18→18′	5V	GND	Close

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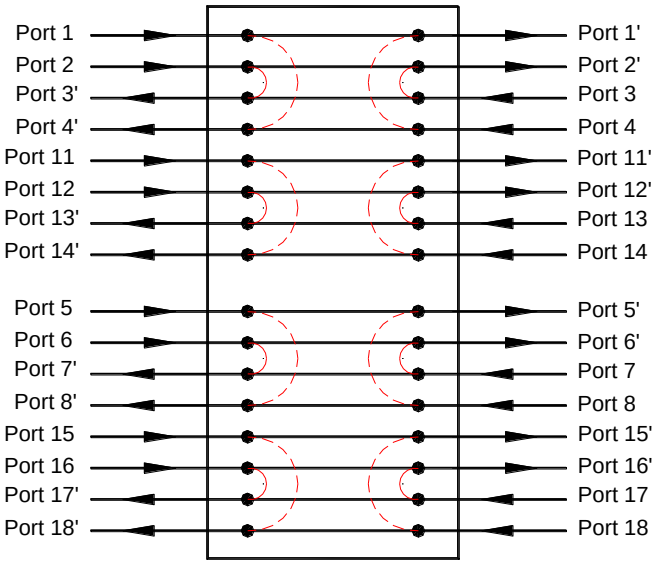
Functional Diagram



LB Octo Full 2x2 MM Switch

Ordering Information

LOFM*-	☐☐	☐	☐	☐	☐	☐	☐	☐
	Type	Wavelength	Switch	Package	Fiber Type		Fiber Length	Connector
	2x2=22 Special=00	1310=3 1550=5 850=8 850/1310=A Special=0	Latching=1 Non-Latching=2 Special=0	Standard=6 Special=0	50/125=5 62.5/125=6 OM4=7 Special=0	Bare fiber=1 900um 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=7 Duplex LC=8 MTP=9 Special=0

* **LOFM**: LightBend **O**cto **F**ull **M**ultimode Switch.

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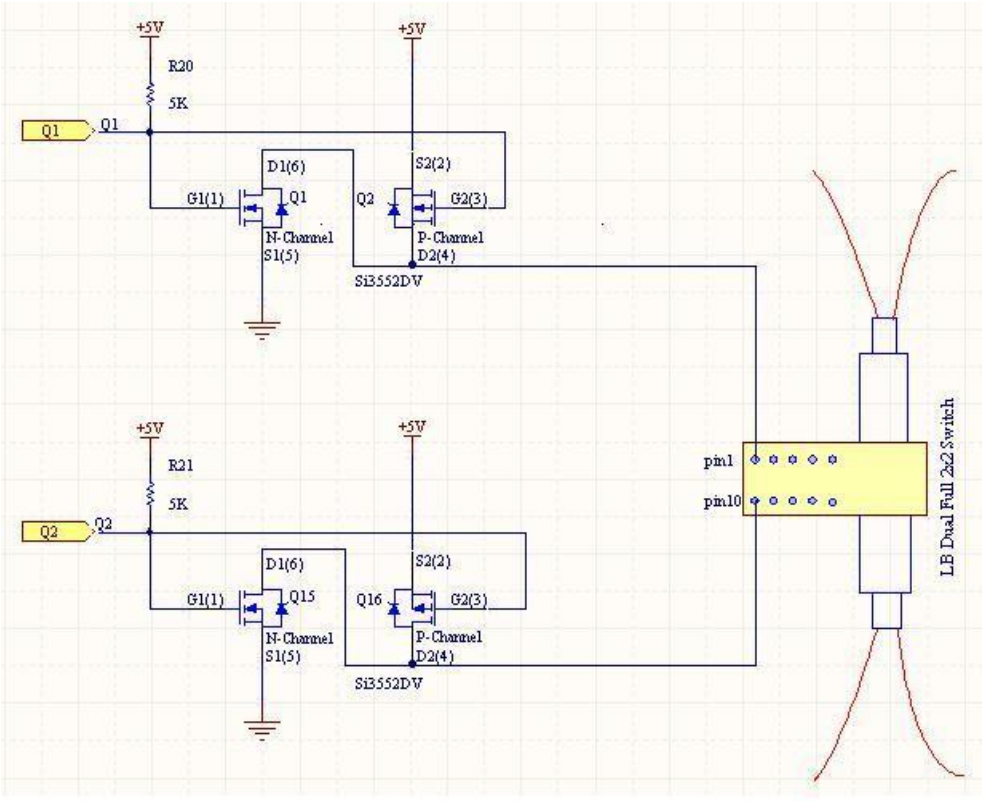
Driver Reference Design



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