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PHOTONWARES

LightBend™ Dual 2x2 Bypass Multimode Fiberoptic Switch

(Bidirectional)

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

Product Description

The LB Dual 2x2 Bypass Multimode Fiberoptic switch is a highly integrated single device with 8 fiber ports. Based on an Agiltron's pending patent, the switch is designed especially for protection and restoration applications. The switch is activated by a 5V pulse between two states, and the latching operation preserves the selected optical path after the drive signal has been removed. The switch has integrated electrical contact based position sensors. The simple design significantly reduces moving part position sensitivity, offering unprecedented high stability as well as an unmatched low cost. Electronic driver is available for this series of switches. 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
- 8 Ports Integration
- High Isolation
- High Reliability
- Fail-Safe Latching
- Epoxy-Free Optical Path
- Low Cost

Applications

- Protection
- Instrumentation

Performance Specifications

LB Dual 2x2 Bypass Switch	Min	Typical	Max	Unit
Wavelength		850 ,1310 , 1410 ,1550		nm
Insertion Loss [1, 2, 3]		0.7	1.0	dB
Wavelength Dependent Loss			0.25	dB
Return Loss [1, 2, 3]	35			dB
Cross Talk [1]	35			dB
Switching Time		3	10	ms
Repeatability			±0.02	dB
Durability	10^7			Cycles
Operating Optical Power		300	500	mW
Operating Voltage	4.5	5	6	V DC
Operating Current (Latching/Non-Latching)		30	60	mA
Switching Type		Latching / Non-Latching		
Operating Temperature		0 ~ 70		°C
Optical Power Handling [4]		300	500	mW
Storage Temperature		-40 ~ 85		°C
Package Dimension		30.0L x 30.0W x 8.5H		mm

Notes:

1. Within operating temperature and with light source CPR <14dB.
2. Excluding Connectors.
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.

RoHS Compliant

Revised on 5/2/21
(Click here for latest revision)

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

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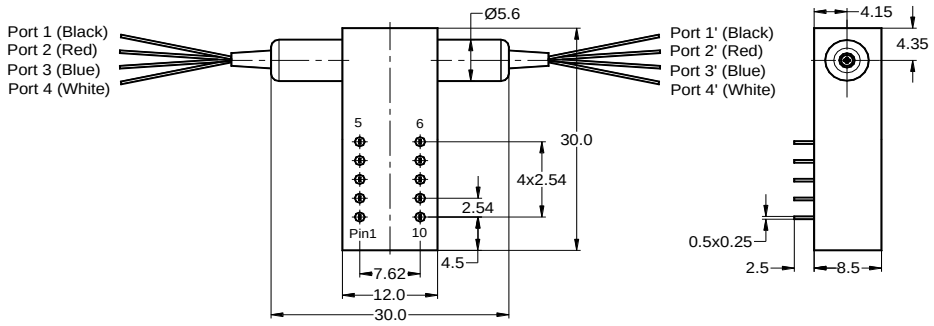
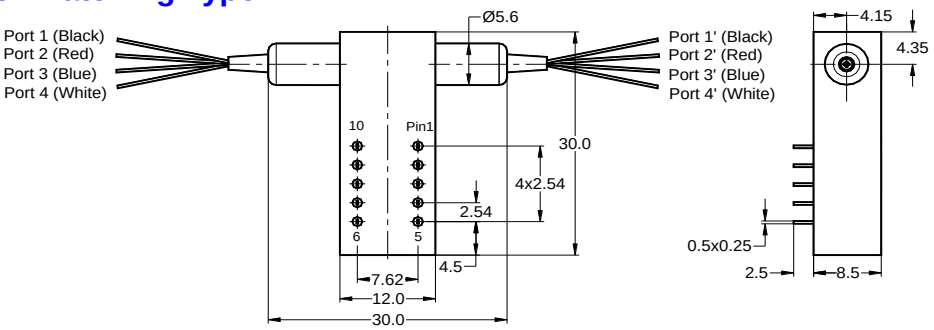
Mechanical Dimensions (Unit: mm)

Latching Type



Non-Latching Type



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

Electrical Connector Configurations

The load is a resistive coil which is activated by applying 5V (draw ~ 40mA). Applying too long pulse for the latching version will heat up the device. Agiltron offers a computer control kit with TTL and USB interfaces and Windows™ GUI. We also offer RS232 interface as an option – please contact Agiltron sales.

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	Electric Drive				Status Sensor			
	Pin 1	Pin10	Pin5	Pin6	Pin2-3	Pin3-4	Pin7-8	Pin8-9
Port 1--1', Port 2--2' Port 3--3', Port 4--4'	GND	5V	N/A	N/A	Close	Open	Open	Close
Port 1--3', Port 2--4'	5V	GND	N/A	N/A	Open	Close	Close	Open

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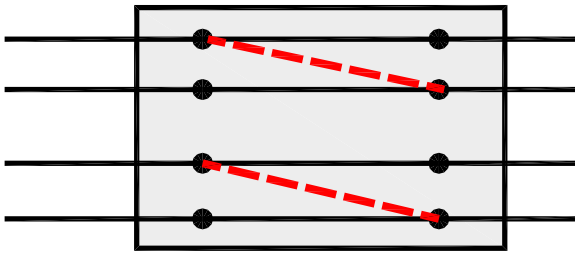
Non-Latching Type

Optical Path	Electric Drive				Status Sensor			
	Pin 1	Pin10	Pin5	Pin6	Pin2-3	Pin3-4	Pin7-8	Pin8-9
Port 1--1', Port 2--2' Port 3--3', Port 4--4'	5V	GND	N/A	N/A	Open	Close	Close	Open
Port 1--3', Port 2--4'	No Power		N/A	N/A	Close	Open	Open	Close

Functional Diagram



LB Dual 2x2 Bypass Switch

Ordering Information

LBSW-	4 2	☐	☐	1	☐	☐	☐	☐
	Type	Wavelength	Switch	Package	Fiber Type		Fiber Length	Connector
	Special=00	1060=1 C+L= 2 1310=3 1410=4 1550=5 650=6 780=7 850=8 1310 & 1550=9 850 & 1310=A Special=0	Single coil Latching=2 Non-latching=3 Special=0		Multimode 50/125=5 Multimode 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 Special=0

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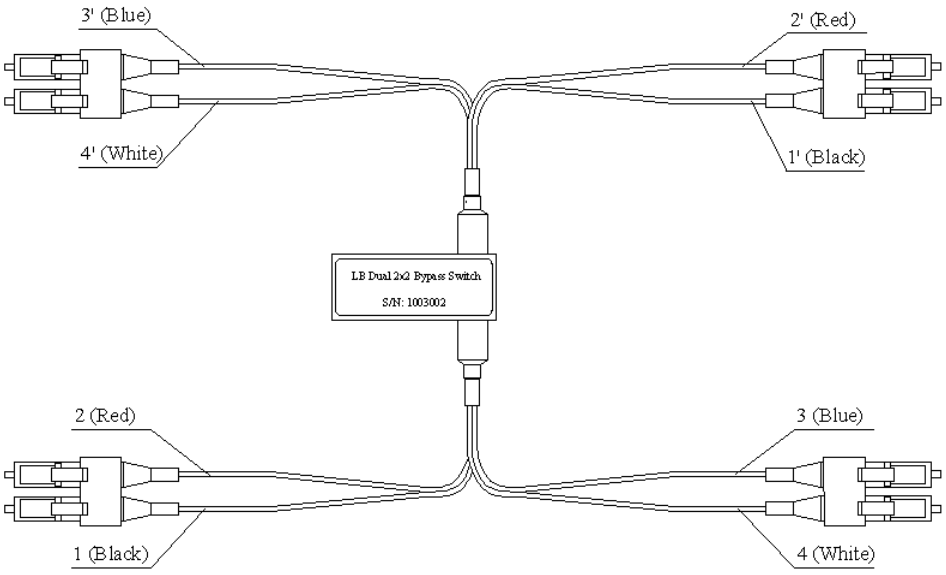
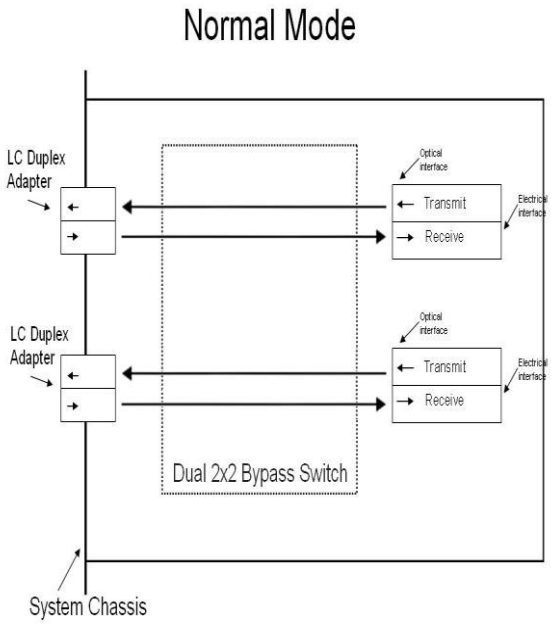
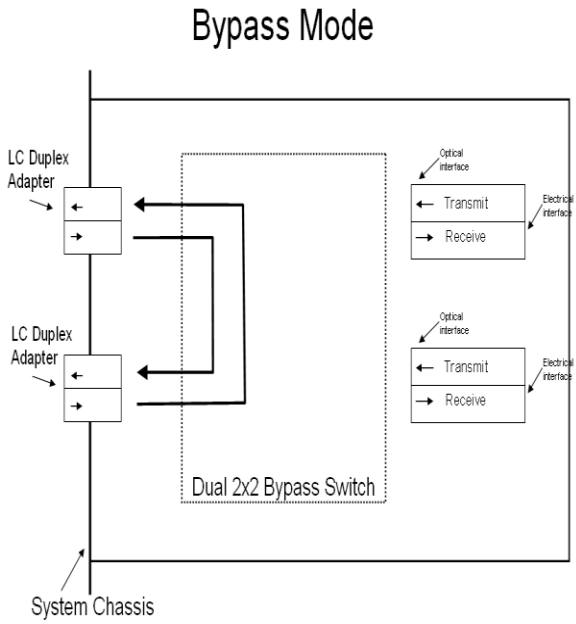
Application

Prepared with 4 duplex LC connectors and customized fiber length for convenient installation







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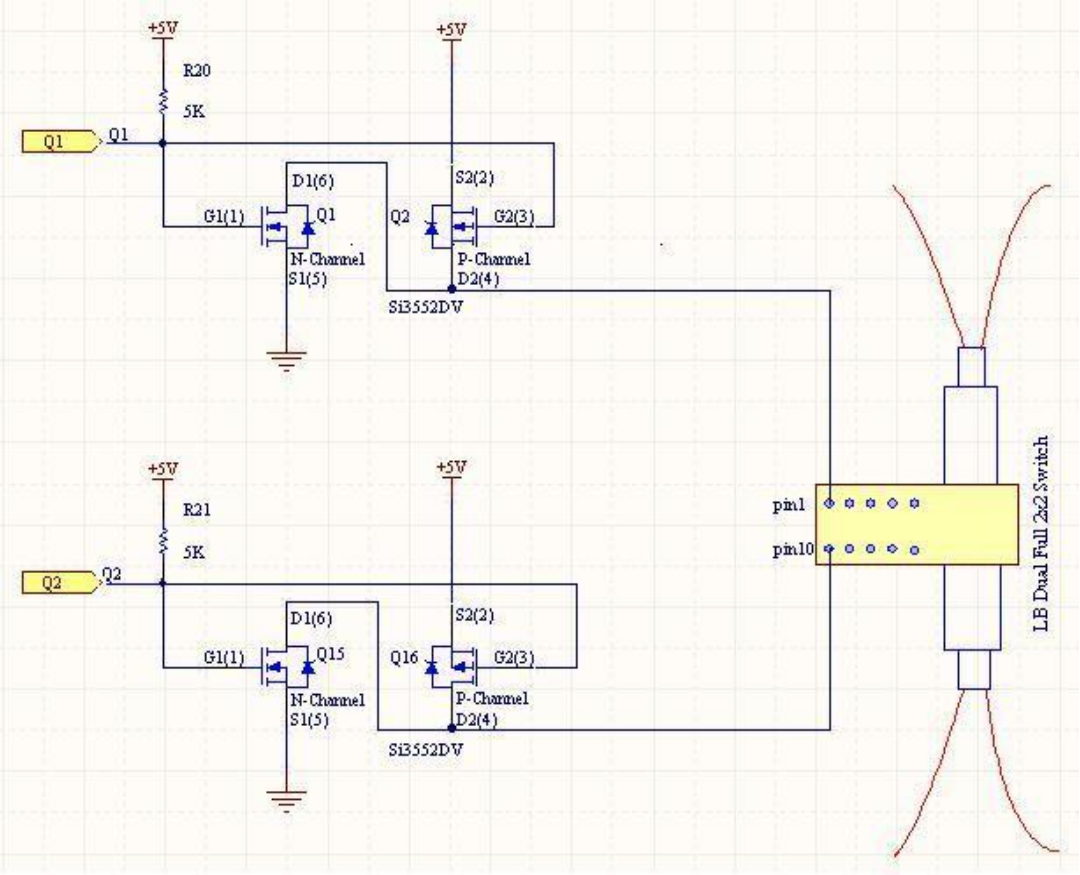
Driver Reference Design



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