

CrystaLatch™ Bi-directional 1x4 Solid State Fiberoptic Switch

(Protected by U.S. patents 7224860, 6757101, 6577430 and pending patents)

Product Description

The CL Series bi-directional 1x4 solid-state fiber optical switch connects optical channels by redirecting an incoming optical signal into a selected output fiber. This is achieved using patented non-mechanical configurations and activated via an electrical control signal. Latching operation preserves the selected optical path after the drive signal has been removed. These switches are true bidirectional allowing light propagating in both directions simultaneously, a critical feature for sensing applications. Agiltron non-mechanical CL fiberoptic switch features low insertion loss, fast response time, high extinction ratio, and extremely high reliability and repeatability. It is designed to meet the most demanding switching requirements of continuous operation without wear-out, longevity without fail, and live operation under vibration/shock. Electronic driver is available for this series of switches.



Performance Specifications

CL Series 1x4 BD Switch		Min	Typical	Max	Unit
Operation Wavelength ¹		1520	1550	1580	nm
		1295	1310	1325	nm
Insertion Loss ²	Single Stage		1.0	1.5	dB
	Dual Stage		1.2	1.7	
Cross Talk	Single stage	18	25	30	dB
	Dual Stage	35	50	55	
Switch Speed (Rise, Fall)		20	50	200	μs
Repetition Rate			2K		Hz
Durability			10 ¹¹		cycle
Polarization Dependent Loss			0.1	0.25	dB
Polarization Mode Dispersion			0.1	0.2	ps
Return Loss ²		50	55		dB
Operating Temperature ³		-5		70	°C
Optical Power Handling ⁴			300	500 ^b	mW
Storage Temperature		-40		85	°C
Fiber Type	Corning SMF-28				
Package Dimension		53.5L x 38.3W x 8.5H			mm

1. Agiltron can achieve same SPEC at L band.
2. Exclude connectors.
3. -40°C version is also available.
4. High power version available.
5. Continuous operation, for pulse operation call.

Features

- Solid-State High Speed
- Non-Mechanical
- Ultra-High Reliability
- Fail-Safe Latching
- Low Insertion Loss
- Direct Low Voltage Drive
- Compact
- Vibration Tolerance
- Low Cost

Applications

- Optical Signal Routing
- Network Protection/Restoration
- Burst Switching
- Configurable Add/Drop
- Signal Monitoring
- Instrumentation

CrystaLatch™ Bi-directional 1x4 Solid State Fiberoptic Switch

Electrical Driving Information

The switch is actuated by applying a voltage pulse. Applying one polarity pulse, one light path will be connected and latched to the position. Applying a reversed polarity pulse, another light path will be connected and latched to the position after pulse removed.

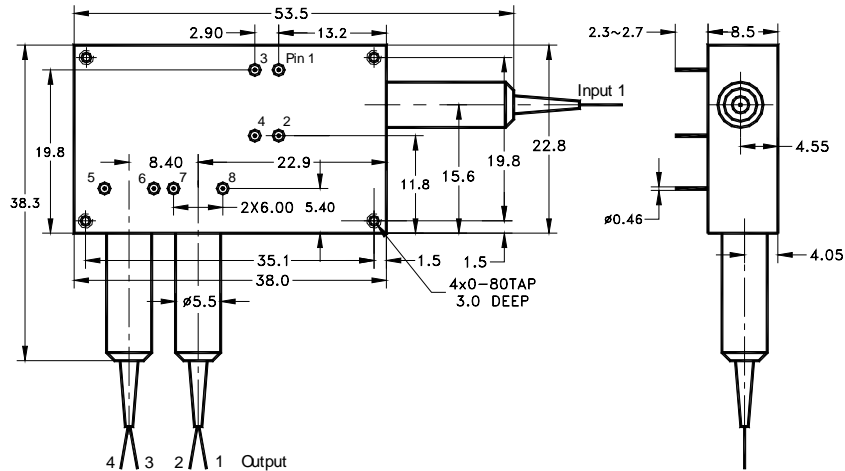
Parameter	Minimum	Typical	Maximum	Unit
Resistance (each group)	15	18	22	Ω
Switch Voltage	2.5		3	V
Pulse Duration	0.1	0.2	2	ms

Driving kit with RS232 and TTL interfaces and Windows™ GUI is available

Optical Path	Pin Group 1		Pin Group 2		Pin Group 3		Pin Group 4	
	1	2	3	4	5	6	7	8
Input → Output 1	+	-	+	-	-	+	+	-
Input → Output 2	-	+	-	+	-	+	+	-
Input → Output 3	+	-	-	+	+	-	-	+
Input → Output 4	-	+	+	-	+	-	-	+

"+": 2.5~3.0V Pulse; "-": Ground.

Mechanical Footprint Dimensions (mm)



Ordering Information

CLBD-	Type	Wavelength	Switch	Package	Fiber Type	Fiber Length	Connector	
1 4		1310=3 1550=5	Single stage=1 Dual Stage=2	2	SMF-28=1 Special=0	Bare fiber=1 900µm loose 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