Eco Series Optical Fiber Switch

OFMS Eco Series

Product Description

Oplink's Eco series optical fiber switches unify different switch configurations of 1x1, Dual 1x1, Quad 1x1, 1x2, 2x2Add/Drop, Full2x2, Dual 1x2, Dual 2x2Add/Drop and Dual Full2x2 onto the same package, providing the same PCB-direct-mountable footprint.

The switches are built based on Oplink's optical switch patents (Patents US 6215919, US 6873757, China ZL03145439.9). They are designed for network protection, fiber monitoring applications.

Oplink can provide customized designs to meet specialized feature applications. Also, Oplink offers modular assemblies that integrate other components to form a full function module or subsystem.



Performance Specification

Parameters		1x1 1x2	Dual 1x1 Dual 1x2 2x2 A/D Full 2x2	Quad 1x1 Dual 2x2 A/D Dual Full 2x2	Unit
Operating Wavelength Range (Single-mode)		1260~1360 and/or 1510~1610			nm
Operating Wavelength Range (Multimode)		770~890 and/or 1260~1360			nm
Insertion Loss (Single-mode) [1]	Single Window	≤0.5	≤0.7	≤1.1	dB
	Dual Window	≤0.7	≤0.9	≤1.4	
Insertion Loss (Multimode) [2]		≤1.0	≤1.2	≤2.0	dB
PDL (Single-mode)		≤0.1			dB
Return Loss	Single-mode	≥50			dB
	Multimode	≥30			
Cross-talk	Single-mode	≥55	≥55	≥50	dB
	Multimode	≥35	≥30	≥30	
Repeatability		≤ ±0.02			dB
Switching Time		≤10			ms
Operating Voltage [3]	Latching	5±10%			V
	Non-latching	5±10%			
Coil Resistance	Latching	250±10%			Ω
	Non-latching	178±10%			
Switching Cycle Rate		≤10			Hz
Durability		≥10^6			cycles
Optical Power Rating		≤500			mW
Switch Type		Non-latching or Latching			
Fiber Type	Single-mode	SMF-28 or equivalent			
	Multimode	50/125μm or 62.5/125μm multimode fiber			
Operating Temperature		0~70			°C
Operating Relative Humidity		5~95			%RH
Storage Temperature		-40~85			°C
Storage Relative Humidity		5~95			%RH

Features

- Wide λ range, low IL & crosstalk
- One footprint for all configurations
- Latching and non-latching options
- Compact and direct PCB mounting

Applications

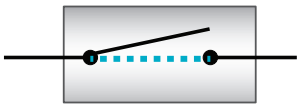
- Network optical protection
- Network monitoring (use members in Oplink switch family w/ ≥10M durability where frequent switching is needed)
- Instrument, testing and measurement

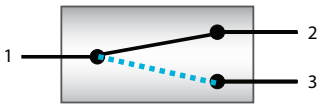
Notes:

1) Exclude connector loss. IL @23 °C, 1310 and/or 1550nm and all SOP. Add 0.5 dB (max) to for Quad 1x1, Dual 2x2 A/D, Dual Full 2x2 and 0.3dB (max) for others type for over operating temperature and wavelength ranges.
2) Based on FOT-34 method A, steady state equilibrium launch conditions.
3) Driving voltage pulse duration shall ≥20ms.

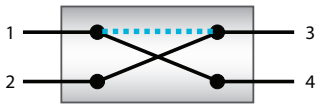
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Function Diagram

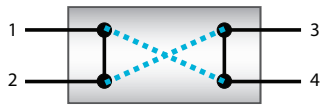

1x1



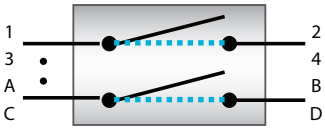
1x2



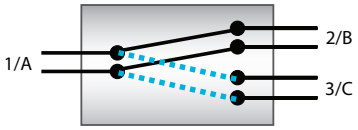
2x2 Add/Drop



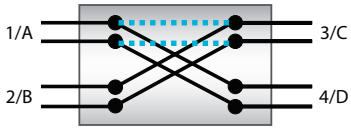
Full 2x2



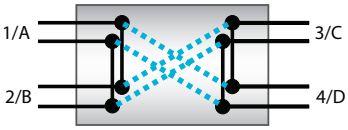
2~4ch 1x1



Dual 1x2



Dual 2x2 Add/Drop

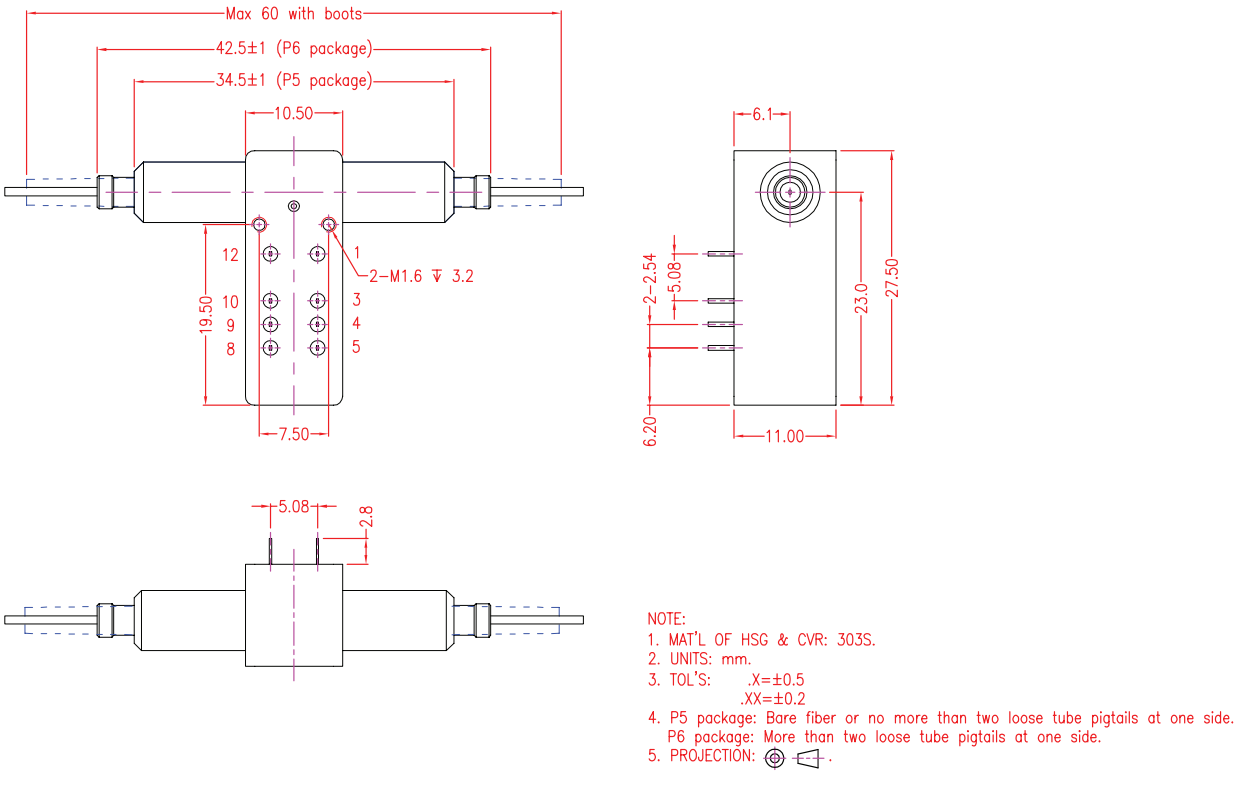


Dual Full 2x2

Electrical Pin Configuration

Optical Path					Drive		Status			
1x1, Dual 1x1, Quad 1x1	**1x2, Dual 1x2**	**2x2AD, Dual 2x2AD**	**Full 2x2, Dual Full 2x2**	**Pin #**	**1**	**12**	**4-3**	**4-5**	**9-8**	**9-10**
Thru	1/A↔2/B	1/A↔4/D 2/B↔3/C	1/A↔4/D, 2/B↔3/C	**Latching**	+V	GND	Open	Close	Close	Open
				Non-latching	+V	GND				
Block	1/A↔3/C	1/A↔3/C	1/A↔2/B, 3/C↔4/D	**Latching**	GND	+V	Close	Open	Open	Close
				Non-latching	-	-				

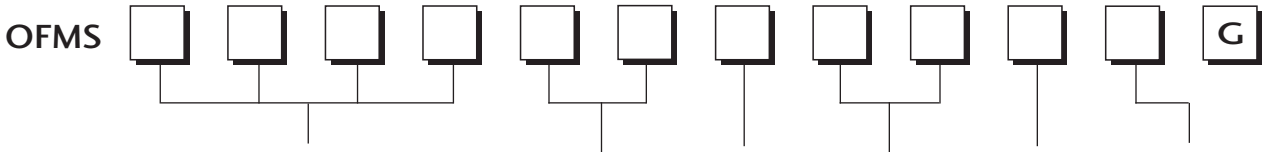
Mechanical Drawing / Package Dimensions (dimension in mm)



NOTE:
1. MAT'L OF HSG & CVR: 303S.
2. UNITS: mm.
3. TOL'S: .X=±0.5
   .XX=±0.2
4. P5 package: Bare fiber or no more than two loose tube pigtails at one side.
   P6 package: More than two loose tube pigtails at one side.
5. PROJECTION: .

Ordering Information

Oplink can provide a remarkable range of customized optical solutions. For detail, please contact Oplink's OEM design team or account manager for your requirements and ordering information (510) 933-7200.



Type

1x1 = 1100
Dual 1x1 = 11DU
Quad 1x1 = 11QU
1x2 = 1200
Dual 1x2 = 12DU
2x2 Add/Drop = 22AD
Dual 2x2 Add/Drop = 22DU
Full 2 x 2 = 2200
Dual Full 2x2 = 22FU

Switch Type

Latching = 0
Non-latching = 1

Fiber Length

0.5 meter = H
1.0 meter = 1
1.5 meters = 5
2.0 meters = 2

Connector Type

None = 1
FC/PC = 2
FC/SPC = 3
FC/APC = 4
SC/PC = 5
SC/SPC = 6
SC/APC = 7
ST = 8
LC/PC = 9
MU = A
LC/APC = B

Wavelength

1310nm SM = 3S
C+L bands SM = ES
1310/1550nm SM = DS
850nm MM = 8M
1310nm MM = 3M
850/1310nm MM = DM

Package Type

P5, SM bare fiber = 51
P5, 50µm MM bare fiber = 52
P5, 62.5µm MM bare fiber = 53
P5, SM fiber w/ loose tube = 54
P5, 50µm MM fiber w/ loose tube = 55
P5, 62.5µm MM fiber w/ loose tube = 56
P6, SM fiber w/ loose tube = 61
P6, 50µm MM fiber w/ loose tube = 62
P6, 62.5µm MM fiber w/ loose tube = 63

* The tolerance of fiber length is +/-0.1m.
* 1 meter is standard. The lead time for special fiber length will be longer.

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