# MEMS MULTI-MODE 1XN OPTICAL SWITCH

WITH EXTERNAL PCB

DiCon's MEMS Multi-mode 1xN Switch provides channel selection between a single input fiber and N output fibers. At the core of the switch is DiCon's proprietary MEMS chip; an electrostatically driven mirror implemented using single-crystalline silicon and a stiction-free design. The mirror is capable of rotating on two axes, allowing the input light to be redirected back to any desired output in a 2D plane. The switch is bi-directional and can be used as a Nx1 selector switch.
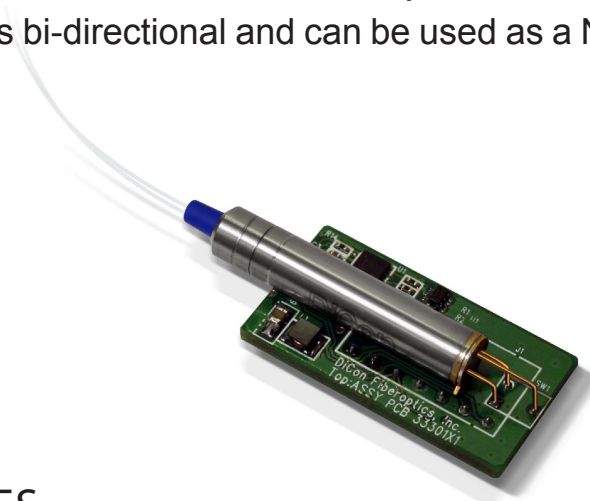
FEATURES

- Drop-in Replacement for DIP Option
- Proven MEMS Durability and Reliability
- Compact Form Factor
- Fast Switching Time
- TTL Parallel or I²C Serial Control Interface
- Qualified to GR-1221

APPLICATIONS

- Optical Communications
- Fiber Sensing
- Bio-medical Instrumentation
- Video Distribution

DiCon

FIBEROPTICS

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OPTICAL SPECIFICATIONS[1]

PARAMETER		RATING
Insertion Loss[2,3]	1x2, 1x4	1.0 dB max.
	1x6, 1x8	1.2 dB max.
Crosstalk[4]	50 um	-25 dB max.
	62.5 um	-20 dB max.
Back Reflection		-20 dB max.
TDL		0.30 dB max.
Repeatability[5]		0.02 dB max.
Optical Power		500 mW max.
Durability		10^9 cycles min.
Switching Time	1x2, 1x4	20 ms max.
	1x6, 1x8	30 ms max.
Operating Temp		-5 to 70°C
Storage Temp		-40 to 85°C
Fiber Type		Multi-mode, Bare Fiber

1. Specifications are without connectors.
2. IL is measured at CWL, 23°C.
3. IL is for single-band. Dual-band adds 0.3dB.
4. Power off isolation is same as crosstalk.
5. Repeatability is defined after 100 cycles.

ORDERING INFORMATION

MSP - ☐ - ☐ - ☐ - ☐ - ☐ - ☐

Product Code

MSP   MEMS Switch
with PCB

Switch Configuration

1xN   1xN Switch
Specify N≤8 for 50μm or N≤4 for 62.5μm

Control Interface

TTL   TTL
I2C   I²C

Wavelength Range

8   850 nm only
9   980 nm only
8/13   850 & 1310 nm

Fiber and Jacket Type

50/BF   50um core, bare fiber
62/BF   62.5um core, bare fiber

Connector Type

FC/SPC FC/SPC
FC/APC FC/APC
N   NONE
Also Available: SC, SC/UPC, SC/APC, ST, ST/UPC, LC

Pigtail Length

1   1 Meter
X   Specify X Meters
Tolerance is +/- 0.05 m

MECHANICAL DIMENSIONS
(Units: mm)
Top View

End View
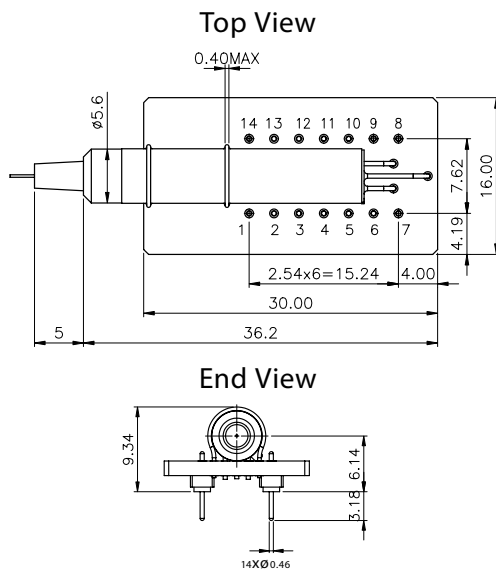
ELECTRICAL SPECIFICATIONS

PARAMETER	RATING
Latching Type	non-latching
Control Type	I²C and TTL
Vcc Voltage	12 VDC
Power Consumption	170 mW max.
Vcc Damage Threshold	15 VDC

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