# MULTI-MODE MEMS 1X4 SWITCH

DiCon's Multi-Mode (MM) MEMS 1x4 is based on a micro-electro-mechanical system (MEMS) chip. The MEMS chip consists of an electrically moveable mirror on a silicon support. A voltage applied to the MEMS chip causes the mirror to rotate, which changes the coupling of light between a common fiber and four input/output fibers. The MM MEMS 1x4 Switch is a non-latching device, which acts as a shutter when electrical power is removed.
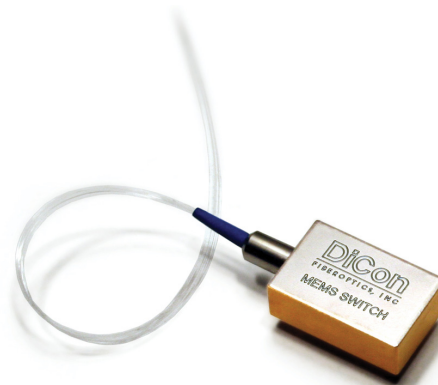
FEATURES

- Small optical switch package
- Based on DiCon's proven MEMS platform
- TTL parallel or SMBus/I^{2}C serial control interface
- Available in both 50μm and 62.5μm core MM fiber

APPLICATIONS

The MM MEMS 1x4 Switch is used in fiber sensing and monitoring, secure communications, and bio-medical and scientific research. Excellent reliability, repeatability and temperature performance makes the MM MEMS 1x4 switch ideal for temperature and environmental sensing equipment.

DiCon
FIBEROPTICS, INC

MULTI-MODE MEMS 1x4 SWITCH

OPTICAL SPECIFICATIONS[1]

PARAMETER		RATING
Insertion Loss[2,3]	850 nm	0.8 dB max.
	850/1310 nm	1.2 dB max.
Crosstalk	50 um	-25 dB max.
	62.5 um	-20 dB max.
Back Reflection		-20 dB max.
Switching Time[4]		15 ms max.
TDL		0.2 dB max.
Repeatability[5]		0.02 dB max.
Durability		10^9 cycles min.
Optical Power		500 mW 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 specified wavelength, 23°C.
3. IL is for standard opaque model.
4. Power off isolation is same as crosstalk.
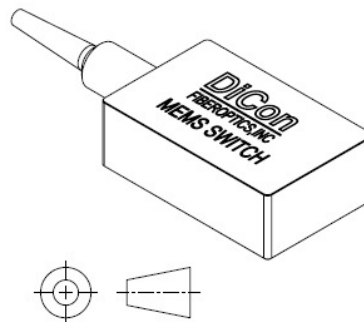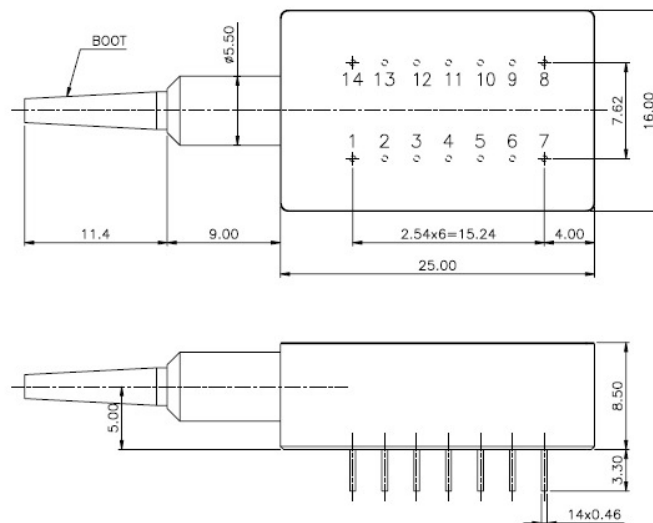5. Repeatability is defined after 100 cycles.

MECHANICAL DIMENSIONS
(Units: mm)

Top 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

ORDERING INFORMATION

MS1 - 1x4 - ☐ - ☐ - ☐ - ☐ - ☐

Product Code
MS1   MEMS Switch

Switch Configuration
1x4   1x4 Switch

Control Interface
TTL   TTL
I2C   I²C

Wavelength Range
8   850 nm only
8/13   850 & 1290 - 1330 nm
Other wavelengths available upon special request

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

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

Fiber and Jacket Type
50/BF   50um core, bare fiber
62/BF   62.5um core, bare fiber

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