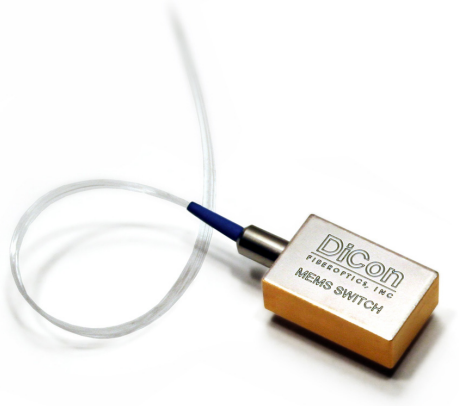
MEMS 1X4 SWITCH

DiCon's MEMS 1x4 is based on a micro-electromechanical 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 MEMS 1x4 Switch is a non-latching device, which can act 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^2C serial control interface
- Qualified to Telecordia GR-1221
- Transparent and Opaque versions available

APPLICATIONS

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

DiCon FIBEROPTICS

MEMS 1X4 SWITCH

OPTICAL SPECIFICATIONS[1,2]

PARAMETER		RATING
Insertion Loss[3,4]	Single-Band	0.7 dB max.
	Dual-Band	0.8 dB max.
Crosstalk		-50 dB max.
Back Reflection		-50 dB max.
Switching Time		20 ms max.
TDL		0.30 dB max.
WDL[5]		0.20 dB max.
PDL		0.10 dB max.
Repeatability[6]		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		9/125 μm single mode

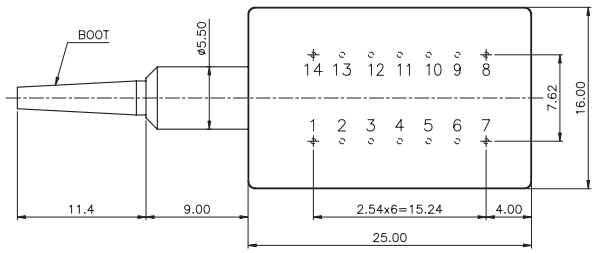
1. Specifications are without connectors.
2. Specifications are guaranteed in defined switch states only.
3. IL is measured at CWL, 23°C.
4. Loose tube option adds 0.1 dB.
5. WDL is measured in a +/- 20nm range at 23°C.
6. Repeatability is defined after 100 cycles.

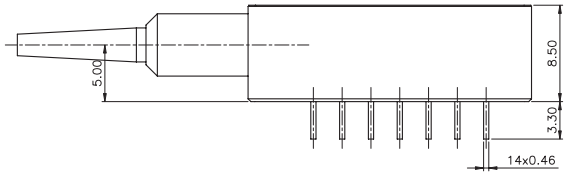
MECHANICAL DIMENSIONS

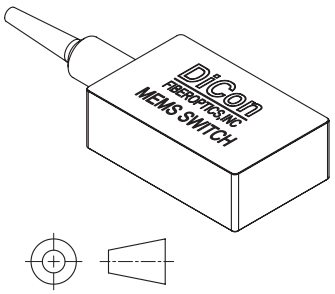
(Units: mm)

Top View

Bare Fiber







ORDERING INFORMATION

MS1 - 1x4 - □ - □ - □ - □ - □

Product Code

MS1 MEMS Switch

Switch Configuration

1x4 1x4 Switch

Control Interface

TTL TTL
I2C I²C

Wavelength Range

13 1290 - 1330 nm
15 1530 - 1570 nm
16 1570 - 1610 nm
13/15 1290 - 1330 & 1530 - 1570 nm
15/16 1530 - 1570 & 1570 - 1610 nm

Fiber and Jacket Type

9/BF Corning SMF-28, bare fiber
9/LT Corning SMA-28, 900μm loose tube

Or other equivalent 9μm Singlemode 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

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

Loose Tube