

# MEMS 1xN OPTICAL ARRAY SWITCH

DiCon's MEMS 1xN Optical Array Switch provides channel selection between sets of single input fibers and sets of N output fibers. The module allows up to five MEMS switch components to be co-packaged with the option of switching synchronously. At the core of each switch component 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 space. The array switch is bi-directional and can be used as a Nx1 selector switch.



## FEATURES

- Proven MEMS Durability and Reliability
- Compact Form Factor
- Fast Switching Time
- Optional Synchronous Switching

## APPLICATIONS

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



# MEMS 1xN OPTICAL ARRAY SWITCH

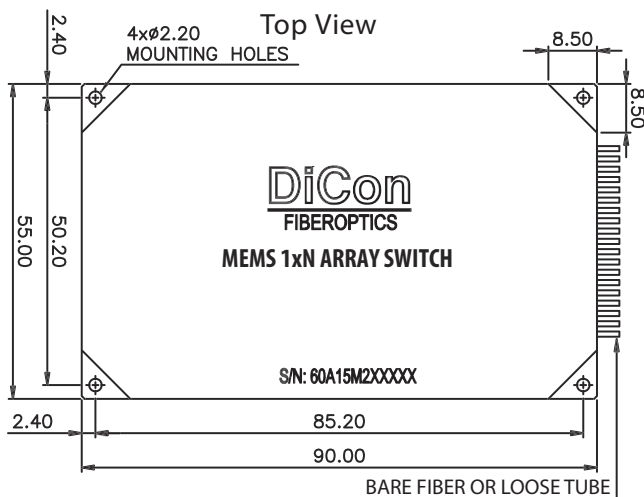
## OPTICAL SPECIFICATIONS<sup>1</sup>

PARAMETER		RATING
Insertion Loss	$2 \leq N \leq 8$	0.8 dB max.
Loss <sup>2,3,4</sup>	$8 < N \leq 12$	1.2 dB max.
Crosstalk <sup>5</sup>		-50 dB max.
Back Reflection		-50 dB max.
Switching Time		30 ms max.
TDL		0.30 dB max.
WDL <sup>6</sup>		0.20 dB max.
PDL <sup>7</sup>		0.10 dB max.
Repeatability <sup>8</sup>		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 $\mu$ m single mode

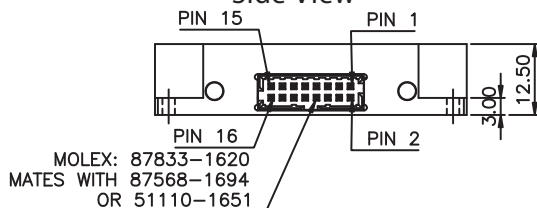
- Specifications are without connectors.
- IL is measured at CWL, 23°C.
- IL is for standard opaque model.
- IL is for single-band. Dual-band adds 0.1 dB.
- Power off isolation is same as crosstalk.
- WDL is measured in a +/- 20nm range at 23°C.
- PDL is for single-band. Dual-band adds 0.05 dB.
- Repeatability is defined after 100 cycles.

## MECHANICAL DIMENSIONS

(Units: mm)



Side View



## ORDERING INFORMATION

MS2 - M/1xN -  -  -  -  -

### Product Code

MS2 MEMS Switch

### Switch Configuration

M/1xN M 1xN Array Switch  
(Specify M≤5, N≤12  
such that M+M\*N≤27)

### Control Interface

I2C I<sup>2</sup>C  
RS2 RS232

### 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 SMF-28, Loose-tube

*Or other equivalent 9 $\mu$ m Singlemode fiber*

### Connector Type

FC FC/SPC  
FC/APC FC/APC  
N NONE

*Also Available: SC, SC/UFC, SC/APC,  
ST, ST/UFC, LC*

### Pigtail Length

1 1 Meter  
X Specify X Meters

*Tolerance is +/- 10 cm*

## ELECTRICAL SPECIFICATIONS

PARAMETER	RATING
Latching Type	non-latching
Control Type	I <sup>2</sup> C or RS232
Vcc Voltage	12 VDC
Power Consumption	700 mW max.
Connector Type	Molex 87833-1620