MEMS MULTI-MODE 1XN OPTICAL SWITCH
WITH MLC 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

- 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
### OPTICAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>PARAMETER</th>
<th>RATING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insertion Loss w/ LED</td>
<td>1.4 dB max.</td>
</tr>
<tr>
<td>Crosstalk</td>
<td>-25 dB max.</td>
</tr>
<tr>
<td>Back Reflection</td>
<td>-20 dB max.</td>
</tr>
<tr>
<td>TDL</td>
<td>0.30 dB max.</td>
</tr>
<tr>
<td>Repeatability</td>
<td>0.02 dB max.</td>
</tr>
<tr>
<td>Optical Power</td>
<td>500 mW max.</td>
</tr>
<tr>
<td>Durability</td>
<td>10⁹ cycles min.</td>
</tr>
<tr>
<td>Switching Time</td>
<td>30 ms max.</td>
</tr>
<tr>
<td>Operating Temp</td>
<td>-5 to 70°C</td>
</tr>
<tr>
<td>Storage Temp</td>
<td>-40 to 85°C</td>
</tr>
<tr>
<td>Fiber Type</td>
<td>Multi-mode, Bare Fiber</td>
</tr>
</tbody>
</table>

1. Specifications are without connectors.  
2. The IL specification is defined with an LED source for full mode fill condition measured at CWL at 23°C +/- 5°C. The IL will be lower if measured using an under filled mode condition. For example the IL measured with a VCSEL source is about 0.4 dB typically.  
3. IL is for single-band. Dual-band adds 0.3dB.  
4. Power off isolation is same as crosstalk.  
5. Repeatability is defined with in 100 cycles.

### MECHANICAL DIMENSIONS

(Unit: mm)

![Mechanical Dimensions Diagram]

### ELECTRICAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>PARAMETER</th>
<th>RATING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Latching Type</td>
<td>non-latching</td>
</tr>
<tr>
<td>Control Type</td>
<td>I²C or TTL</td>
</tr>
<tr>
<td>Vcc Voltage</td>
<td>12 VDC</td>
</tr>
<tr>
<td>Power Consumption</td>
<td>700 mW max.</td>
</tr>
<tr>
<td>Vcc Damage Threshold</td>
<td>15 VDC</td>
</tr>
</tbody>
</table>

### ORDERING INFORMATION

- **Product Code**
  - MLC MEMS Switch with External PCB

- **Switch Configuration**
  - 1xN 1xN Switch
  - Specify NS12 for 50µm or NS8 for 62.5µm

- **Control Interface**
  - TTL, I²C

- **Wavelength / Source**
  - 8: 850 nm
  - 9: 980 nm
  - 8/13: 850 & 1310 nm

- **Fiber and Jacket Type**
  - 50/BF: 50 µm Core, Bare Fiber
  - 62/BF: 62.5 µm Core, Bare Fiber

- **Connector Type**
  - FC: FC/PC
  - LC: LC/PC
  - SC: SC/PC
  - ST: ST/PC
  - N: NONE

Other connectors available upon request.

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