DiCon’s MEMS 1x2 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 two input/output fibers. The MEMS 1x2 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/I²C serial control interface
- Qualified to Telecordia GR-1221
- Transparent and Opaque versions available

APPLICATIONS

- Optical Communications
- Fiber Optic Sensing
- Bio-medical Instrumentation
- Video Distribution
**MEMS 1X2 SWITCH**

### OPTICAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>PARAMETER</th>
<th>RATING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insertion Loss</td>
<td>0.7 dB max.</td>
</tr>
<tr>
<td>Crosstalk</td>
<td>-50 dB max.</td>
</tr>
<tr>
<td>Back Reflection</td>
<td>-50 dB max.</td>
</tr>
<tr>
<td>Switching Time</td>
<td>15 ms max.</td>
</tr>
<tr>
<td>TDL</td>
<td>0.30 dB max.</td>
</tr>
<tr>
<td>WDL</td>
<td>0.20 dB max.</td>
</tr>
<tr>
<td>PDL</td>
<td>0.10 dB max.</td>
</tr>
<tr>
<td>Repeatability</td>
<td>0.02 dB max.</td>
</tr>
<tr>
<td>Durability</td>
<td>$10^6$ cycles min.</td>
</tr>
<tr>
<td>Optical Power</td>
<td>500 mW 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>9/125 μm single mode</td>
</tr>
</tbody>
</table>

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

### 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 and TTL</td>
</tr>
<tr>
<td>Vcc Voltage</td>
<td>12 VDC</td>
</tr>
<tr>
<td>Power Consumption</td>
<td>170 mW max.</td>
</tr>
<tr>
<td>Vcc Damage Threshold</td>
<td>15 VDC</td>
</tr>
</tbody>
</table>

### ORDERING INFORMATION

**Product Code**

- MS1 - 1x2 MEMS Switch

**Switch Configuration**

- 1x2 1x2 Switch

**Control Interface**

- 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

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