MEMS MULTI-MODE 1XN OPTICAL SWITCH
WITH 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

- Drop-in Replacement for DIP Option
- 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
MEMS MULTI-MODE 1XN OPTICAL SWITCH
WITH EXTERNAL PCB

OPTICAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>PARAMETER</th>
<th>RATING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insertion Loss</td>
<td>1x2, 1x4: 1.0 dB max.</td>
</tr>
<tr>
<td></td>
<td>1x6, 1x8: 1.2 dB max.</td>
</tr>
<tr>
<td>Crosstalk</td>
<td>50 um: -25 dB max.</td>
</tr>
<tr>
<td></td>
<td>62.5 um: -20 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>10⁶ cycles min.</td>
</tr>
<tr>
<td>Switching Time</td>
<td>1x2, 1x4: 20 ms max.</td>
</tr>
<tr>
<td></td>
<td>1x6, 1x8: 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. Aligned transparent to channel 1.
3. IL is measured at CWL, 23°C.
4. IL is for single-band. Dual-band adds 0.3dB.
5. Optical off state isolation is the same as crosstalk.
6. Repeatability is defined within 100 cycles.

MECHANICAL DIMENSIONS
(Units: mm)

Top View

End View

ORDERING INFORMATION

Product Code
MSP - MEMS Switch with PCB

Switch Configuration
1xN
Specify NS8 for 50μm or NS4 for 62.5μm

Control Interface
TTL, I2C

Wavelength Range
850 nm only: 8
980 nm only: 9
8/13: 850 & 1310 nm

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

<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>

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