**1x2 MEMS Optical Switch**

Fiberer's MEMS Optical Switches are based on integrated silicon MEMS technology and are available in 1x1, 1x2, and 2x2 switch architectures. Inside the switch package, both the CMOS/TTL compatible driver. The plastic package is one of the smallest in the industry. It is optimized for low cost production while maintaining highest reliability comparable to a solid-state device. The component is designed to meet Telcordia 1221 quality standards.

### Features
- Reliable
- 0.5 dB insertion loss
- 0.5 ms response time
- Low PDL
- 60 dB crosstalk
- Miniature size
- Latching

### Applications
- Protection Switching
- Reconfiguration
- WDM
- Optical Subsystems
- Array integration

![RoHS Compliant](image)

**Spec and Parameter - Single Mode**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wavelength range</td>
<td>1240~1640</td>
</tr>
<tr>
<td>Insertion loss</td>
<td>&lt; 0.9 typ.0.4dB</td>
</tr>
<tr>
<td>Return loss</td>
<td>&gt;=50 dB typ. 55dB</td>
</tr>
<tr>
<td>Polarization dependent loss</td>
<td>&lt;0.07 typ. 0.03 dB</td>
</tr>
<tr>
<td>Cross talk</td>
<td>&gt;= 60dB typ. 75 dB</td>
</tr>
<tr>
<td>Repeatability</td>
<td>&lt;=0.002dB</td>
</tr>
<tr>
<td>Switch speed</td>
<td>&lt;1ms typ. 0.5ms</td>
</tr>
<tr>
<td>Durabilit</td>
<td>&gt;1billion</td>
</tr>
<tr>
<td>Operating power (optical)</td>
<td>&gt;300mW</td>
</tr>
<tr>
<td>Operation temperature</td>
<td>0~70</td>
</tr>
<tr>
<td>Storage temperature</td>
<td>40~70</td>
</tr>
<tr>
<td>Size (L x W x H)</td>
<td>23.2 x 10.1 x 5.9mm</td>
</tr>
</tbody>
</table>

**Spec and Parameter - Multimode**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wavelength range</td>
<td>600~1700nm</td>
</tr>
<tr>
<td>Insertion loss</td>
<td>typ.0.5dB,max 1.2dB</td>
</tr>
<tr>
<td>Return loss</td>
<td>Typ.45dB, Min 35dB</td>
</tr>
<tr>
<td>Polarization dependent loss</td>
<td>typ.0.03dB,max 0.1dB</td>
</tr>
</tbody>
</table>
Cross talk | Typ. 60dB, Max 40dB
---|---
Repeatability | ≤0.002dB
Switch speed | ≤5ms, max 10ms
Durability | >1 billion
Operating power (optical) | >300mW
Operation temperature | 0~70°C
Storage temperature | -40~70°C
Size (L x W x H) | 23.2 x 10.1 x 5.9mm

**Integrated Driver**

- Operating Voltage: 5+/-0.25 VDC
- Current Consumption: Typ. 1mA, Max 10mA
- Logic Level Low: <0.3VDC
- Logic Level High: >3VDC
- Selection Pulse Width: 10ms

**Pictures**

- [Figure 1: Insertion loss distribution](#)
- [Figure 2: Response time at 1.2 kHz cycling](#)
Figure 3: spectral response over temperature
Figure 4: PDL at different wavelengths

1. 5V supply
2. Ground
3. CR select: 5 V logic level sets cross state
   0 V logic level sets bar state

4. BR select, 5 V logic level 10 ms pulse sets cross state
4. BR select, 5 V logic level 10 ms pulse sets bar state
## Information of Order to offer

<table>
<thead>
<tr>
<th>MSW Switch channel</th>
<th>Latching or Non-Latching</th>
<th>Fiber Type</th>
<th>Fiber Length</th>
<th>Connector</th>
</tr>
</thead>
<tbody>
<tr>
<td>11=1x1</td>
<td>L=Latching</td>
<td>S9=SMF 900um</td>
<td>1=1.0m</td>
<td>NE=None</td>
</tr>
<tr>
<td>12=1x2</td>
<td>N=Non-Latching</td>
<td>M5=MMF 50/125/900um</td>
<td>2=2.0m</td>
<td>FA=FC/APC</td>
</tr>
<tr>
<td>22=2x2</td>
<td></td>
<td>M6=MMF 62.5/125/900um</td>
<td></td>
<td>FC=FC/PC</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>SA=SC/APC</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>SC=SC/PC</td>
</tr>
<tr>
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<td></td>
<td></td>
<td></td>
<td>ST=ST/PC</td>
</tr>
<tr>
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<td></td>
<td></td>
<td></td>
<td>LA=LC/APC</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>LC=LC/PC</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>XX=others</td>
</tr>
</tbody>
</table>

Note: L=Latching, N=Non-Latching, S9=SMF 900um, M5=MMF 50/125/900um, M6=MMF 62.5/125/900um, NE=None, FA=FC/APC, FC=FC/PC, SA=SC/APC, SC=SC/PC, ST=ST/PC, LA=LC/APC, LC=LC/PC, XX=others.