**Features**
- Isolation: >40dB@ 40GHz
- Insertion Loss: 3.5dB@ 40GHz
- Reflective design
- Input/Output: 50 Ohm
- Die Size: 1.0x1.0x 0.1 mm

**Typical Applications**
- TTL compatible driver included
- Fast Switching Speed
- Low Insertion Loss and High Isolation
- Customization available upon request

**Functional Block Diagram**

**Electrical Specifications**
TA = +25°C, Vctl = 0/-5V

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Min.</th>
<th>Typ.</th>
<th>Max.</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
<td>DC-40</td>
<td></td>
<td></td>
<td>GHz</td>
</tr>
<tr>
<td>Insertion Loss</td>
<td>3</td>
<td></td>
<td></td>
<td>dB</td>
</tr>
<tr>
<td>Isolation</td>
<td>45</td>
<td></td>
<td></td>
<td>dB</td>
</tr>
<tr>
<td>Return Loss (ON State)</td>
<td>13</td>
<td></td>
<td></td>
<td>dB</td>
</tr>
<tr>
<td>Input 1dB Compression</td>
<td>22</td>
<td></td>
<td></td>
<td>dBm</td>
</tr>
<tr>
<td>Switching Speed</td>
<td>30</td>
<td></td>
<td></td>
<td>ns</td>
</tr>
</tbody>
</table>
MMS124

GaAs pHEMT MMIC
Reflective Switch
DC-40GHz

Insertion Loss

Isolation

Return Loss

MMS124 REFLECTIVE SWITCH - MMIC DC-40GHz
Pad Description

<table>
<thead>
<tr>
<th>PAD</th>
<th>Function</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>IN</td>
<td>DC coupling 50Ω impedance. IF RF voltage is not 0V, blocking capacitor is required externally.</td>
</tr>
<tr>
<td>3, 6</td>
<td>OUT1, OUT2</td>
<td>DC coupling 50Ω impedance. IF RF voltage is not 0V, blocking capacitor is required externally.</td>
</tr>
<tr>
<td>2, 4, 5, 7</td>
<td>V1, V4, V3, V2</td>
<td>When V1, V3=0V and V2, V4=-5V, then OUT1 is “ON” state and OUT2 is “OFF” state. When V1, V3=-5V and V2, V4=0V, then OUT1 is “OFF” state and OUT2 is “ON” state.</td>
</tr>
<tr>
<td>Die Bottom</td>
<td>GND</td>
<td>Die bottom must be connected to RF/DC ground.</td>
</tr>
</tbody>
</table>
Notes:
1. Die thickness: 100μm
2. Typical bond pad is 100*100 μm²
3. Bond pad metalization: Gold
4. Backside metalization: Gold
5. Backside of the die (GND)
6. No connection required for unlabeled bond pads

Maximum Ratings:
1. RF input power: +24dBm
2. Storage temperature: -65°C to +175°C
3. Operating temperature: -55°C to +85°C