Features

- Passive Type: No DC biasing required
- RF Frequency: 4-8 GHz
- IF Bandwidth: DC-3 GHz
- Conversion Loss: 7 dB
- LO/RF Isolation: 40 dB
- Input P1dB: +12 dBm
- Die Size: 1.5 x 1.5 x 0.1 mm

Typical Applications

- Test Instrumentation
- Microwave Radio & VSAT
- Military & Space
- Telecom Infrastructure
- Fiber Optics

Electrical Specifications

TA = +25°C, IF = 100MHz, LO = +13dBm

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Min.</th>
<th>Typ.</th>
<th>Max.</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>RF Frequency (RF/LO)</td>
<td></td>
<td>4-8</td>
<td></td>
<td>GHz</td>
</tr>
<tr>
<td>IF Frequency (IF)</td>
<td></td>
<td>DC-3</td>
<td></td>
<td>GHz</td>
</tr>
<tr>
<td>Conversion Loss</td>
<td></td>
<td>7</td>
<td></td>
<td>dB</td>
</tr>
<tr>
<td>Isolation “LO to RF”</td>
<td></td>
<td>40</td>
<td></td>
<td>dB</td>
</tr>
<tr>
<td>Isolation “LO to IF”</td>
<td></td>
<td>50</td>
<td></td>
<td>dB</td>
</tr>
<tr>
<td>Isolation “RF to IF”</td>
<td></td>
<td>20</td>
<td></td>
<td>dB</td>
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<tr>
<td>Input 1dB Compression</td>
<td></td>
<td>12</td>
<td></td>
<td>dBm</td>
</tr>
<tr>
<td>Input Third Order Intercept (IIP3)</td>
<td></td>
<td>24</td>
<td></td>
<td>dBm</td>
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</tbody>
</table>
**MMX002**

GaAs HBT MMIC

Mixer 4-8GHz

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**Conversion Gain vs. LO Driver**

![Graph showing conversion gain vs. LO driver frequency.]

**Isolation**

![Graph showing isolation vs. frequency.]

**IF Bandwidth**

![Graph showing IF bandwidth vs. frequency.]

**Input P1dB**

![Graph showing P1dB vs. frequency.]

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MM241PD

GaAs HBT MMIC

0.5 - 18 GHz

V1.0.0

MIXER - MMIC 4-8GHz
Outline Drawing:
All Dimensions in mm

<table>
<thead>
<tr>
<th>Pad Number</th>
<th>Function</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>LO</td>
<td>DC coupling 50Ω Impedance</td>
</tr>
<tr>
<td>2</td>
<td>RF</td>
<td>DC coupling 50Ω Impedance</td>
</tr>
<tr>
<td>3</td>
<td>IF</td>
<td>DC coupling 50Ω Impedance</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: 100um
2. Typical bond pad is 100*100 μm²
3. Bond pad metalization: Gold
4. Backside metalization: Gold
5. Backside of the die is grounded
6. No connection required for unlabeled bond pads

Maximum Ratings:
1. RF/IF input power: +24dBm
2. Local oscillator drive power: +24dBm
3. Storage temperature: -65°C to +150°C
4. Operating temperature: -55°C to +85°C