MM241PD
GaAs pHEMT MMIC
0.5 - 18 GHz
V1.0.0

Features

• Passive Type: No DC biasing required
• RF Frequency: 18-40 GHz
• IF Bandwidth: DC-18 GHz
• Conversion Loss: 10 dB
• LO/RF Isolation: 35 dB
• P1dB: +11 dBm
• Die Size: 1.5 x 1 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 = +15dBm

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Min.</th>
<th>Typ.</th>
<th>Max.</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>RF Frequency (RF/LO)</td>
<td>18-40</td>
<td></td>
<td></td>
<td>GHz</td>
</tr>
<tr>
<td>IF Frequency (IF)</td>
<td>DC-18</td>
<td></td>
<td></td>
<td>GHz</td>
</tr>
<tr>
<td>Conversion Loss</td>
<td>10</td>
<td></td>
<td></td>
<td>dB</td>
</tr>
<tr>
<td>Isolation “LO to RF”</td>
<td>35</td>
<td></td>
<td></td>
<td>dB</td>
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<tr>
<td>Isolation “LO to IF”</td>
<td>35</td>
<td></td>
<td></td>
<td>dB</td>
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<tr>
<td>Isolation “RF to IF”</td>
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<td></td>
<td>dB</td>
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<tr>
<td>Input 1dB Compression</td>
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<td></td>
<td></td>
<td>dBm</td>
</tr>
<tr>
<td>Input IP3</td>
<td>18</td>
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<td></td>
<td>dBm</td>
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</tbody>
</table>
Conversion Gain vs. LO Drive

Isolation

IF Bandwidth

Input Power P1dB
MMX011

GaAs pHEMT MMIC
Mixer 18-40GHz

Outline Drawing:
All Dimensions in mm

<table>
<thead>
<tr>
<th>Pad Number</th>
<th>Function</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>RF</td>
<td>DC coupling 50Ω Impedance</td>
</tr>
<tr>
<td>2</td>
<td>LO</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