Silicon Double Balanced HMIC Mixer
850 - 1050 MHz

Features
- +21 dBm Typical Input IP3
- 8.3 dB Typical Conversion Loss
- +5 to +10 dBm LO Drive
- Fully Balanced Passive Mixer
- Low Cost Miniature Plastic MLP Package
- Lead Free (RoHS* Compliant) with 260°C Re-flow Capability
- 100% Matte Tin Plating

Description
MAMX-090950-1277LT is a 850 - 1050 MHz silicon monolithic double balanced mixer in a low cost miniature surface mount MLP 3 mm, 16 lead plastic package. The die uses M/A-COM’s unique HMIC silicon/glass process to realize low loss passive elements while retaining the advantages of medium barrier silicon Schottky barrier diodes.

Applications
These mixers are well suited for GSM and CDMA Cellular basestation applications where small size and high performance are required. Typical Applications include frequency conversion, modulation, and demodulation in wireless receivers and transmitters.

Ordering Information

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Package</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAMX-090950-1277LT</td>
<td>Tape and Reel</td>
</tr>
</tbody>
</table>

Absolute Maximum Ratings

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Maximum Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Temperature</td>
<td>-65°C to +125°C</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-65°C to 150°C</td>
</tr>
<tr>
<td>Incident LO Power</td>
<td>+20 dBm</td>
</tr>
<tr>
<td>Incident RF Power</td>
<td>+20 dBm</td>
</tr>
<tr>
<td>Soldering Temperature</td>
<td>+260°C max.</td>
</tr>
</tbody>
</table>

1. Exceeding these limits may cause permanent damage.
2. Please refer to application note M538 for surface mounting instructions.

### Electrical Specifications @ 25°C

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Frequency Range</th>
<th>Test Conditions</th>
<th>Units</th>
<th>Min.</th>
<th>Typ.</th>
<th>Max.</th>
</tr>
</thead>
</table>
| **Conversion Loss**     | 900 MHz
850 - 1050 MHz         | LO Drive = +7 dBm
RF = -10 dBm, IF = 60 MHz | dB       | —      | 8.2    | 8.5    | 8.9    |
| **L - R Isolation**     | 900 MHz
850 - 1050 MHz         | LO Drive = +7 dBm
RF Level = -10 dBm | dB       | —      | 65     | —      |
| **L - I Isolation**     | 900 MHz
850 - 1050 MHz         | LO Drive = +7 dBm
RF Level = -10 dBm | dB       | —      | 46     | —      |
| **R - I Isolation**     | 900 MHz
850 - 1050 MHz         | LO Drive = +7 dBm
RF Level = -10 dBm | dB       | —      | 23     | —      |
| **LO VSWR**             | 900 MHz
850 - 1050 MHz         | LO Drive = +7 dBm
RF Level = -10 dBm | Ratio    | —      | 1.5:1  | —      |
| **RF VSWR**             | 900 MHz
850 - 1050 MHz         | LO Drive = +7 dBm
RF Level = -10 dBm | Ratio    | —      | 1.3:1  | 1.5:1  |
| **IF VSWR**             | DC - 400 MHz             | LO Drive = +7 dBm
RF Level = -10 dBm | Ratio    | —      | 1.5:1  | —      |
| **Input IP3**           | 900 MHz
850 - 1050 MHz         | LO Drive = +7 dBm
RF = -10 dBm, IF = 60 MHz | dBm      | 17.8   | 21.0   | —      |
| **Input 1 dB Compression** | 900 MHz
850 - 1050 MHz         | LO Drive = +7 dBm
IF = 60 MHz | dBm      | —      | 4.3    | —      |
| **IF 1 dB Bandwidth**   | DC - 400 MHz             | LO = 900 MHz @ +7 dBm | MHz      | 0      | —      | 400    |
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Typical Performance Curves

**Conversion Loss vs. Frequency**
LO Drive = +5/+7/+9 dBm, RF = -10 dBm, IF = 60 MHz

**Input 1 dB & P1dB vs. Frequency**
LO Drive = +5/+7/+9 dBm, RF = -10 dBm, IF = 60 MHz

**VSWR vs. Frequency**
LO Drive = +7 dBm, RF = -10 dBm, IF = 60 MHz

**Isolation vs. Frequency**
LO Drive = +7 dBm, RF = -10 dBm

For further information and support please visit:
https://www.macom.com/support