Silicon Doubled Balanced HMIC Mixer 2300 – 2800 MHz

MAMX-090240-1277MT V2

Features

- + 27 dBm Typical Input IP3
- 9.0 dB Typical Conversion Loss
- + 13 to + 17 dBm LO Drive
- Fully Balanced Passive Mixer
- NO External Matching Required
- Low Cost Miniature Plastic MLP Package

Description and Applications

M/A-COM's MAMX-090240-1277MT is a silicon monolithic 2300-2800 MHz , medium barrier, double balanced mixer in a low cost, miniature surface mount FQFP-N 3mm Square, 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 to produce a compact device.

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

Absolute Maximum Ratings[1]

Parameter	Maximum Ratings
Operating Temperature	-40 °C to +85 °C
Storage Temperature	-65 °C to +150 °C
Incident LO Power	+20 dBm C.W.
Incident RF Power	+20 dBm C.W.

1. Exceeding these limits may cause permanent damage.

Ordering Information

Part Number	Package
MAMX-090240-1277MT	Tape and Reel

MLP 3mm Package - Circuit Side View

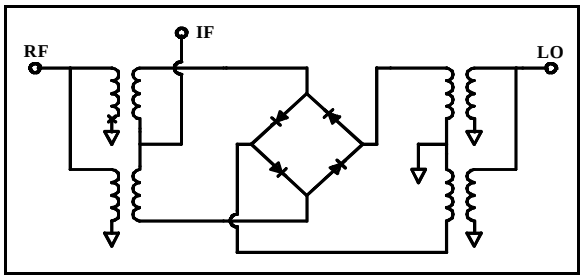
PIN 1 PIN 16

PIN Configuration[2]

PIN	Function	PIN	Function
1	N/C	9	N/C
2	N/C	10	RF
3	LO	11	N/C
4	N/C	12	N/C
5	N/C	13	N/C
6	N/C	14	IF
7	N/C	15	N/C
8	N/C	16	N/C

2. Package bottom is electrical ground

Mixed Schematic



- **North America** Tel: 800.366.2266 / Fax: 978.366.2266
- **Europe** Tel: 44.1908.574.200 / Fax: 44.1908.574.300
- **Asia/Pacific** Tel: 81.44.844.8296 / Fax: 81.44.844.8298

Visit www.macom.com for additional data sheets and product information.

Electrical Specifications @ 25 °C, IF = 60 MHz

MA4EXP240M	Units	25 °C		
Specification		**Min.**	**Typ.**	**Max.**
Conversion Loss 2500 MHz @ +15 dB	dB		9.0	**9.5**
Conversion Loss 2000-3000 MHz	dB		8.9	
L-R Isolation 2500 MHz	dB		61	
L-R Isolation 2000-3000 MHz	dB		54	
L-I Isolation 2500 MHz	dB		38	
L-I Isolation 2000-3000 MHz	dB		38	
R-I Isolation 2500 MHz	dB		20	
R-I Isolation 2000-3000 MHz	dB		20	
LO VSWR 2500 MHz			2.2:1	
LO VSWR 2000-3000 MHz			2.2:1	
RF VSWR 2500 MHz			2.2:1	
RF VSWR 2000-3000 MHz			2.2:1	
IF VSWR DC-500 MHz			1.6:1	
Input IP3 2500 MHz @ +15 dB	dBm	**24**	27	
Input IP3 2000-3000 MHz	dBm		24	
Input 1 dB Compr 2500 MHz @ +15 dB	dBm		9.4	
Input 1 dB Compr 2000-3000 MHz	dBm		9.6	
IF BANDWIDTH	MHz		500	

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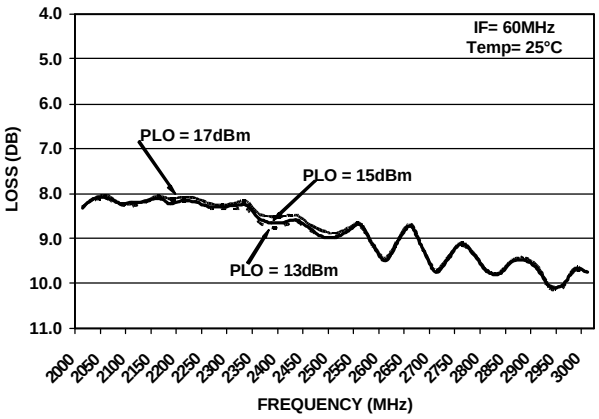
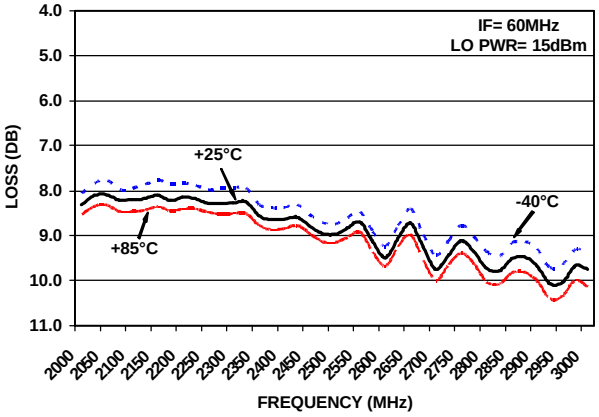
Typical Performance Curves

Conversion Loss

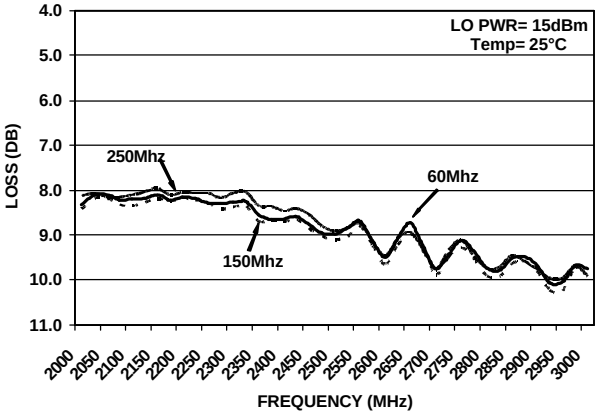
Over LO Power



Over Temperature

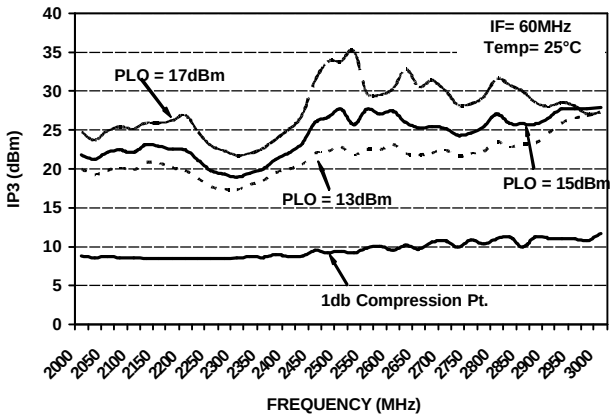


Over IF Frequency

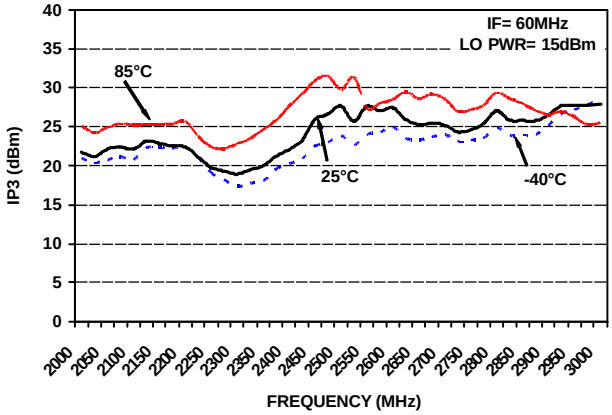


Input IP3

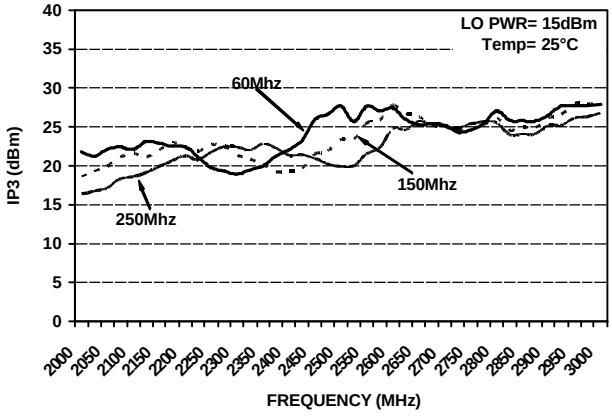
Over LO Power



Over Temperature



Over IF Frequency



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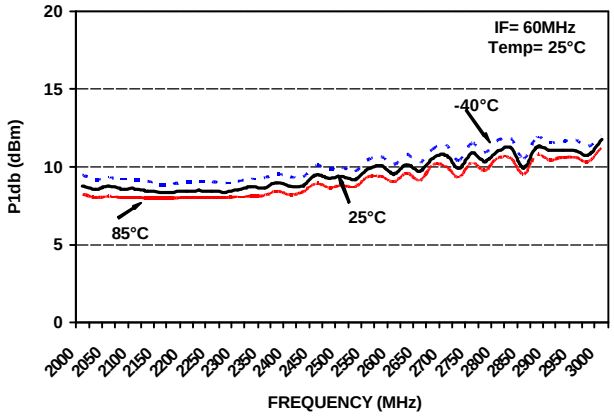
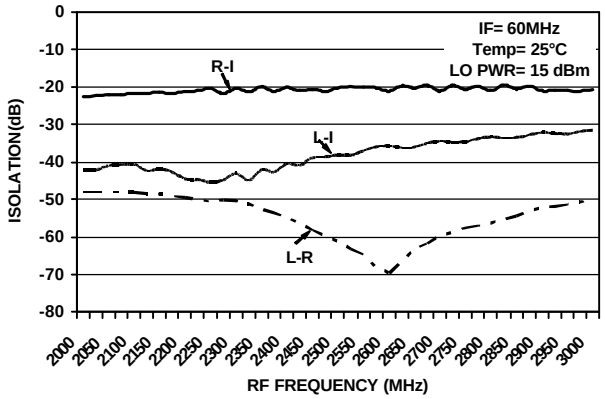
Typical Performance Curves

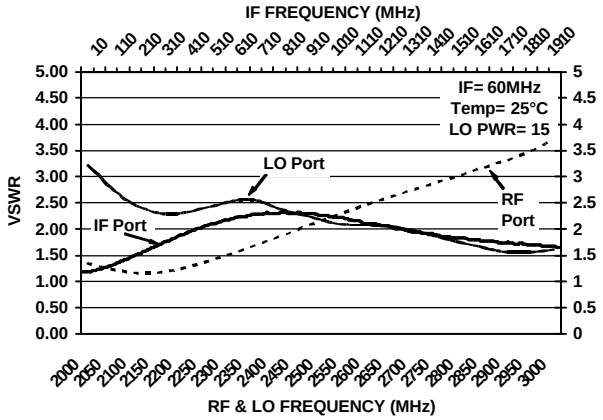
1 dB Compression



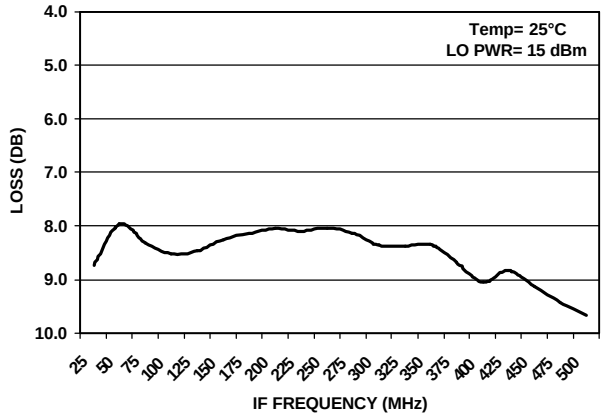
Isolaton



VSWR



Bandwidth



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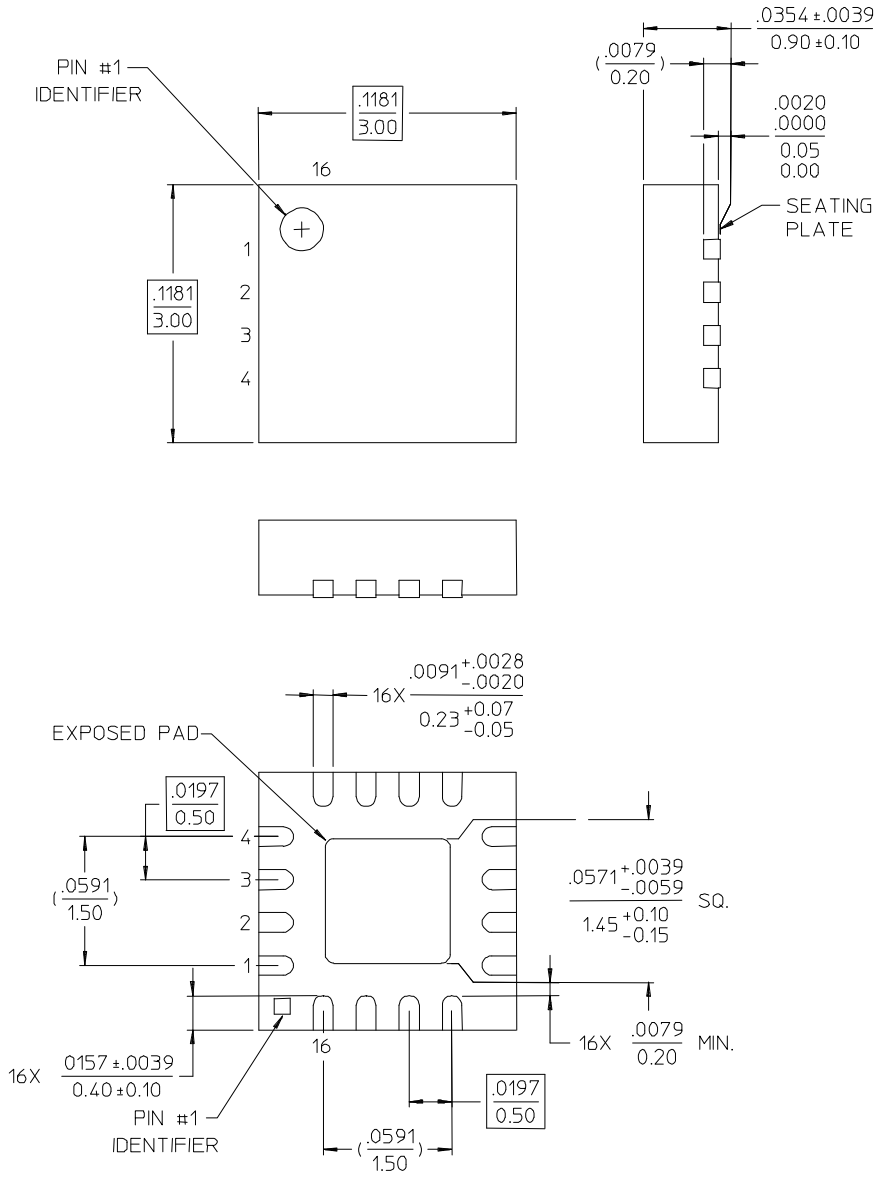
MAMX-090240-1277MT Outline – 3mm FQFP-N 16 Lead Saw Singulated



NOTES: 1. REFERENCE JEDEC MO-220, VAR. VEED-1 FOR ADDITIONAL DIMENSIONAL AND TOLERANCE INFORMATION.
2. REFERENCE S2083 APPLICATION NOTE FOR PCB FOOTPRINT INFORMATION.
3. ALL DIMENSIONS SHOWN AS INCHES/MM.

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