

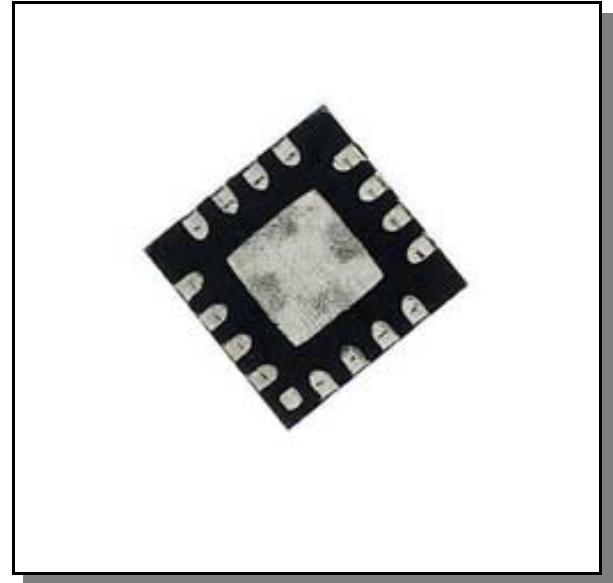
Silicon Double Balanced HMIC Mixer 850 - 1050 MHz

MA4EXP950H-1277

Features

- +35 dBm Typical IIP3
- 8.3 dB Typical Conversion Loss
- +15 to +19 dBm LO Drive
- Fully Balanced Passive Mixer
- NO Matching required
- Low Cost Miniature Plastic MLP Package

3mm, FQFP-N, 16 Lead



Description

M/A-COM's MA4EXP950H-1277 is a silicon monolithic 850 - 1050 MHz, high barrier, double balanced mixer in a low cost miniature surface mount FQFP-N 3mm, 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 high barrier silicon schottky barrier diodes.

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

Electrical Specifications¹: T_A = 25°C, Z₀ = 50 Ohms

Parameter	Test Conditions	Frequency	Units	Min	Typ	Max
Conversion Loss	LO Drive = +19 dBm RF = -10 dBm, IF = 60 MHz	850 MHz	dB	—	8.1	9.5
		850 - 1050 MHz	dB	—	8.3	9.5
L - R Isolation	LO Drive = +17 dBm RF Level = -10 dBm	850 MHz	dB	—	58.0	—
		850 - 1050 MHz	dB	—	55.0	—
L - I Isolation	LO Drive = +17 dBm RF Level = -10 dBm	850 MHz	dB	—	49.0	—
		850 - 1050 MHz	dB	—	44.0	—
R - I Isolation	LO Drive = +17 dBm RF Level = -10 dBm	850 MHz	dB	—	30.0	—
		850 - 1050 MHz	dB	—	28.0	—
RF VSWR	LO Drive = +17 dBm RF Level = -10 dBm	850 MHz	Ratio	—	1.50:1	—
		850 - 1050 MHz	Ratio	—	2.20:1	—
IF VSWR	LO Drive = +17 dBm RF Level = -10 dBm	DC - 500 MHz	Ratio	—	1.70:1	—
LO VSWR	LO Drive = +17 dBm RF Level = -10 dBm	850 MHz	Ratio	—	2.1:1	—
		850 - 1050 MHz	Ratio	—	1.7:1	—
Input IP3	LO Drive = +19 dBm RF = -10 dBm, IF = 60 MHz	850 MHz	dBm	—	32	—
		850 - 1050 MHz	dBm	—	33	—
Input 1 dB Compression	LO Drive = +17 dBm IF = 60 MHz	850 MHz	dBm	—	12.1	—
		850 - 1050 MHz	dBm	—	12.7	—
IF 1 dB Bandwidth	LO = 850 MHz @ +17 dBm	DC - 200 MHz	MHz	0	—	200

Pin Configuration

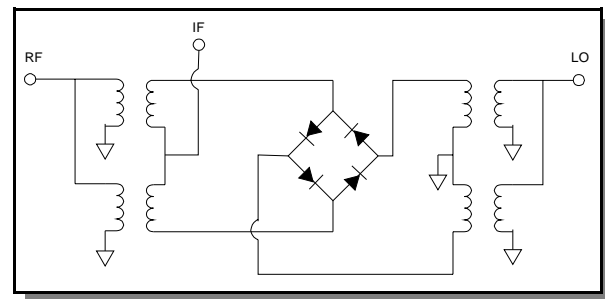
Pin No.	Function	Pin No.	Function
1	N/C	9	N/C
2	N/C	10	RF
3	LO	11	N/C
4	N/C	12	N/C
5	N/C	13	N/C
6	N/C	14	IF
7	N/C	15	N/C
8	N/C	16	N/C

Absolute Maximum Ratings ¹

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

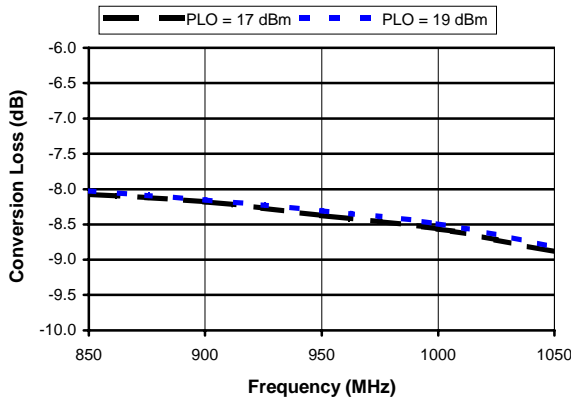
1. Exceeding any one or combination of these limits may cause permanent damage to this device.

Schematic

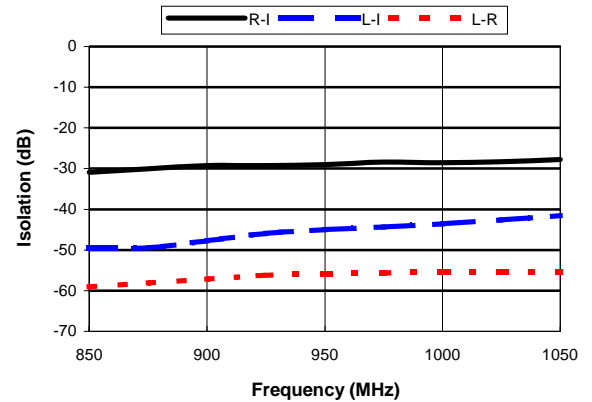


Typical Performance Curves (LO Drive = +17 dBm, RF = -10 dBm, IF = 60 MHz)

Conversion Loss



Isolation

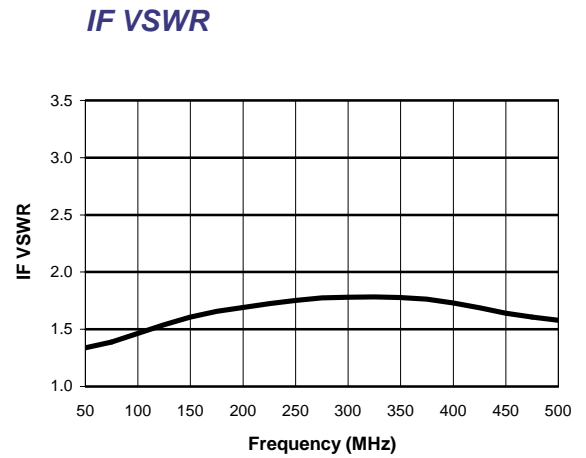
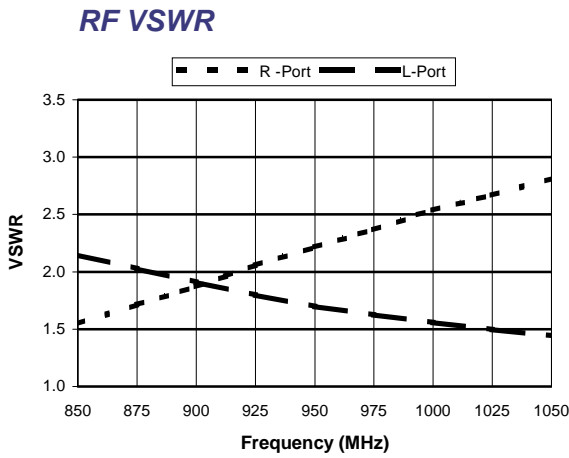


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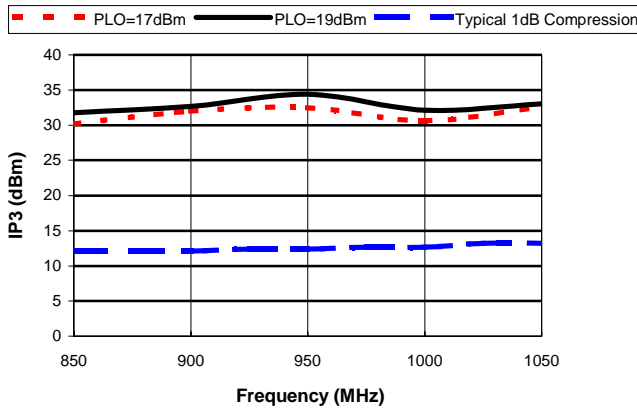
Visit www.macom.com for additional data sheets and product information.

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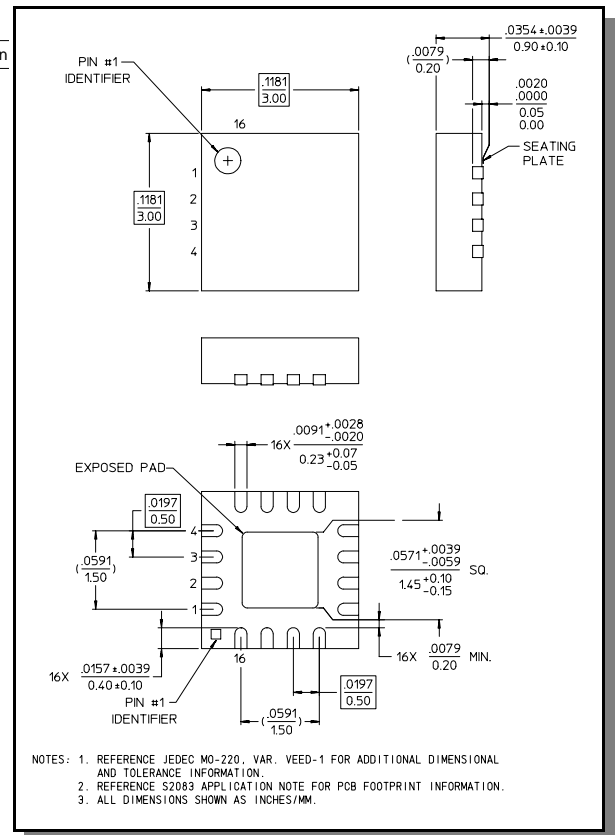
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Input IP3 and 1 dB Compression Point



OUTLINE DRAWING



Ordering Information

Part Number	Package
MA4EXP950H-1277	Bulk Packaging
MA4EXP950H-1277TR	Tape and Reel (1K Reel)

Note: Reference Application Note M513 for reel size information.

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