Silicon Double Balanced HMIC Mixer 700 – 1000 MHz

MA4EX900L-MOT
V1

Features

- Low Cost Miniature Plastic Package
- 6.5 dB Typical Conversion Loss at 850 MHz
- +3 to +7 dBm LO Drive
- HMIC™ Process
- Silicon Low Barrier Schottky Diodes
- DC - 400 MHz IF Bandwidth
- **Lead Free (RoHS Compliant) With 260 °C Reflow Capability**
- 100 % MATTE Tin Plating

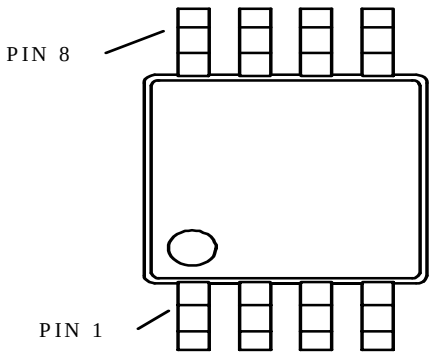
Description

M/A-COM's MA4EX900L-MOT is a silicon monolithic double balanced low barrier mixer in a low cost surface mount 8 lead plastic MSOP package. The die uses M/A-COM's unique HMIC™ silicon/glass process to achieve low loss passive elements while retaining the advantages of low barrier silicon Schottky diodes.

Applications

These mixers are well suited for high volume wireless and cellular applications where small size and repeatability are required. Typical applications include frequency conversion, modulation, and demodulation for receivers and transmitters in both portable cellular and base station applications.

MSOP-8 Package Outline



PIN CONFIGURATION

PIN	Function	PIN	Function
1	Gnd	5	LO
2	IF	6	Gnd
3	Gnd	7	Gnd
4	Gnd	8	RF

Ordering Information

Model No.	Package
MA4EX900L-MOT	Tape and Reel

Electrical Specifications @ +25°C

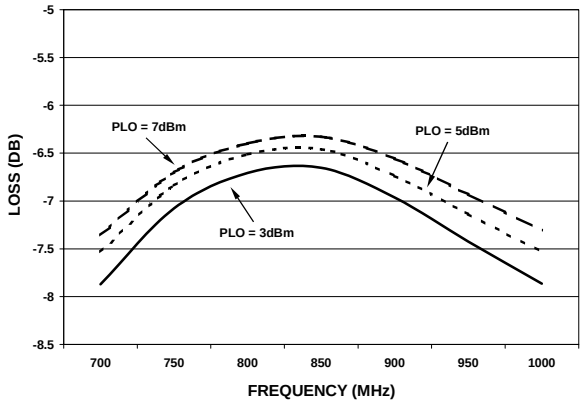
Parameter	FrequencyRange	Test Conditions	Units	Min.	Typ.	Max.
Conversion Loss	940 MHz 700-1000 MHz	LO Drive = +4 dBm RF = -10 dBm, IF = 400 MHz	dB dB		7.5	8.5
L - R Isolation	850 MHz 700-1000 MHz	LO Drive = +5 dBm RF Level = -10 dBm	dB dB		26 23	
L - I Isolation	850 MHz 700-1000 MHz	LO Drive = +5 dBm RF Level = -10 dBm	dB dB		31 30	
R - I Isolation	850 MHz 700-1000 MHz	LO Drive = +5 dBm RF Level = -10 dBm	dB dB		23 21	
LO VSWR	850 MHz 700-1000 MHz	LO Drive = +5 dBm RF Level = -10 dBm			1.6 1.6	
RF VSWR	850 MHz 700-1000 MHz	LO Drive = +5 dBm RF Level = -10 dBm			1.1 1.8	
IF VSWR	DC - 300 MHz	LO Drive = +5 dBm IF Level = -10 dBm			1.9	
Input IP3	940 MHz 700-1000 MHz	LO Drive = +4 dBm IF = 400 MHz	dBm dBm	7.0	9.0	
Input 1 dB Compression	850 MHz 700-1000 MHz	LO Drive = +5 dBm IF = 60 MHz	dBm dBm		+1.0 +1.0	
IF 1 dB Bandwidth			MHz	0	400	

North America: Tel. (800) 366-2266 Fax (800) 618-8883 ■ Asia/Pacific: Tel. +85 2 2375 0618 Fax +85 2 2375 0350 ■ Europe: Tel. +44 (1344) 869 595 Fax +44 (1344) 300 020

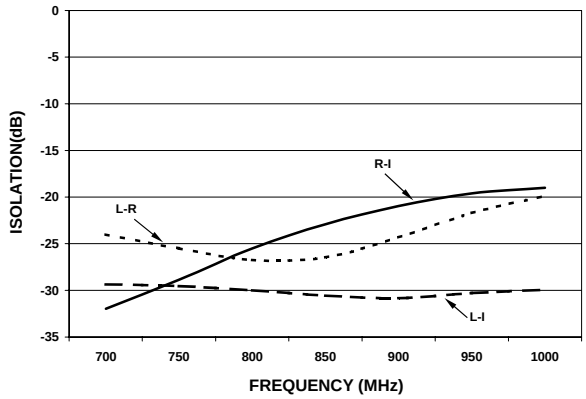
Typical Performance Curves

(LO Drive = +5dbm, RF = -10dBm, IF = 60MHz)

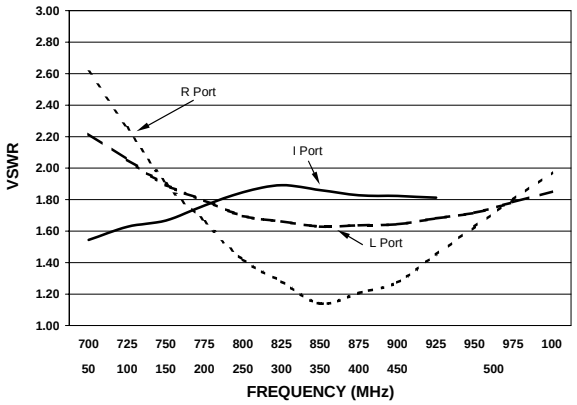
CONVERSION LOSS



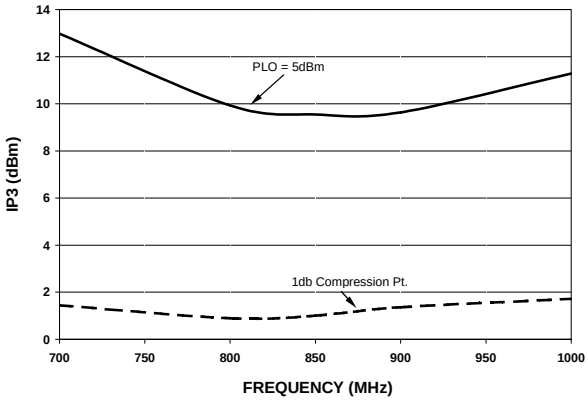
ISOLATION



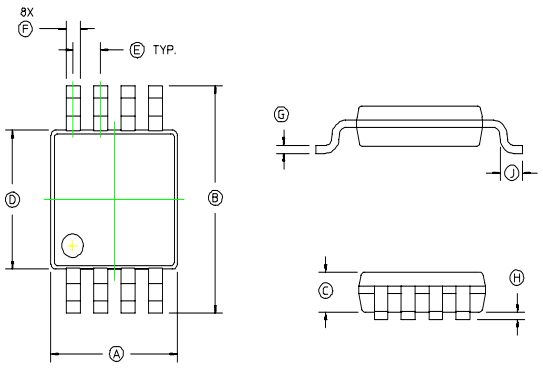
VSWR



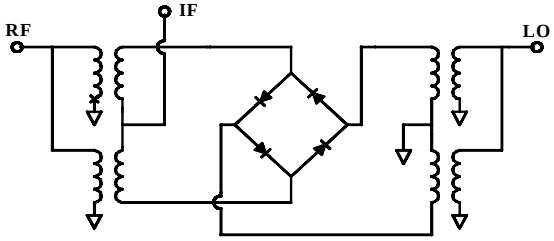
INPUT IP3 & 1dB Compression Point



Case Style – MSOP- 8 / ODS-1226



Schematic



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
Incident RF Power	+20 dBm
Soldering Temperature	+ 260 Deg C.

1. Exceeding these limits may cause permanent damage.

MSOP- 8 / ODS-1226

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	.110	.126	2.80	3.20
B	.184	.202	4.67	5.13
C	—	.040	—	1.02
D	.118 REF.		3.00 REF.	
E	.020	.031	.50	.80
F	.008	.016	.20	.40
G	.003	—	.08	—
H	.000	.006	.00	.15
J	.022 REF.		.55 REF	

Notes: 1. Leads Coplanarity should be 0.003 (0.08) max.

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