MA4EX190L-1225T

Silicon Double Balanced HMIC Mixer
1700 – 2300 MHz

Rev. V1

Features

- Low Cost Miniature Plastic Package
- 6.1dB Typical Conversion Loss at 1900 MHz
- 6.5 dB Typical Conversion Loss at 2200 MHz
- +3 to +7 dBm LO Drive
- HMIC™ Process
- Silicon Low Barrier Schottky Diodes
- DC - 500 MHz IF Bandwidth

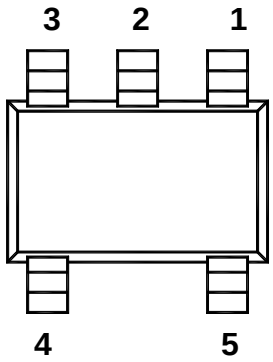
Description

M/A-COM's MA4EX190L-1225 is a silicon monolithic 1500-2500 MHz double balanced mixer in a low cost miniature surface mount SOT-25 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 WLAN 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.

Package Outline



PIN CONFIGURATION

PIN	Function	PIN	Function
1	RF	4	Gnd
2	Gnd	5	IF
3	LO		

Ordering Information

Model No.	Package
MA4EX190L-1225T	Tape and Reel

Electrical Specifications at @ +25°C

Parameter	Frequency Range	Test Conditions	Units	Min.	Typ.	Max.
Conversion Loss	1900 MHz 1700-2300 MHz	LO Drive = +5 dBm RF = -10 dBm, IF = 60 MHz	dB dB		6.1 6.5	6.8 8.5
L - R Isolation	1900 MHz 1700-2300 MHz	LO Drive = +5 dBm RF Level = -10 dBm	dB dB		25 24	
L - I Isolation	1900 MHz 1700-2300 MHz	LO Drive = +5 dBm RF Level = -10 dBm	dB dB		23 21	
R - I Isolation	1900 MHz 1700-2300 MHz	LO Drive = +5 dBm RF Level = -10 dBm	dB dB		20 19	
LO VSWR	1900 MHz 1700-2300 MHz	LO Drive = +5 dBm RF Level = -10 dBm			2.0:1 2.0:1	
RF VSWR	1900 MHz 1700-2300 MHz	LO Drive = +5 dBm RF Level = -10 dBm			1.15:1 1.7:1	
IF VSWR	DC - 500 MHz	LO Drive = +5 dBm IF Level = -10 dBm			1.5:1	
Input IP3	1900 MHz 1700-2300 MHz	LO Drive = +7 dBm IF = 60 MHz	dBm dBm	14.5 13.5	+16.5 +17.0	
Input 1 dB Compression	1900 MHz 1700-2300 MHz	LO Drive = +7 dBm IF = 60 MHz	dBm dBm		+1.9 +2.5	
IF 1 dB Bandwidth			MHz	0		500

• **North America** Tel: 800.366.2266 • **Europe** Tel: +353.21.244.6400
• **India** Tel: +91.80.43537383 • **China** Tel: +86.21.2407.1588
Visit www.macomtech.com for additional data sheets and product information.

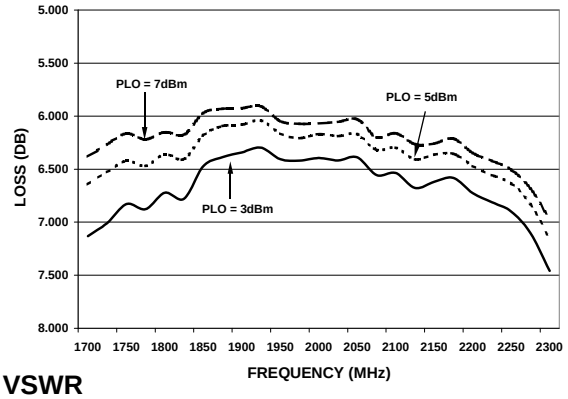
MA4EX190L-1225T

Silicon Double Balanced HMIC Mixer
1700 – 2300 MHz

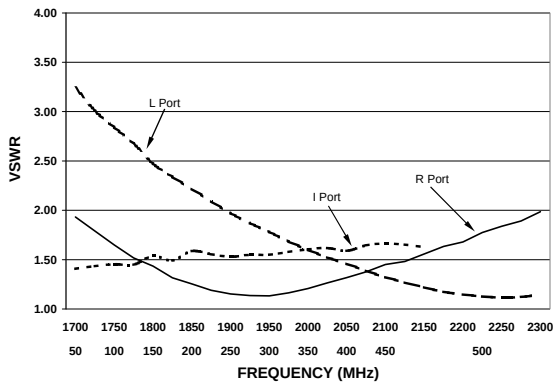
Rev. V1

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

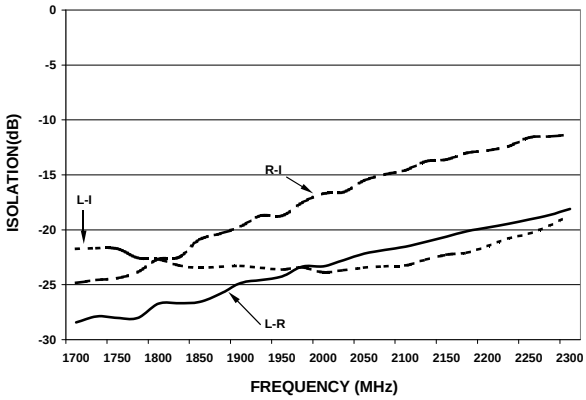
CONVERSION LOSS



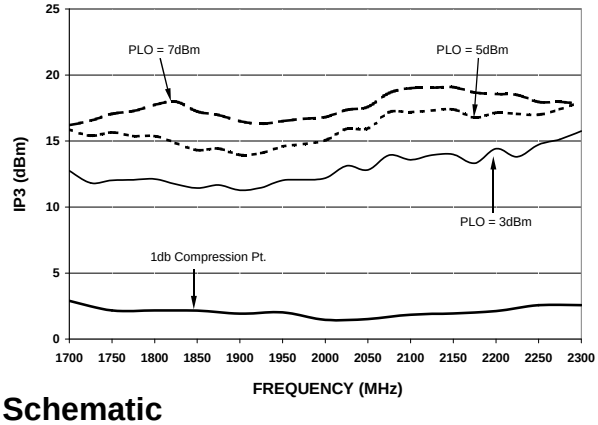
VSWR



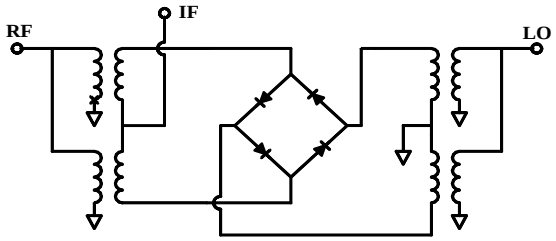
ISOLATION



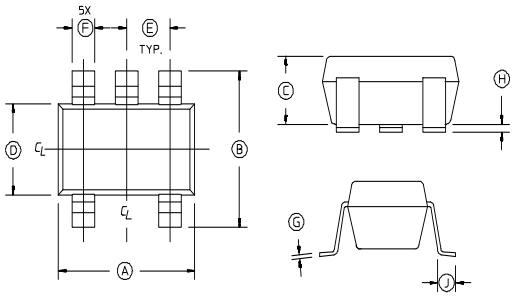
INPUT IP3 & 1dB Compression Point



Schematic



Case Style – SOT-25



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

1. Exceeding these limits may cause permanent damage.

SOT-25

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	.106	.122	2.70	3.10
B	.100	.118	2.54	3.00
C	—	.051	—	1.30
D	.063 REF.		1.60 REF.	
E	.032	.043	.80	1.10
F	.014	.020	.35	.50
G	.003	—	.08	—
H	.000	.006	.00	.15
J	.018 REF.		.45 REF	

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

• **North America** Tel: 800.366.2266 • **Europe** Tel: +353.21.244.6400
• **India** Tel: +91.80.43537383 • **China** Tel: +86.21.2407.1588
Visit www.macomtech.com for additional data sheets and product information.