MA4EX240M-1225T

Silicon Double Balanced HMIC Mixer
1700 – 2500 MHz

Rev. V1

Features

- Low Cost Miniature Plastic Package
- 6.7 dB Typical Conversion Loss at 2100 MHz
- +7 to +13 dBm LO Drive
- HMIC™ Process
- Silicon Medium Barrier Schottky Diodes
- DC - 500 MHz IF Bandwidth

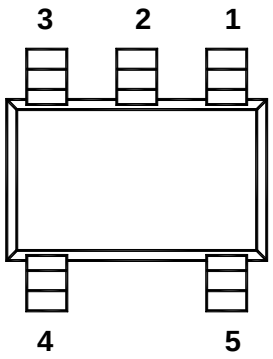
Description

M/A-COM's MA4EX240M-1225 is a silicon monolithic 1700-2500 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 medium 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	Gnd	4	RF
2	Gnd	5	LO
3	IF		

Ordering Information

Model No.	Package
MA4EX240M-1225T	Tape and Reel

Electrical Specifications @ +25°C

Parameter	FrequencyRange	Test Conditions	Units	Min.	Typ.	Max.
Conversion Loss	2100 MHz 1700-2500 MHz	LO Drive = +10 dBm RF = -10 dBm, IF = 60 MHz	dB dB		6.7 7.2	7.5 8.5
L - R Isolation	2100 MHz 1700-2500 MHz	LO Drive = +10 dBm RF Level = -10 dBm	dB dB		17 16	
L - I Isolation	2100 MHz 1700-2500 MHz	LO Drive = +10 dBm RF Level = -10 dBm	dB dB		22 22	
R - I Isolation	2100 MHz 1700-2500 MHz	LO Drive = +10 dBm RF Level = -10 dBm	dB dB		12 13	
LO VSWR	2100 MHz 1700-2500 MHz	LO Drive = +10 dBm			2.3:1 2.5:1	
RF VSWR	2100 MHz 1700-2500 MHz	LO Drive = +10 dBm RF Level = -10 dBm			1.2:1 1.7:1	
IF VSWR	DC - 400 MHz	LO Drive = +10 dBm IF Level = -10 dBm			1.6:1	
Input IP3	2100 MHz 1700-2500 MHz	LO Drive = +10 dBm IF = 60 MHz	dBm dBm	15 12	18 15.5	
Input 1 dB Compression	2100 MHz 1700-2500 MHz	LO Drive = +10 dBm IF = 60 MHz	dBm dBm		5.3 6.0	
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.

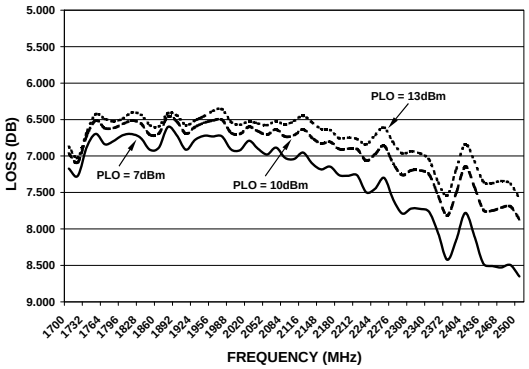
MA4EX240M-1225T

Silicon Double Balanced HMIC Mixer
1700 – 2500 MHz

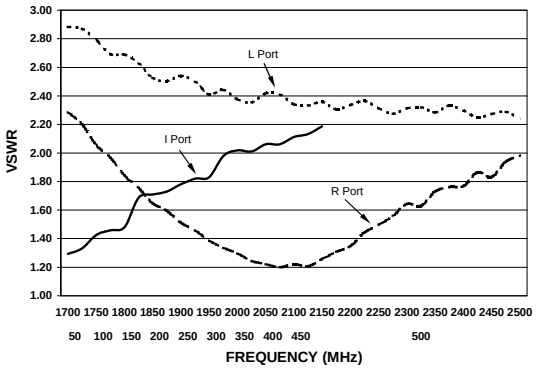
Rev. V1

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

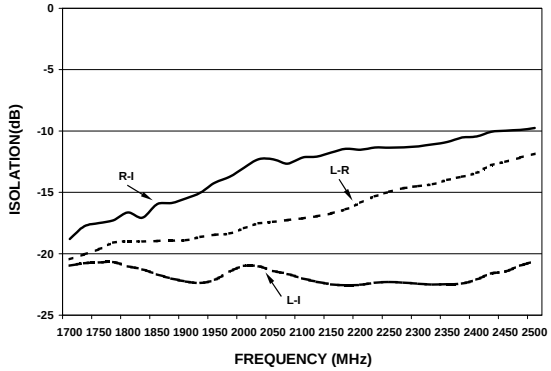
CONVERSION LOSS



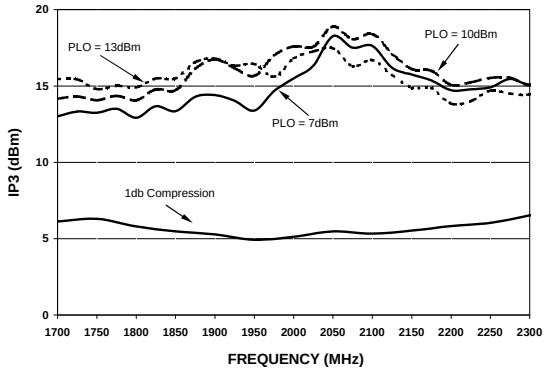
VSWR



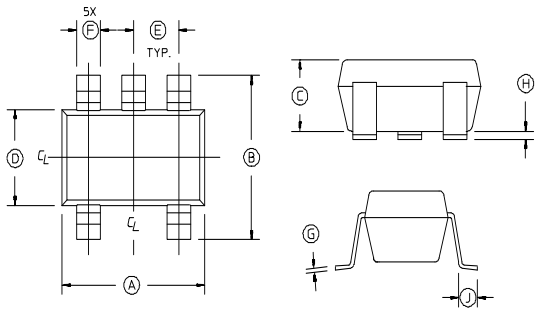
ISOLATION



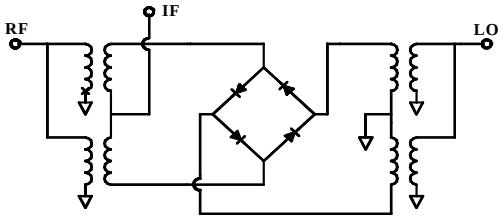
INPUT IP3 & 1dB Compression Point



Case Style – SOT-25



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

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.