

# MA4EX600L-1225T



Silicon Double Balanced HMIC Mixer  
4200 – 6000 MHz

Rev. V1

## Features

- Low Cost SOT-25 Miniature Plastic Package
- 6.4 dB Typical Conversion Loss at 5000 MHz
- +3 to +7 dBm LO Drive
- Silicon Low Barrier Schottky Diodes
- Double Balanced Passive Mixer
- NO External Matching Required

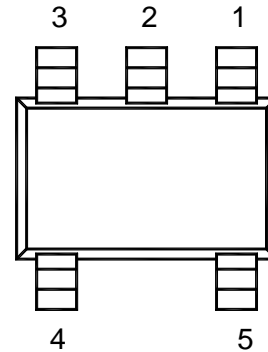
## Description

M/A-COM's MA4EX600L-1225T is a silicon monolithic 4.2 – 6.0 GHz 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 realize low loss passive elements while retaining the advantages of low barrier silicon Schottky diodes.

## Applications

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

## SOT- 25 Outline ( Top view )



### PIN CONFIGURATION

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

### Ordering Information

Model No.	Package
MA4EX600L-1225T	Tape and Reel

## Electrical Specifications @ +25°C

Parameter	Frequency Range	Test Conditions	Units	Min.	Typ.	Max.
Conversion Loss	5000 MHz 4.2 - 6.0 GHz	LO Drive = +5 dBm RF = -10 dBm, IF = 60 MHz	dB	-	6.4 6.8	8.0 9.5
L - R Isolation	5000 MHz 4.2 - 6.0 GHz	LO Drive = +5 dBm	dB	-	26 25	-
L - I Isolation	5000 MHz 4.2 - 6.0 GHz	LO Drive = +5 dBm	dB	-	24 23	-
R - I Isolation	5000 MHz 4.2 - 6.0 GHz	LO Drive = +5 dBm RF Level = - 10 dBm	dB	-	13 15	-
RF VSWR	5000 MHz 4.2 - 6.0 GHz	LO Drive = +5 dBm RF Level = - 10 dBm	Ratio	-	1.18:1 1.67:1	-
LO VSWR	5000 MHz 4.2 - 6.0 GHz	LO Drive = +5 dBm	Ratio	-	1.87:1 1.89:1	-
IF VSWR	10 - 2000 MHz	LO Drive = +5 dBm IF Level = 0 dBm	Ratio	-	1.55:1	-
Input IP3	5000 MHz 4.2 - 6.0 GHz	LO Drive = +5 dBm RF = -10 dBm, IF = 60 MHz	dBm	-	5.7 7.6	-
Input 1 dB Compression Power	5000 MHz 4.2 - 6.0 GHz	LO Drive = +5 dBm IF = 60 MHz	dBm	-	0.3 0.8	-
IF 1 dB Bandwidth	DC - 2000 MHz	LO = 5000 MHz @+5dBm	MHz	0	-	2000

**ADVANCED:** Data Sheets contain information regarding a product M/A-COM Technology Solutions is considering for development. Performance is based on target specifications, simulated results, and/or prototype measurements. Commitment to develop is not guaranteed.  
**PRELIMINARY:** Data Sheets contain information regarding a product M/A-COM Technology Solutions has under development. Performance is based on engineering tests. Specifications are typical. Mechanical outline has been fixed. Engineering samples and/or test data may be available. Commitment to produce in volume is not guaranteed.

• 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](http://www.macomtech.com) for additional data sheets and product information.

M/A-COM Technology Solutions Inc. and its affiliates reserve the right to make changes to the product(s) or information contained herein without notice.

# MA4EX600L-1225T

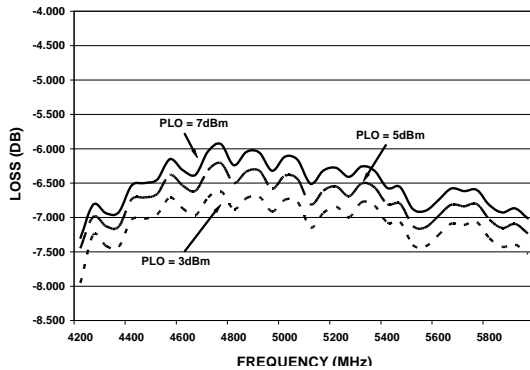


Silicon Double Balanced HMIC Mixer  
4200 – 6000 MHz

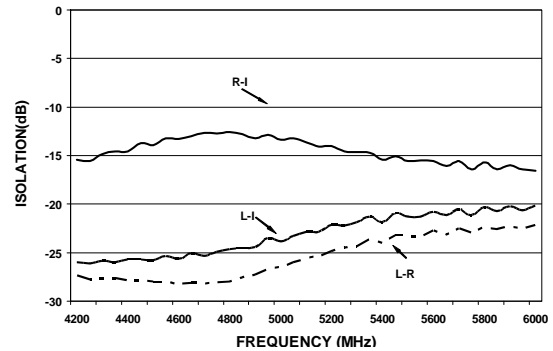
Rev. V1

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

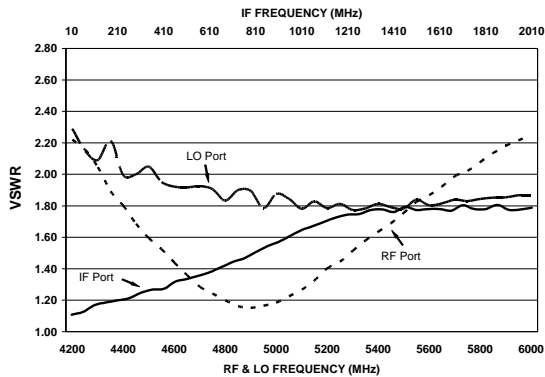
### CONVERSION LOSS



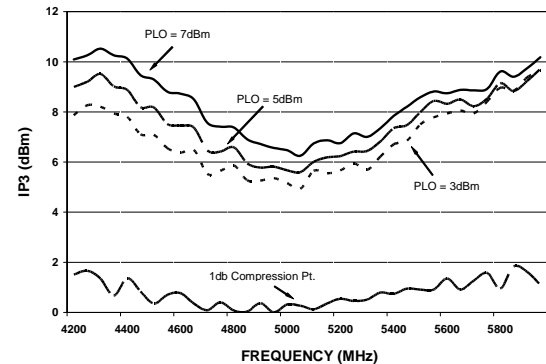
### ISOLATION



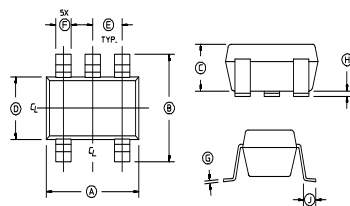
### VSWR



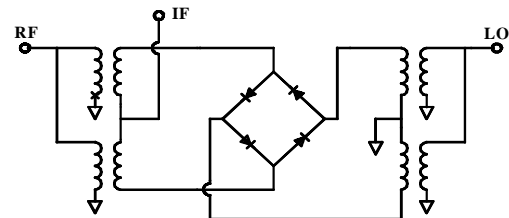
### INPUT IP3 & 1dB Compression Power



### Case Style – SOT-25



### Schematic



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.	

### Absolute Maximum Ratings<sup>1</sup>

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.

2

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

**ADVANCED:** Data Sheets contain information regarding a product M/A-COM Technology Solutions is considering for development. Performance is based on target specifications, simulated results, and/or prototype measurements. Commitment to develop is not guaranteed. **PRELIMINARY:** Data Sheets contain information regarding a product M/A-COM Technology Solutions has under development. Performance is based on engineering tests. Specifications are typical. Mechanical outline has been fixed. Engineering samples and/or test data may be available. Commitment to produce in volume is not guaranteed.

• 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](http://www.macomtech.com) for additional data sheets and product information.

M/A-COM Technology Solutions Inc. and its affiliates reserve the right to make changes to the product(s) or information contained herein without notice.