

# MA4EX950L1-1225T



Silicon Double Balanced HMIC Mixer  
700 - 1200 MHz

Rev. V2

## Features

- SOT-25 Low Cost Miniature Plastic Package
- 6.5 dB Typical Conversion Loss
- +3 to +7 dBm LO Drive
- HMIC™ Patented Process
- Silicon Low Barrier Schottky Barrier Diodes
- DC - 400 MHz IF Bandwidth
- RoHS\* Compliant with 260°C Reflow Capability
- 100 % Matte Tin Plating

## Description and Applications

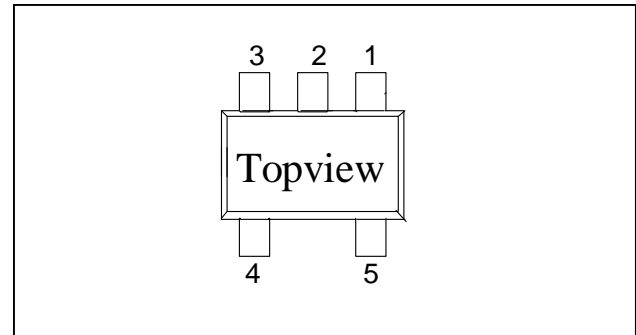
M/A-COM's MA4EX950L1-1225T is a 700-1200 MHz silicon monolithic double balanced mixer in a low cost miniature surface mount SOT-25 package. The die uses M/A-COM's unique HMIC silicon/glass process to realize low loss passive elements while retaining the advantages of medium barrier silicon Schottky barrier diodes.

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 in wireless receivers and transmitters.

## Ordering Information

Part Number	Package
MA4EX950L1-1225T	Tape and Reel

## SOT-25 Package Outline (Topview)



## PIN Configuration

PIN	Function	PIN	Function
1	RF	4	GND
2	GND	5	IF
3	LO	-	-

\* Restrictions on Hazardous Substances, European Union Directive 2005/95/EC.

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- **Europe** Tel: 44.1908.574.200 / Fax: 44.1908.574.300
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## Electrical Specifications @ +25 °C

Parameter	Frequency Range	Test Conditions	Units	Min.	Typ.	Max.
Conversion Loss	850 MHz 0.7—1.2 GHz	LO Drive = +3 -> + 7dBm RF = -10 dBm, IF = 60 MHz	dB		7.0 8.0	7.5 10.5
L - R Isolation	850 MHz 0.7—1.2 GHz	LO Drive = +5 dBm RF Level = -10 dBm	dB		28.0 25.0	
L - I Isolation	850 MHz 0.7—1.2 GHz	LO Drive = +5 dBm RF Level = -10 dBm	dB		27.0 26.0	
R - I Isolation	850 MHz 0.7—1.2 GHz	LO Drive = +5 dBm RF Level = -10 dBm	dB		28.0 24.0	
LO VSWR	850 MHz 0.7—1.2 GHz	LO Drive = +5 dBm RF Level = -10 dBm			2.4:1 2.8:1	- -
RF VSWR	850 MHz 0.7—1.2 GHz	LO Drive = +15 dBm RF Level = -10 dBm			1.3:1 2.7:1	- -
IF VSWR	DC - 400 MHz	LO Drive = +5 dBm RF Level = -10 dBm			1.4:1	-
Input IP3	850 MHz 0.7—1.2 GHz	LO Drive = +3 -> + 7dBm RF = -10 dBm, IF = 60 MHz	dBm	11.0 9.0	13.2 14.0	
Input 1 dB Compression	850 MHz 0.7—1.2 GHz	LO Drive = +3 -> + 7dBm RF = -10 dBm, IF = 60 MHz	dBm		0 +1.5	
IF 1 dB Bandwidth	DC - 400 MHz	LO = 4650 MHz @ +5 dBm	MHz	0		400.0

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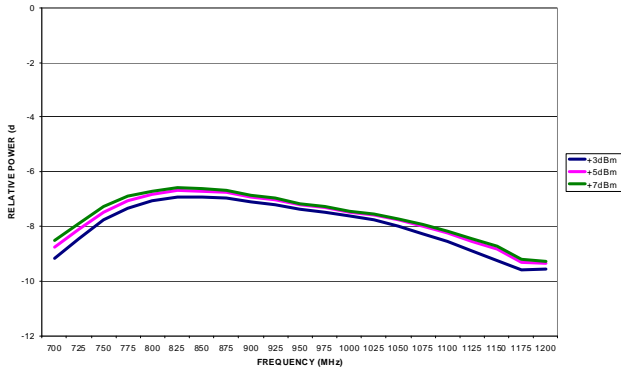
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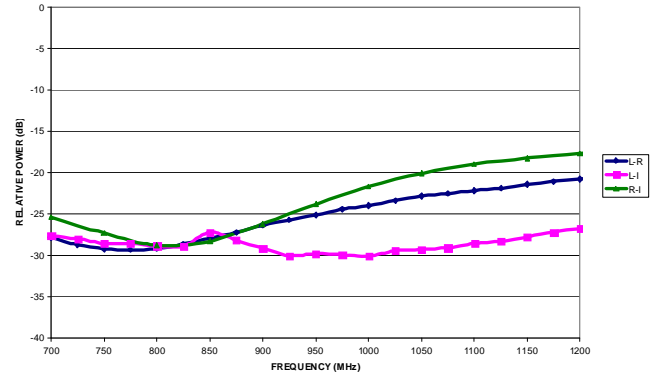
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## Typical Performance Curves (LO Drive = +10 dBm, RF = -10 dBm, IF = 60 MHz)

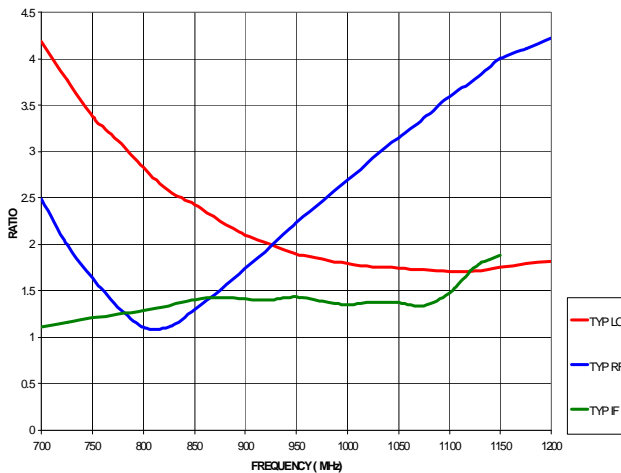
Conversion Loss



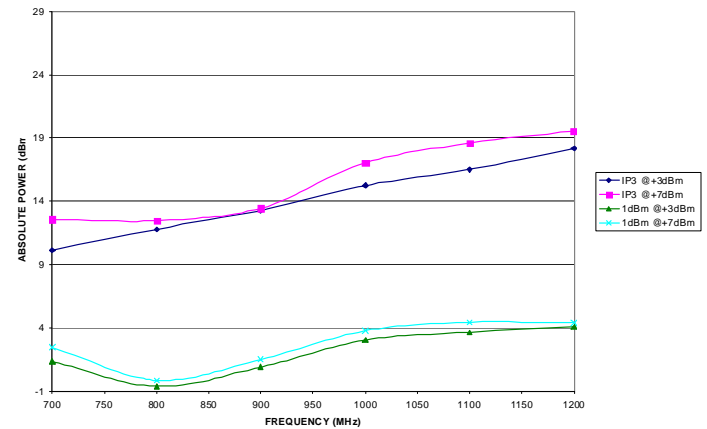
Isolation



Typical LO, RF and IF VSWR



Third Order Intercept and Input 1 dB Compression Power



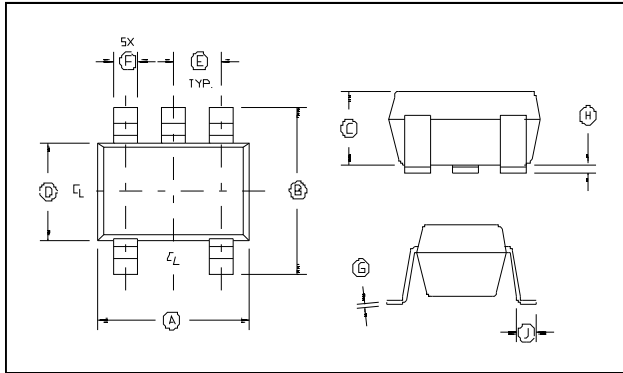
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## Case Style SOT-25



## SOT-25<sup>3,4</sup>

Dim	Inches		Millimeters	
	Min.	Max.	Min.	Max.
A	.1103	.1181	2.80	3.10
B	.1023	.1181	2.6	3.00
C	0.0355	.0512	0.9	1.30
D	0.0591	0.669	1.5	1.70
E	.0374 REF.		.095 REF.	
F	.0138	.0197	.35	.50
G	.0031	0.0079	.08	0.2
H	.0002	.0059	.05	.15
J	0.138	0.216	.35	.55

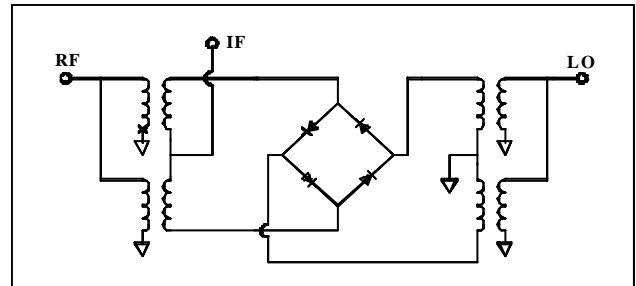
- Dimensions do not include mold flash, protrusion or gate burrs which shall not exceed 0.0098 in (.25mm) per side.
- Lead Coplanarity is 0.003 (0.08) max.

## Absolute Maximum Ratings<sup>1,2</sup>

Parameter	Maximum Ratings
Operating Temperature	-65 °C to +125 °C
Storage Temperature	-65 °C to +150 °C
Incident LO Power	+20 dBm
Incident RF Power	+20 dBm
Mounting Temperature	+235 °C for 10 seconds
Soldering Temperature	+260 °C max.

- Exceeding these limits may cause permanent damage.
- Please refer to application note M538 for surface mounting instructions.

## Schematic



Компания «Life Electronics» занимается поставками электронных компонентов импортного и отечественного производства от производителей и со складов крупных дистрибьюторов Европы, Америки и Азии.

С конца 2013 года компания активно расширяет линейку поставок компонентов по направлению коаксиальный кабель, кварцевые генераторы и конденсаторы (керамические, пленочные, электролитические), за счёт заключения дистрибьюторских договоров

Мы предлагаем:

- Конкурентоспособные цены и скидки постоянным клиентам.
- Специальные условия для постоянных клиентов.
- Подбор аналогов.
- Поставку компонентов в любых объемах, удовлетворяющих вашим потребностям.
- Приемлемые сроки поставки, возможна ускоренная поставка.
- Доставку товара в любую точку России и стран СНГ.
- Комплексную поставку.
- Работу по проектам и поставку образцов.
- Формирование склада под заказчика.
- Сертификаты соответствия на поставляемую продукцию (по желанию клиента).
- Тестирование поставляемой продукции.
- Поставку компонентов, требующих военную и космическую приемку.
- Входной контроль качества.
- Наличие сертификата ISO.

В составе нашей компании организован Конструкторский отдел, призванный помогать разработчикам, и инженерам.

Конструкторский отдел помогает осуществить:

- Регистрацию проекта у производителя компонентов.
- Техническую поддержку проекта.
- Защиту от снятия компонента с производства.
- Оценку стоимости проекта по компонентам.
- Изготовление тестовой платы монтаж и пусконаладочные работы.



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