MA4EX600H-1225T

Silicon Double Balanced HMIC Mixer
4200 – 6000 MHz

Rev. V1

Features

- 5.8 dB Typical Conversion Loss at 5000 MHz
- +13 to +17 dBm LO Drive
- HMIC IC Process
- Silicon High Barrier Schottky Barrier Diodes
- DC – 2000 Mhz IF Bandwidth
- Low Cost Miniature Plastic Package

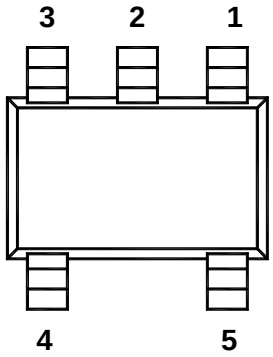
Description

M/A-COM's MA4EX600H-1225 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 high barrier silicon Schottky barrier 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.

Package Outline (Topview)



PIN CONFIGURATION

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

Ordering Information

Model No.	Package
MA4EX600H-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 = +15 dBm RF = -10 dBm, IF = 60 MHz	dB		5.8 6.5	6.5 8.0
L - R Isolation	5000 MHz 4.2 - 6.0 GHz	LO Drive = +15 dBm RF Level = - 10 dBm	dB		28 25	
L - I Isolation	5000 MHz 4.2 – 6.0 GHz	LO Drive = +15 dBm RF Level = - 10 dBm	dB		26 24	
R - I Isolation	5000 MHz 4.2 - 6.0 GHz	LO Drive = +15 dBm RF Level = - 10 dBm	dB		13 13	
RF VSWR	5000 MHz 4.2 - 6.0 GHz	LO Drive = +15 dBm RF Level = - 10 dBm	Ratio		1.25 1.9	
IF VSWR	1000 MHz 50 - 2000 MHz	LO Drive = +15 dBm IF Level = - 10 dBm	Ratio		1.9 1.8	
Input IP3	5000 MHz 4.2 - 6.0 GHz	LO Drive = +15 dBm RF = -10 dBm, IF = 60 MHz	dBm		16.7 16.0	
Input 1 dB Compression Power	5000 MHz 4.2 - 6.0 GHz	LO Drive = +15 dBm RF = -10 dBm, IF = 60 MHz	dBm		6.9 8.0	
IF 1 dB Bandwidth	DC - 2000 MHz	LO = 5000 MHz @+15dBm	MHz		0 - 2000	

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• **North America** Tel: 800.366.2266 • **Europe** Tel: +353.21.244.6400
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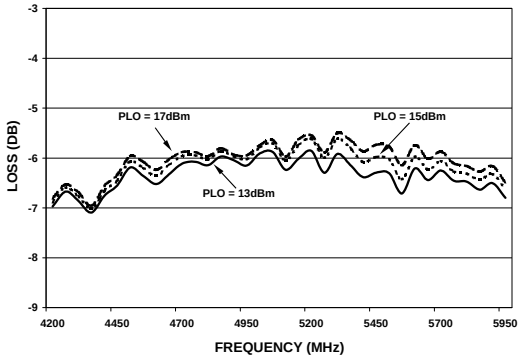
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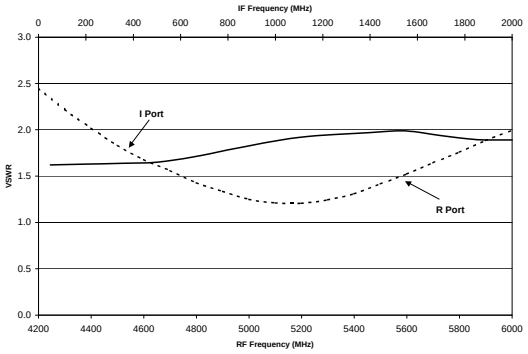
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Typical Performance Curves
(LO Drive = +15dbm, RF = -10dBm, IF = 60 MHz)

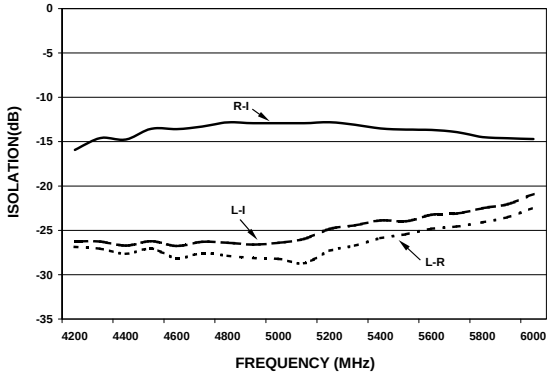
CONVERSION LOSS



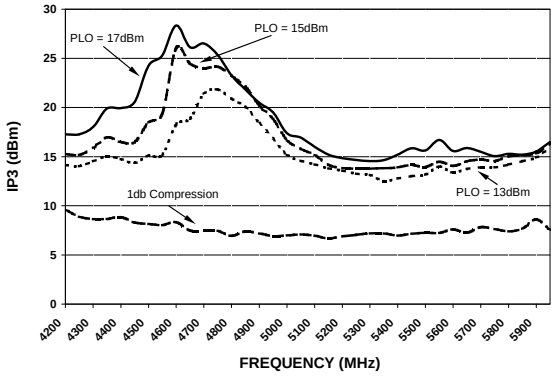
VSWR



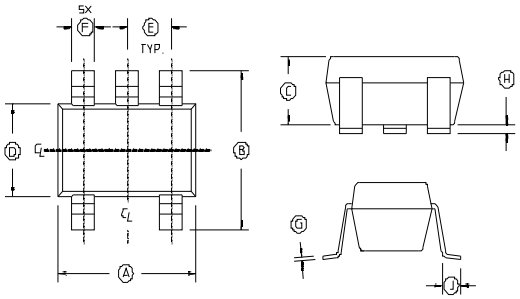
ISOLATION



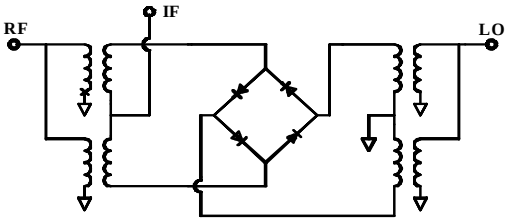
INPUT IP3 & 1dB Compression Point



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 C.W.
Incident RF Power	+ 20 dBm C.W.

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.

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