

Silicon Double Balanced HMIC™ Mixer

LO=3300 MHz, RF=5800 MHz

V 2.00

MA4EX585L-1225T

Features

- LO = 3300 MHz, RF = 5800 MHz
- +3 dBm to +7 dBm LO Drive
- 8.3 dB Typical Conversion Loss
- Double Balanced Passive Mixer
- NO External Matching Required
- Low Cost SOT-25 Miniature Plastic Package

Description

M/A-COM's MA4EX585L-1225T is a silicon monolithic double balanced mixer in a low cost miniature surface mount SOT25 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 barrier diodes to produce a compact device.

Applications

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

Ordering Information

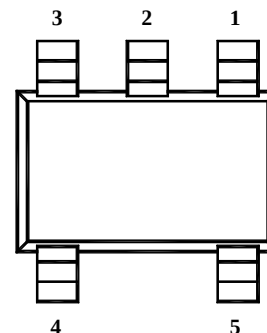
Part Number	Package
MA4EX585L-1225T	Tape and Reel

Absolute Maximum Ratings¹

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.

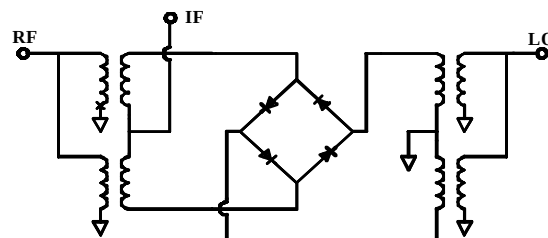
Outline SOT 25 - Top View



PIN Configuration

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

Schematic

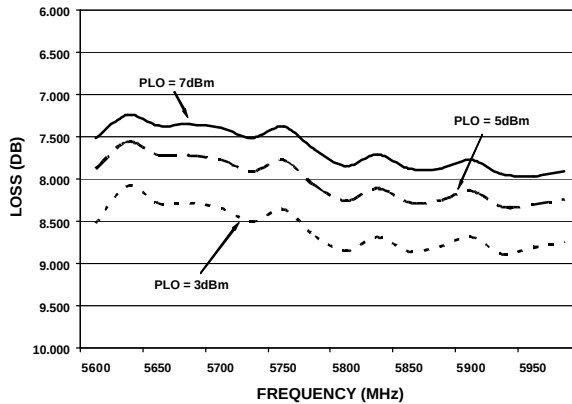


Electrical Specifications: @ + 25 °C

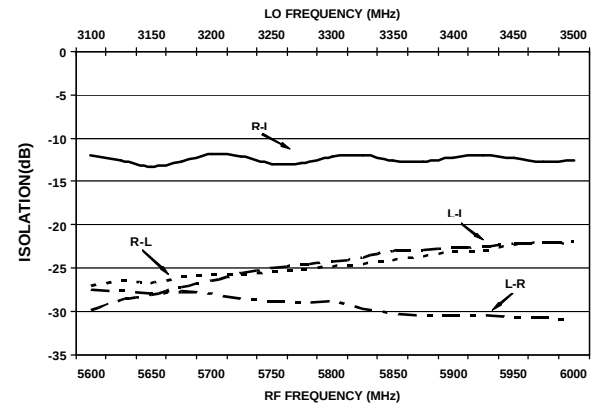
Parameter	Frequency Range	Test Conditions	Units	Min.	Avg.	Max.
Conversion Loss	LO = 3.3+/-0.2 GHz RF = 5.8+/-0.2 GHz	LO Drive = +5 dBm RF = -10 dBm	dB	-	8.3	9.0
L - R Isolation	LO = 3.3 GHz	LO Drive = +5 dBm	dB	-	28.0	-
R - L Isolation	RF = 5.8 GHz	LO Drive = +5 dBm RF = -10 dBm	dB	-	24.0	-
L - I Isolation	LO = 3.3 GHz	LO Drive = +5 dBm	dB dB	- -	24.0	- -
R - I Isolation	RF = 5.8 GHz	LO Drive = +5 dBm RF = -10 dBm	dB	-	12.0	-
RF VSWR	RF = 5.8 GHz	LO Drive = +5 dBm RF = -10 dBm	Ratio	-	2.4:1	-
LO VSWR	LO = 3.3 GHz	LO Drive = +5 dBm	Ratio	- -	1.8:1	-
IF VSWR	IF = 2.5 GHz	LO Drive = +5 dBm IF = 0 dBm	Ratio	-	1.6:1	-
Input IP3	LO = 3.3 GHz RF = 5.8 GHz	LO Drive = +5 dBm RF = -10 dBm	dBm	-	11.0	-
Input 1 dB Compression	LO = 3.3 GHz RF = 5.8 GHz	LO Drive = +5 dBm	dBm	-	1.1	-

Typical Performance Curves (LO Drive = +5 dBm, RF = -10 dBm, IF = 2500 MHz)

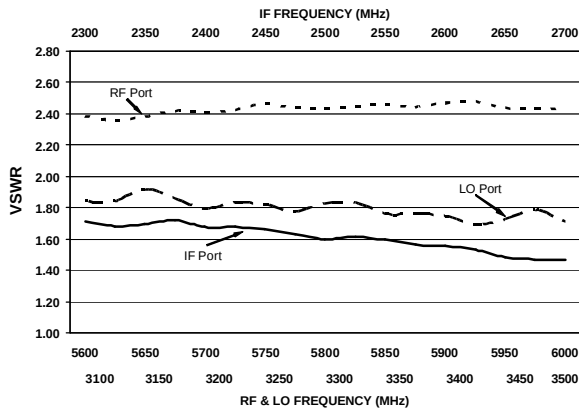
Conversion Loss



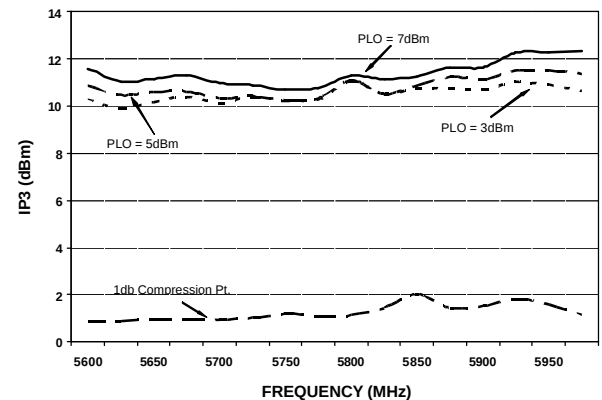
Isolation



VSWR

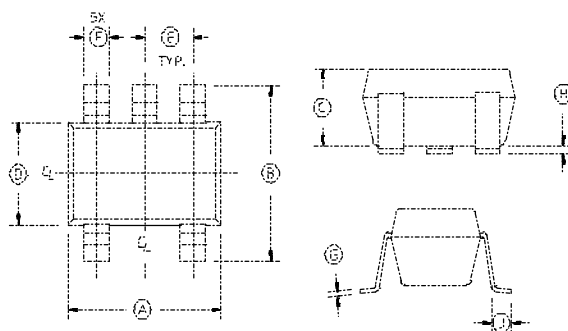


INPUT IP3 & 1 dB Compression Power



Case Style - SOT-25

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.