

MA4EX370M-1225T



Silicon Double Balanced HMIC Mixer
3000 - 4000 MHz

Rev. V2

Features

- 7.0 dB Typical Conversion Loss
- +7 to +13 dBm LO Drive
- HMIC IC Process
- Silicon Medium Barrier Schottky Barrier Diodes
- DC - 1050 MHz IF Bandwidth
- Low Cost Miniature Plastic Package

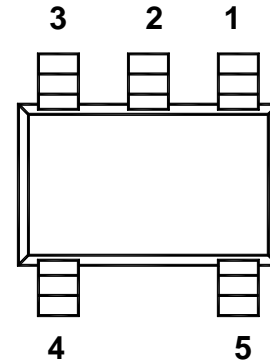
Description

M/A-COM's MA4EX370M-1225T is a silicon monolithic 3.0 -4.0 GHz 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 medium 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



PIN CONFIGURATION

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

Ordering Information

| Model No. | Package |
|-----------------|---------------|
| MA4EX370M-1225T | Tape and Reel |

Electrical Specifications @ +25°C

| Parameter | Frequency Range | Test Conditions | Units | Min. | Typ. | Max. |
|------------------------|---------------------------|---|-------|------|--------------|------------|
| Conversion Loss | 3500 MHz 3.0 - 4.0 GHz | LO Drive = +10 dBm RF = -10 dBm, IF = 60 MHz | dB | | 6.3 7.0 | 7.5 9.0 |
| L - R Isolation | 3500 MHz 3.0 - 4.0 GHz | LO Drive = +10 dBm RF Level = -10 dBm | dB | | 27.0 22.0 | |
| L - I Isolation | 3500 MHz 3.0 - 4.0 GHz | LO Drive = +10 dBm RF Level = -10 dBm | dB | | 31.0 27.0 | |
| R - I Isolation | 3500 MHz 3.0 - 4.0 GHz | LO Drive = +10 dBm RF Level = -10 dBm | dB | | 11.0 13.0 | |
| RF VSWR | 3500 MHz 3.0 - 4.0 GHz | LO Drive = +10 dBm RF Level = -10 dBm | | | 1.10 2.20 | |
| IF VSWR | DC - 500 MHz | LO Drive = +10 dBm IF Level = -10 dBm | | | 1.90 | |
| Input IP3 | 3500 MHz 3.0 - 4.0 GHz | LO Drive = +10 dBm RF = -10 dBm, IF = 60 MHz | dBm | | 15.0 13.0 | |
| Input 1 dB Compression | 3500 MHz 3.0 - 4.0 GHz | LO Drive = +10 dBm RF = -10 dBm, IF = 60 MHz | dBm | | 5.0 5.0 | |
| IF 1 dB Bandwidth | DC - 500 MHz | LO = 3650 MHz @+10dBm | MHz | | | 1050 |

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• India Tel: +91.80.43537383 • China Tel: +86.21.2407.1588

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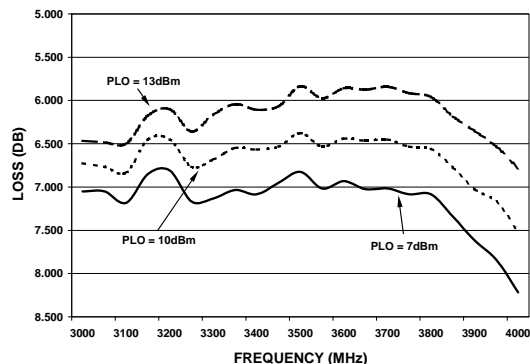


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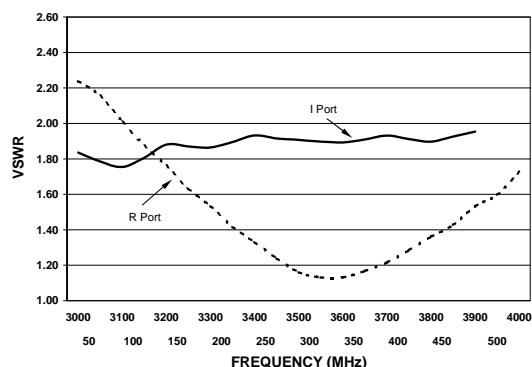
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Typical Performance Curves (LO Drive = +10dbm, RF = -10dBm, IF = 60MHz)

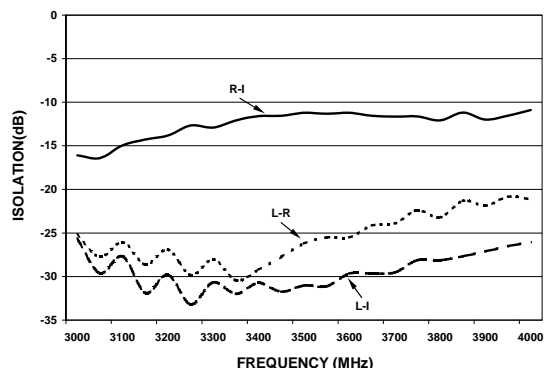
CONVERSION LOSS



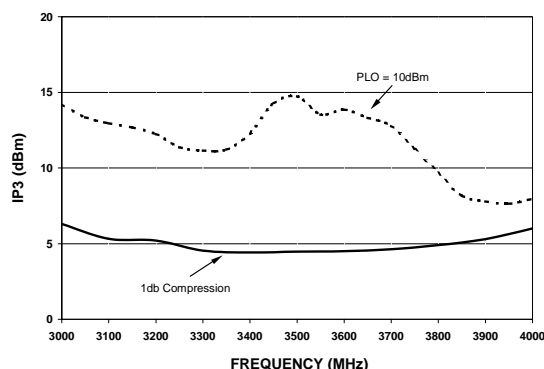
VSWR



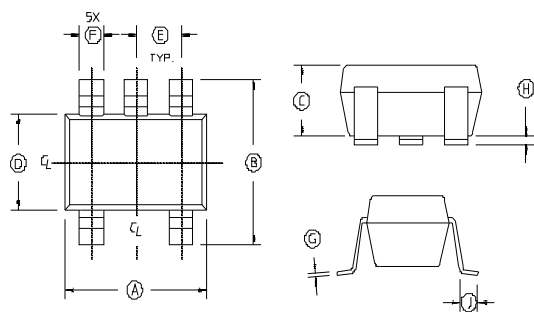
ISOLATION



INPUT IP3 & 1dB Compression Point



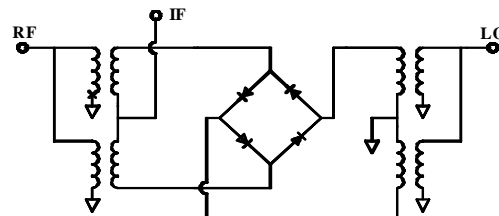
Case Style – SOT-25



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 |

Schematic



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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