

## Features

- Input Power @ 1 dB Compression: +15 dBm
- High LO to RF Isolation: 35 dB
- LO Drive Level: +3 to +8 dBm
- DC - 200 MHz 3 dB IF Bandwidth
- Does not require DC bias
- Lead-Free SOT-25 Package
- 100% Matte Tin Plating over Copper
- Halogen-Free “Green” Mold Compound
- 260°C Reflow Compatible
- RoHS\* Compliant Version of MD54-0005

## Description

M/A-COM's MAMXSS0012 is a passive mixer that achieves the performance of a double balanced diode mixer in a lead-free SOT-25 package. The MAMXSS0012 is ideally suited for use where high level RF signals and very wide dynamic range are required. Typical applications include frequency up/down conversion, modulation, and demodulation in receivers and transmitters for base station and portable systems.

The MAMXSS0012 employs GaAs FETs as mixing elements to achieve a very wide dynamic range in a low cost plastic package. The mixer operates with LO drive levels of +3 dBm to +8 dBm. The LO port may be externally tuned for operation in various frequency bands.

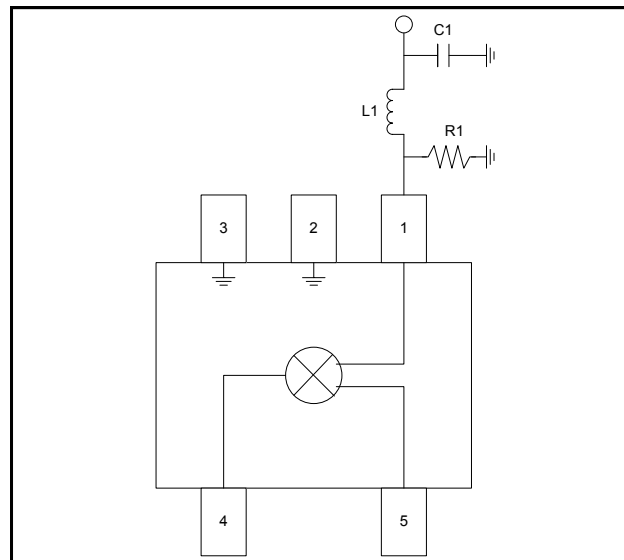
M/A-COM's GaAs IC is fabricated using a mature 0.5 micron gate length GaAs MESFET process. The process features full passivation for increased performance and reliability.

## Ordering Information <sup>1</sup>

Part Number	Package
MAMXSS0012	Bulk Packaging
MAMXSS0012TR-3000	3000 piece reel
MAMXSS0012SMB	Designers Kit

1. Reference Application Note M513 for reel size information.

## Functional Schematic



## Pin Configuration

Pin No.	Function	Pin No.	Function
1	LO	4	RF
2	Ground	5	IF
3	Ground		

## External Circuitry Parts List <sup>2</sup>

Ref. Designation	LO = 840 MHz	LO = 900 MHz
R1	820 Ohms	820 Ohms
L1	22 nH	18 nH
C1	3.3 pF	4 pF

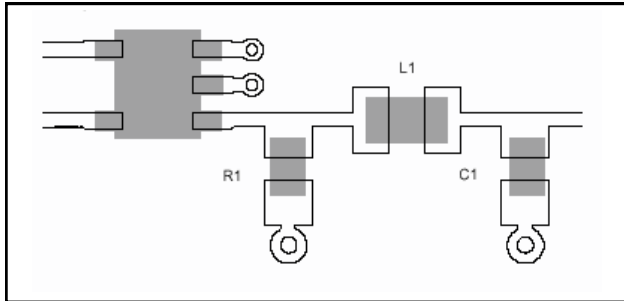
2. All off-chip components are low-cost surface mount components obtainable from multiple sources (0.060 in. x 0.030 in. or 0.080 in. x 0.050 in.).

\* Restrictions on Hazardous Substances, European Union Directive 2002/95/EC.

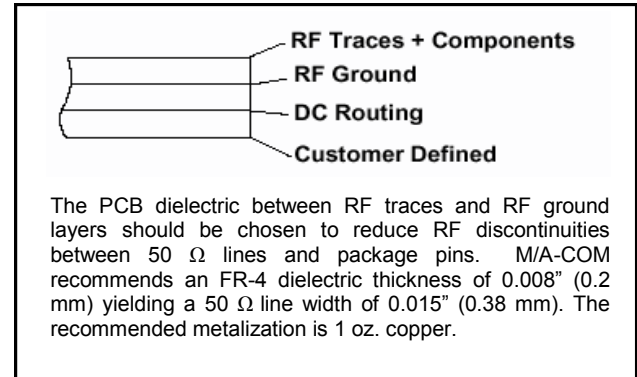


## Recommended PCB Configuration

### Layout View



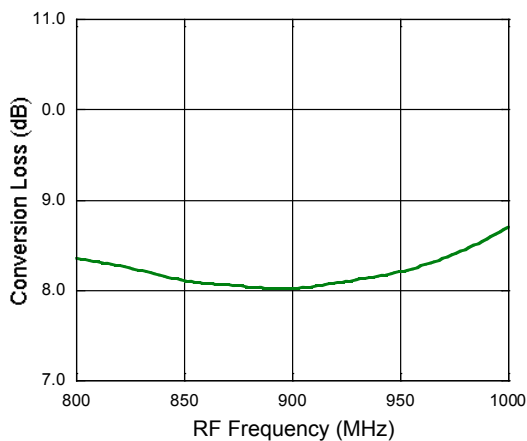
## Cross Section View



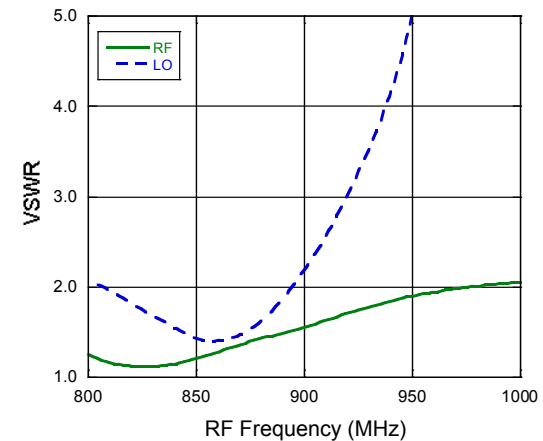
## Typical Performance Curves

- **Test Conditions for Down Converter Application:** RF=900 MHz (-10 dBm), IF=60 MHz, LO=840 MHz (+5 dBm), LO Port match shown herein.
- **Test Conditions for Up Converter Application:** LO=840 MHz (+5 dBm), IF=60 MHz (-10 dBm), RF=900 MHz, LO Port match shown herein.

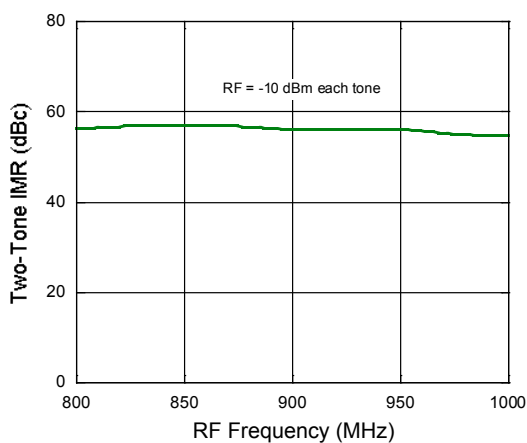
### Conversion Loss



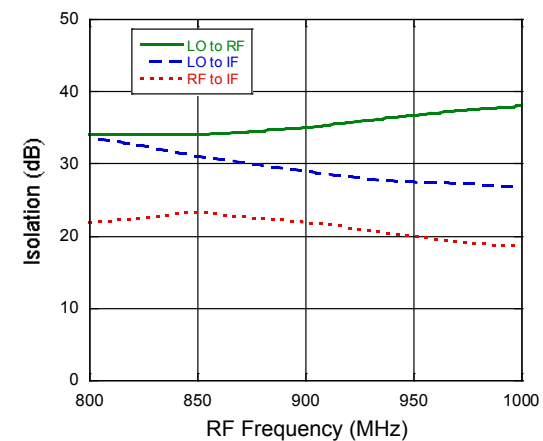
### VSWR



### Two-Tone IMR



### Isolation



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