

**GaAs MMIC Double Balanced  
11-15 GHz Mixer**

**MA4EX1201-1300T  
V1**

**Features**

- Useable Bandwidth of Operation : 11 - 15 GHz
- +13 dbm Typical Input IP3
- 6 dB Typical Conversion Loss at 12 GHz
- +13 dBm LO Drive
- GaAs Schottky Diodes for Excellent Repeatability
- No External Matching or D.C. Bias Required
- Low Cost Plastic MSOP-8 Package

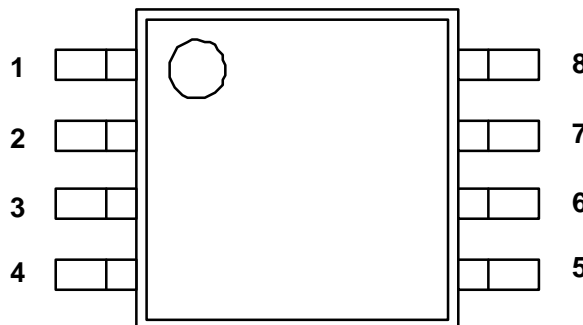
**Description and Applications**

M/A-COM's MA4EX1201-1300 is a Passive GaAs MMIC Schottky Diode Double Balanced Mixer designed for 11-15 GHz Operation.

The GaAs Quad Schottky diodes are fabricated on OMCVD epitaxial wafers using a process designed for repeatable electrical characteristics and extremely low parasitics.

These mixers are well suited for high volume applications where small size and exceptional performance are required. Typical applications include frequency conversion (Up/Down Converters).

**MSOP-8 Package Outline  
(Topview)**



**PIN Configuration**

PIN	Function	PIN	Function
1	GND	5	IF
2	LO	6	N/C
3	N/C	7	RF
4	N/C	8	GND

**Electrical Specifications @ +25 °C**

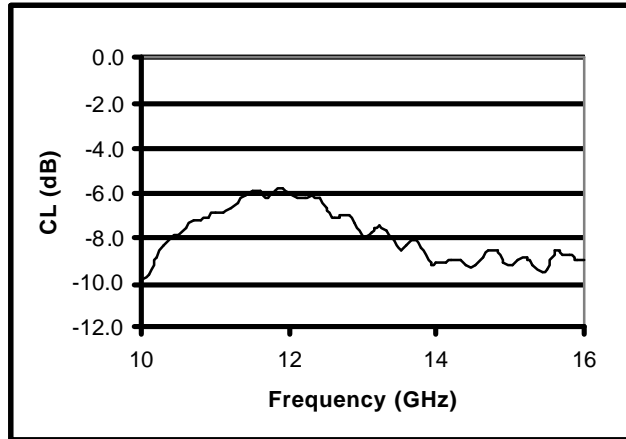
Parameter	Frequency Range	Test Conditions	Units	Min.	Typ.	Max.
Conversion Loss	11-15 GHz 12 GHz 14 GHz	LO Drive = +13 dBm, IF = 1.45 GHz	dB		7.5 5.9 9.1	10.0
L - R Isolation	11-15 GHz 12 GHz 14 GHz	LO Drive = +13 dBm, IF = 1.45 GHz	dB		39.0 34.0 43.0	
L - I Isolation	11-15 GHz 12 GHz 14 GHz	LO Drive = +13 dBm, IF = 1.45 GHz	dB		28.0 28.0 26.0	
R - I Isolation	11-15 GHz 12 GHz 14 GHz	LO Drive = +13 dBm, IF = 1.45 GHz	dB		18.0 15.0 23.0	
Input IP3	11-15 GHz 12 GHz 14 GHz	LO Drive = +13 dBm, IF = 1.45 GHz	dBm		15.3 12.9 16.6	
Input 1 dB Compression	11-15 GHz 12 GHz 14 GHz	LO Drive = +13 dBm, IF = 1.45 GHz	dBm		8.0 5.0 11.0	

**GaAs MMIC Double Balanced  
11-15 GHz Mixer**

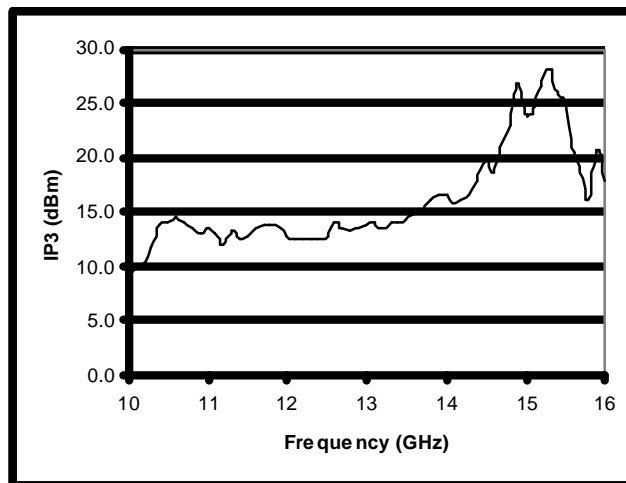
**MA4EX1201-1300T  
V1**

**Typical Performance Curves (LO Drive = +13 dBm, RF = -10 dBm)**

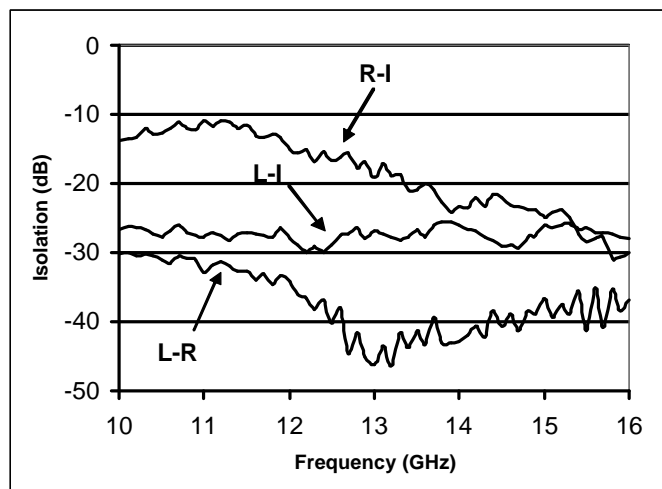
**Conversion Loss**



**Input IP3**



**Isolation**



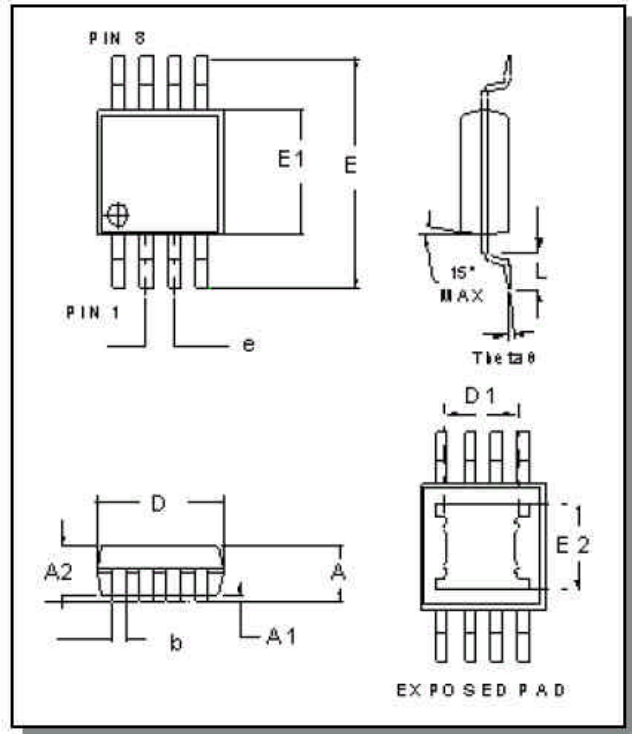
**GaAs MMIC Double Balanced  
11-15 GHz Mixer**

**MA4EX1201-1300T  
V1**

**MSOP-8 (Exposed Pad) Outline**

**MSOP-8EP Plastic Package**

Dimensions	Measurement (mm)		Measurement (inches)	
	Min.	Max.	Min.	Max.
A	0.80	1.10	0.0315	0.0433
A1	0.026	0.076	0.0010	0.0030
A2	0.75	0.95	0.0295	0.0374
b	0.25	0.40	0.0098	0.0157
D	2.90	3.10	0.1142	0.01220
D1	1.85 ref.	1.85 ref.	0.073 ref.	0.073 ref.
E	4.90 basic	4.90 basic	0.1929 basic	0.1929 basic
E1	2.90	3.10	0.1142	0.1220
E2	1.73 ref.	1.73 ref.	0.068 ref.	0.068 ref.
e	0.65 basic	0.65 basic	0.0256 basic	0.0256 basic
L	0.40	1.70	0.0157	0.0276
Theta (θ)	0°	6°	0°	60°



**Ordering Information**

Part Number	Package
MA4EX1201-1300	Tube
MA4EX1201-1300T	Tape and Reel