



# E-Series Surface Mount Mixer 810 – 1000 MHz

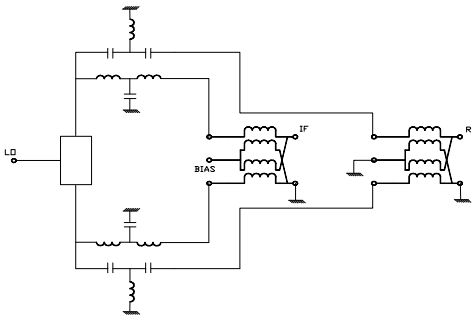
### Features

- LO Power +13 dBm
- +22dB Compression Point
- Surface Mount
- +30dBm IIP3
- Up and Down converting

### Description

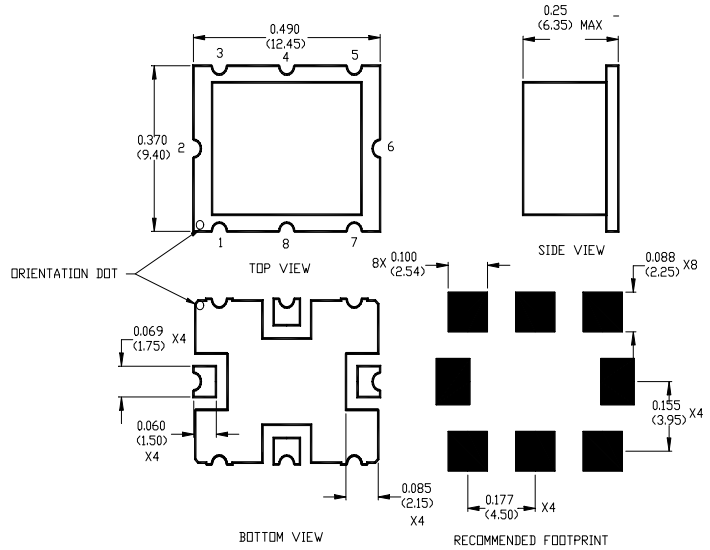
M/A-COM’s EFM-900 is a low cost , high IP3 PHEMT mixer.

### Schematic



### SM-108 Package

Note: Non Hermetic Package



### Electrical Specifications @ +25°C

Parameter	Units	Minimum	Typical	Maximum
Frequency Range	RF 810 - 1000 MHz LO 700 - 1000 MHz IF 10 - 100 MHz DC bias 3V ± 0.3V	—	—	—
Conversion Loss	810 - 1000 MHz	dB	8.5	9.5
L - R Isolation	700 - 1000 MHz	dB	18.0	22.0
L - I Isolation	700 - 1000 MHz	dB	25.0	33.0
R - I Isolation	810 - 1000 MHz	dB	30.0	37.0
LO VSWR	700 - 1000 MHz	—	1.8	
RF VSWR	810 - 1000 MHz	—	3.5	
IF VSWR	10 - 100 MHz	—	1.4	
Input IP3		dBm	28.0	30.0
Input 1dB Compression		dBm	—	+22.0

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**Absolute Maximum Ratings**

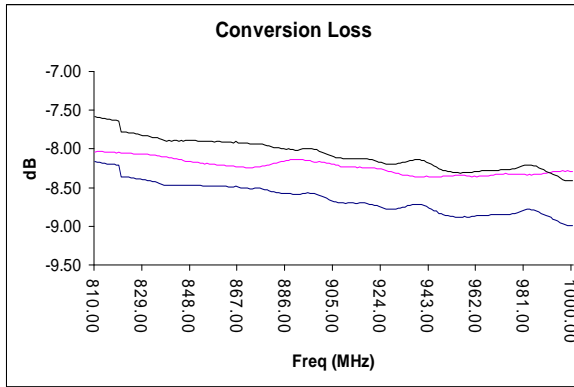
Parameter	Absolute Maximum
RF Power	200 mW
Peak IF Current	40 mA
Storage Temperature	-40°C to +85°C
Operating Temperature	-40°C to +85°C
ESD Rating	Zero

**Pin Configuration**

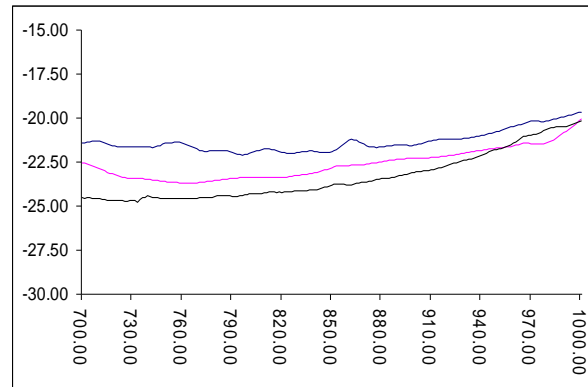
Function	Pin No.
LO	2
RF	6
IF	4
BIAS	8
Ground	1,3,5,7
Unconnected	—

**Typical Performance**

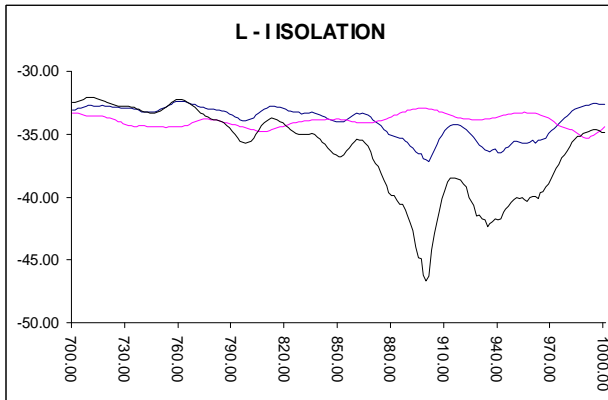
**Conversion Loss**



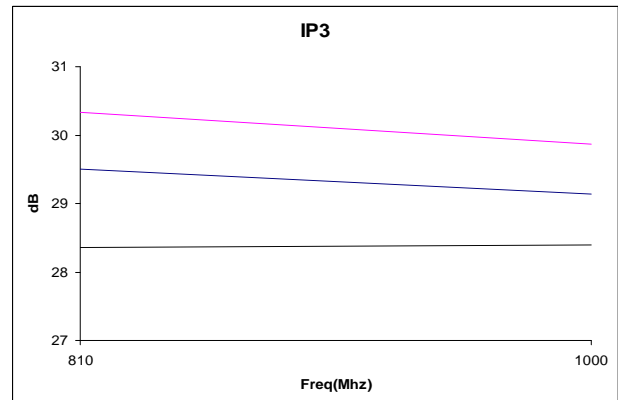
**L - R Isolation**



**L-I Isolation**



**IIP3**



**1dB Compression Point**

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**Spurious Table: 810MHz**

(In dBc below IF, assuming down conversion)

		nf <sub>LO</sub> - mf <sub>RF</sub>				
RF	0	X	27	32	32	45
	1	25	0	53	43	59
	2	77	77	54	77	77
	(n)	3	77	77	77	77
		4	77	77	77	77
		0	1	2	3	4

LO (m)

RF = 810 MHz, -5dBm  
 LO = 800 MHz, +13dBm  
 IF = 10 MHz

**Spurious Table: 810MHz**

(In dBc below IF, assuming down conversion)

		nf <sub>LO</sub> - mf <sub>RF</sub>				
RF	0	X	29	32	30	37
	1	25	0	35	48	48
	2	77	77	58	73	77
	(n)	3	77	77	77	77
		4	77	77	77	77
		0	1	2	3	4

LO (m)

RF = 810 MHz, 0dBm  
 LO = 710 MHz, +13dBm  
 IF = 100 MHz

**Spurious Table: 1000MHz**

(In dBc below IF, assuming down conversion)

		nf <sub>LO</sub> - mf <sub>RF</sub>				
RF	0	X	19	23	26	34
	1	29	0	48	43	52
	2	77	77	53	77	77
	(n)	3	77	77	77	70
		4	77	77	77	77
		0	1	2	3	4

LO (m)

RF = 1000 MHz, 0dBm  
 LO = 990 MHz, +13dBm  
 IF = 10 MHz

**Spurious Table: 1000MHz**

(In dBc below IF, assuming down conversion)

		nf <sub>LO</sub> - mf <sub>RF</sub>				
RF	0	X	20	25	27	33
	1	28	0	45	43	53
	2	77	77	52	77	77
	(n)	3	77	77	77	77
		4	77	77	77	77
		0	1	2	3	4

LO (m)

RF = 1000 MHz, 0dBm  
 LO = 900 MHz, +13dBm  
 IF = 100 MHz

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