

E-Series Surface Mount Mixer 810 – 1000 MHz



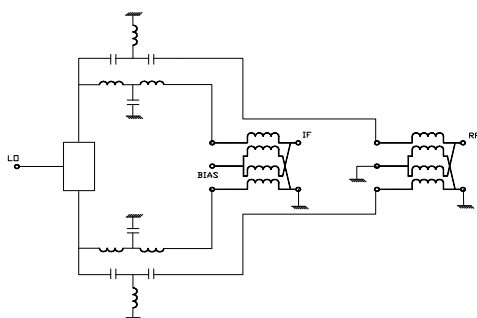
Features

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

Description

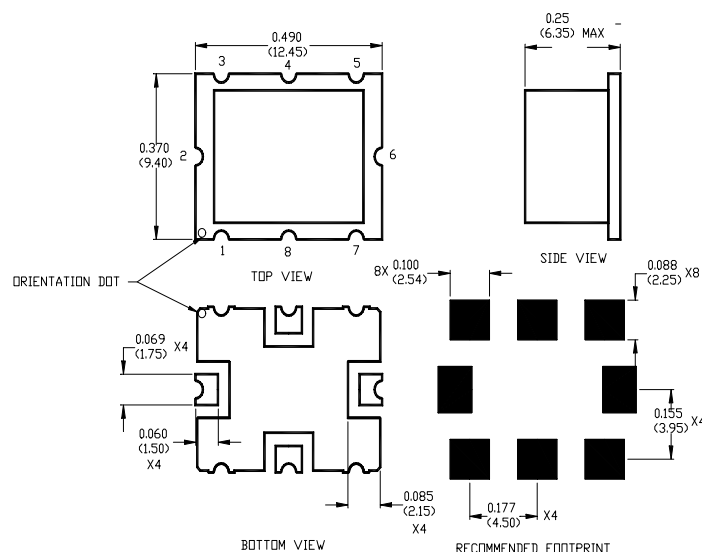
M/A-COM's EFM-900 is a low cost , high IP3 PHEMT mixer.

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	—

V1.00 S 1461 B

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Absolute Maximum Ratings

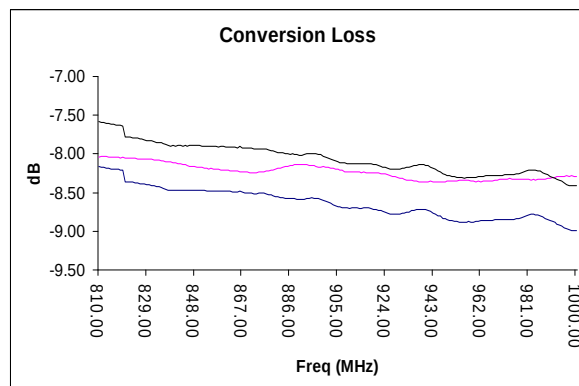
Parameter	Absolute Maximum
RF Power	200 mW
Peak IF Current	40 mA
Storage Temperature	-40°C to +85°C
Operating Temperature	-40°C to +85°C
ESD Rating	Zero

Pin Configuration

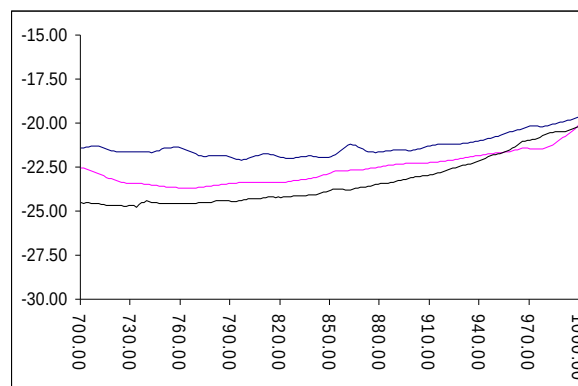
Function	Pin No.
LO	2
RF	6
IF	4
BIAS	8
Ground	1,3,5,7
Unconnected	—

Typical Performance

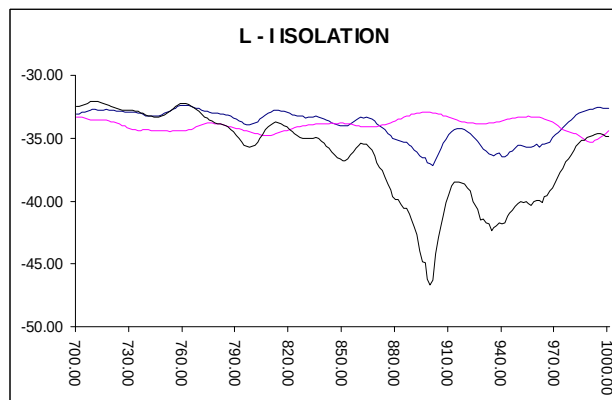
Conversion Loss



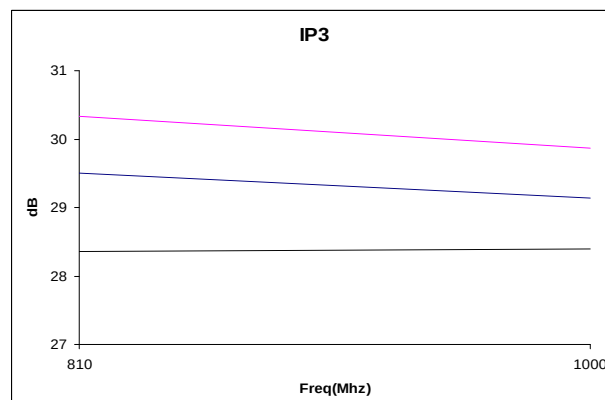
L - R Isolation



L-I Isolation



IIP3



1dB Compression Point

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Spurious Table: 810MHz

(In dBc below IF, assuming down conversion)

		nf _{LO} - mf _{RF}				
		0	X	27	32	45
RF	1	25	0	53	43	59
	2	77	77	54	77	77
	(n)	3	77	77	77	77
	4	77	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 _{LO} - mf _{RF}				
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	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)

(in dBs below 11, assuming down conversion)						
		nf _{LO} - mf _{RF}				
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	77
	4	77	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)

(in dBc below 11, assuming down conversion)						
RF (n)		nf _{LO} - mf _{RF}				
	0	X	20	25	27	33
	1	28	0	45	43	53
	2	77	77	52	77	77
	3	77	77	77	77	77
	4	77	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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