

E-Series Surface Mount Mixer

810 – 1000 MHz



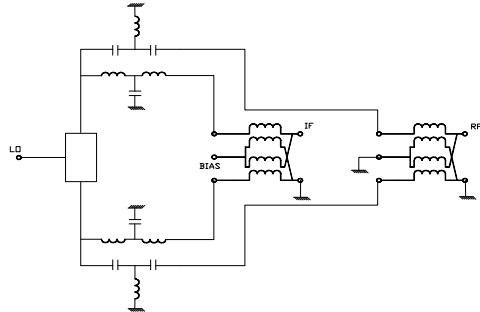
Features

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

Description

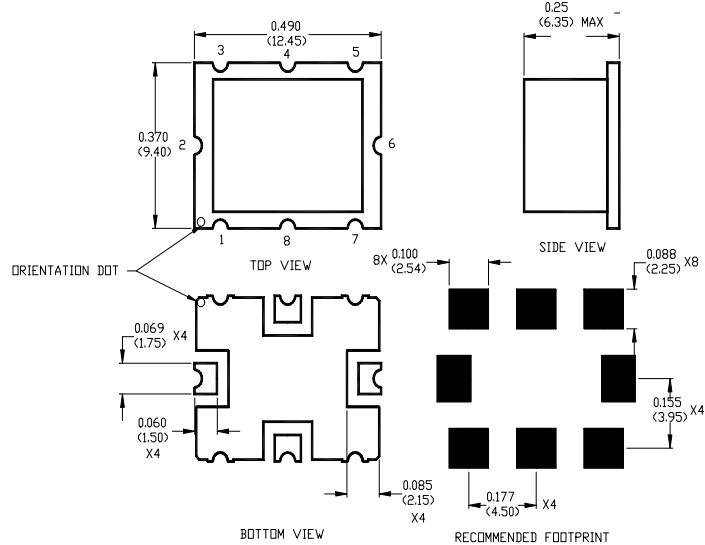
M/A-COM's EFM-900 is a low cost, high IP3 PHEMT mixer.

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	dB	—	8.5	9.5
L - R Isolation	dB	18.0	22.0	—
L - I Isolation	dB	25.0	33.0	—
R - I Isolation	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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- **North America** Tel: 800.366.2266
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Absolute Maximum Ratings

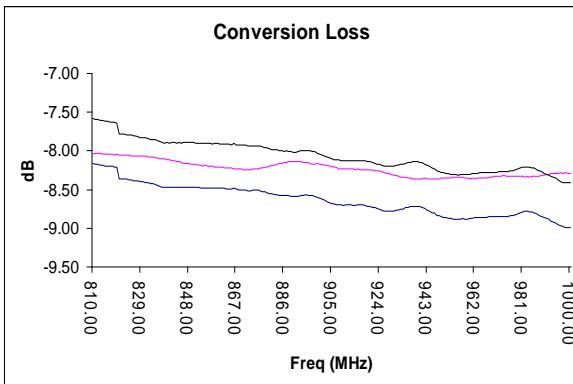
Parameter	Absolute Maximum
RF Power	200 mW
Peak IF Current	40 mA
Storage Temperature	-40°C to +85°C
Operating Temperature	-40°C to +85°C
ESD Rating	Zero

Pin Configuration

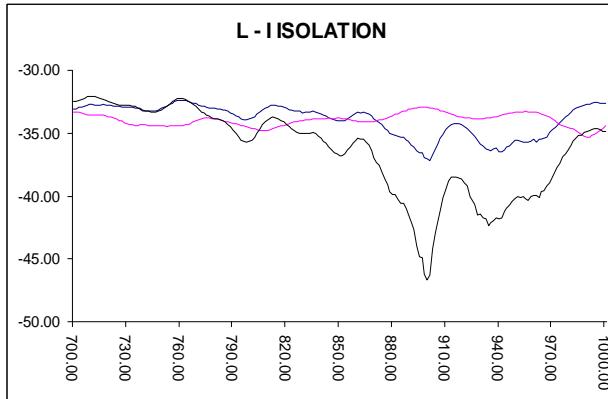
Function	Pin No.
LO	2
RF	6
IF	4
BIAS	8
Ground	1,3,5,7
Unconnected	—

Typical Performance

Conversion Loss

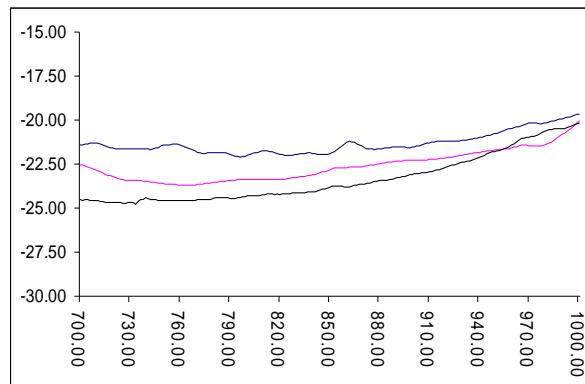


L-I Isolation

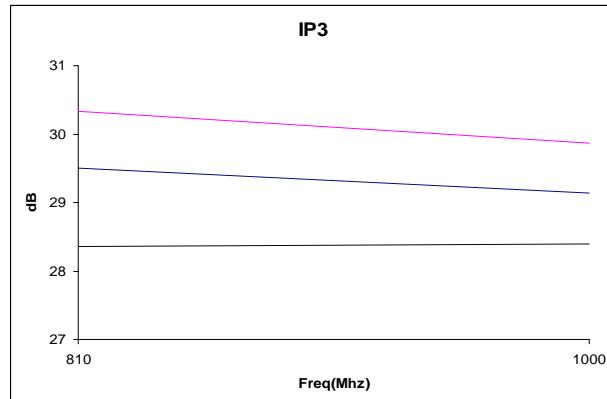


1dB Compression Point

L - R Isolation



IP3



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Spurious Table: 810MHz

(In dBc below IF, assuming down conversion)

		nf _{LO} - mf _{RF}					
RF		0	X	27	32	32	45
(n)	0	25	0	53	43	59	
RF	1	77	77	54	77	77	
(n)	1	77	77	77	77	77	
RF	2	77	77	77	77	77	
(n)	2	77	77	77	77	77	
RF	3	77	77	77	77	77	
(n)	3	77	77	77	77	77	
RF	4	77	77	77	77	77	
(n)	4	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
(n)	0	25	0	35	48	48	
RF	1	77	77	58	73	77	
(n)	1	77	77	77	77	77	
RF	2	77	77	77	77	77	
(n)	2	77	77	77	77	77	
RF	3	77	77	77	77	77	
(n)	3	77	77	77	77	77	
RF	4	77	77	77	77	77	
(n)	4	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 _{LO} - mf _{RF}					
RF		0	X	19	23	26	34
(n)	0	29	0	48	43	52	
RF	1	77	77	53	77	77	
(n)	1	77	77	77	70	77	
RF	2	77	77	77	77	77	
(n)	2	77	77	77	77	77	
RF	3	77	77	77	70	77	
(n)	3	77	77	77	77	77	
RF	4	77	77	77	77	77	
(n)	4	0	1	2	3	4	

LO (m)

RF = 1000 MHz, 0dBm

LO = 990 MHz, +13dBm

IF = 10 MHz

(In dBc below IF, assuming down conversion)

		nf _{LO} - mf _{RF}					
RF		0	X	20	25	27	33
(n)	0	28	0	45	43	53	
RF	1	77	77	52	77	77	
(n)	1	77	77	77	77	77	
RF	2	77	77	77	77	77	
(n)	2	77	77	77	77	77	
RF	3	77	77	77	77	77	
(n)	3	77	77	77	77	77	
RF	4	77	77	77	77	77	
(n)	4	0	1	2	3	4	

LO (m)

RF = 1000 MHz, 0dBm

LO = 900 MHz, +13dBm

IF = 100 MHz

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