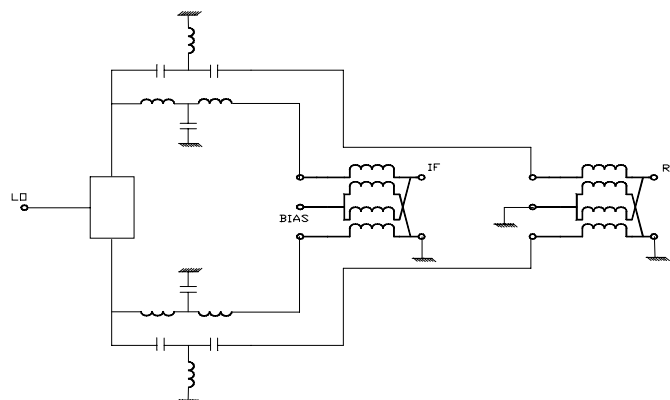




Functional Schematic



Features

- LO Power +13 dBm
- +22dB compression Point
- Surface Mount
- +32dBm IIP3
- Up and Down Converting

Description

M/A Com's EFM-2100 uses a novel, patent pending design to achieve very high linearity at low LO drive levels. Typically IP3 performance is +32dBm with an LO drive level of just +13dBm. The mixer combines PHEMT devices and carefully matched transformers in a surface mount package which can be used for both up and down converting. It is ideally suited for wireless

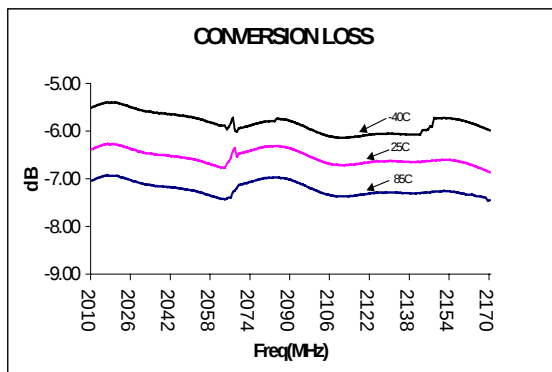
Electrical Specifications

	Test Conditions	Units	Min.	Typ.	Max.
Frequency Range	RF 2100 - 2170 LO 1650 - 2070 IF 100-500 DC bias +3V $\pm$ 0.3V	MHz MHz MHz	— — —	— — —	— — —
Conversion Loss	2110-2170 MHz	dB	—	8.5	10.0
L-R Isolation	1650-2070 MHz	dB	10.0	16.0	—
L- I Isolation	1650-2070 MHz	dB	20.0	25.0	—
R-I Isolation	2110-2170 MHz	dB	25	35	—
LO VSWR	1650-2070 MHz	—	—	2.5	—
RF VSWR	2110-2170 MHz	—	—	2.8	—
IF VSWR	100-500 MHz	—	—	1.8	—
Input IIP3	Up Converting	dBm	30.0	34.0	—
Input IIP3	Down Converting	dBm	30.0	34.0	—
Input IdB Compression	—	dBm	—	+22.0	—

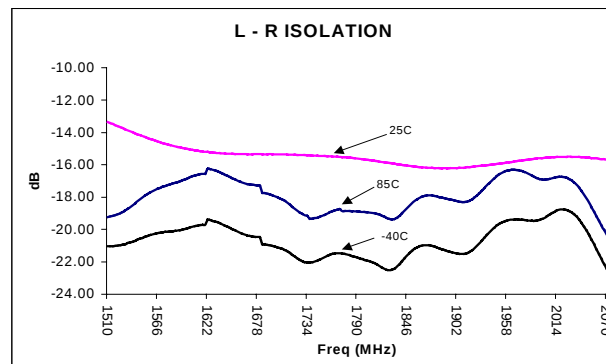
Note: Specifications subject to change without notice.

Typical Performance over Operating Temperatures

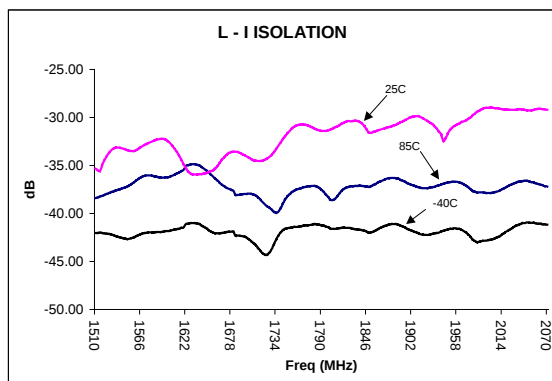
Conversion Loss



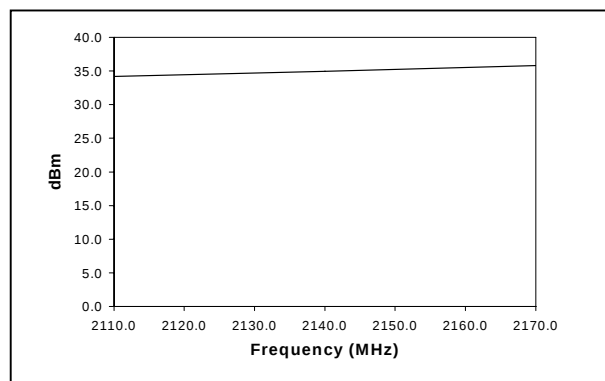
L - R Isolation



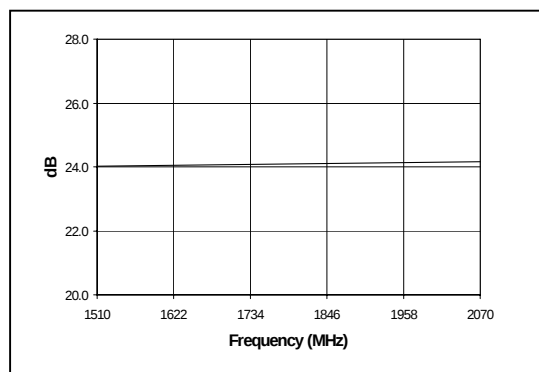
L - I Isolation



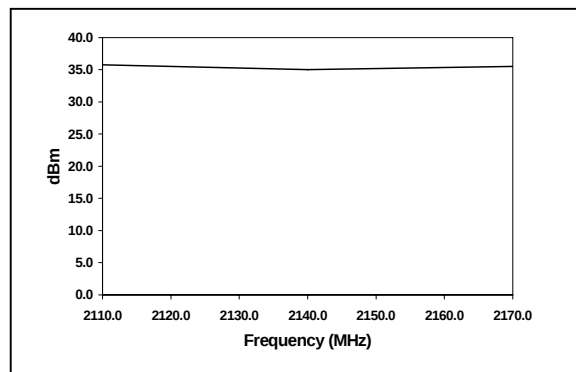
IIP3 Up- Converting



1dB compression Point



IIP3 Down-Converting



Specifications subject to change without notice.

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 ■ Asia/Pacific: Tel.+81-44-844-8296, Fax +81-44-844-8298
 ■ Europe: Tel. +44 (1344) 869 595, Fax+44 (1344) 300 020

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Absolute Maximum Ratings

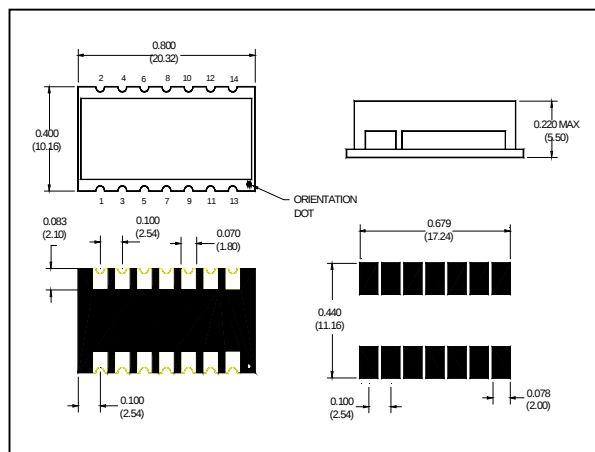
Parameter	Absolute Maximum
RF Power	200 mW
Peak IF Current	40 mA
Storage Temperature	-40 ° C to +85 ° C
Operating Temperature	-40 ° C to +85 ° C
ESD Rating	Zero

Functional Configuration

Function	Pin No.
LO	9
RF	2
IF	14
Ground	1,3,4,5,6,7,8,10,11,12
Case Ground	-
Bias	13

SM-106 Package

Note: Non Hermetic Package



V1 01

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Spurious Table: 2100MHz

(In dBc below IF, assuming down conversion)

		$nf_{LO} - mf_{RF}$				
RF	0	X	9	17	22	30
	1	35	0	37	57	45
	2	77	77	56	77	77
	(n)	3	77	77	77	70
	4	77	77	77	77	77
		0	1	2	3	4

LO (m)

RF = 2110 MHz, 0dBm
 LO = 2010 MHz, +13dBm
 IF = 100 MHz

Spurious Table: 2100MHz

(In dBc below IF, assuming down conversion)

		$nf_{LO} - mf_{RF}$				
RF	0	X	8	12	10	23
	1	25	0	28	59	61
	2	77	77	62	52	77
	(n)	3	77	77	77	70
	4	77	77	77	77	77
		0	1	2	3	4

LO (m)

RF = 2100 MHz, 0dBm
 LO = 1610 MHz, +13dBm
 IF = 500 MHz

Spurious Table: 2170MHz

(In dBc below IF, assuming down conversion)

		$nf_{LO} - mf_{RF}$				
RF	0	X	10	13	22	32
	1	33	0	45	59	47
	2	70	77	48	74	69
	(n)	3	71	77	77	66
	4	77	77	77	77	77
		0	1	2	3	4

LO (m)

RF = 2170 MHz, 0dBm
 LO = 2070 MHz, +13dBm
 IF = 100 MHz

Spurious Table: 2170MHz

(In dBc below IF, assuming down conversion)

		$nf_{LO} - mf_{RF}$				
RF	0	X	10	12	16	17
	1	34	0	39	54	65
	2	73	77	65	60	77
	(n)	3	77	77	77	77
	4	77	77	77	77	77
		0	1	2	3	4

LO (m)

RF = 2170 MHz, 0dBm
 LO = 1670 MHz, +13dBm
 IF = 500 MHz

V1.01

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