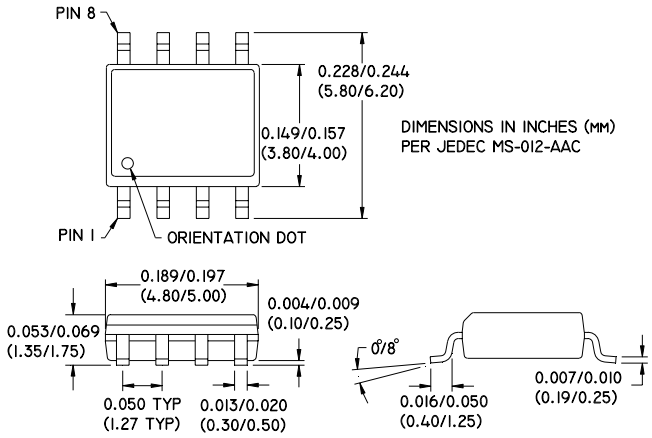
AMP M/A-COM

ISO 9001
CERTIFIED

E-Series HMIC Double Balanced Mixer
1400 - 2000 MHz EMD40-1800H

Features

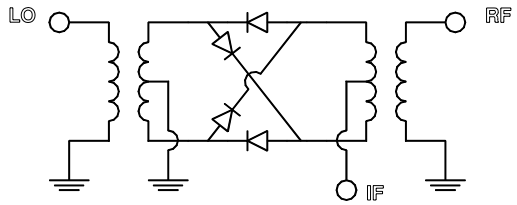
* SOIC-8 package
* IC process
* Low profile
* LO Drive +13dBm to +17dBm



Description

M/A-COM's EMD40-1800H is a passive double balanced mixer in a low cost, surface mount SOIC-8 package. Fabricated using a mature silicon process (HMIC), it is ideally suited for high volume cellular and wireless applications. Typical applications include frequency up/down conversion, modulation and demodulation in JDC (1500MHz), DCS (1800mhz), PHS (1900MHz) and PCS (1900MHz).

Schematic



Pin Configuration

Pin	Function	Pin	Function
1	GND	5	LO
2	IF	6	GND
3	GND	7	GND
4	GND	8	RF

Ordering Information

Part Number	Packaging
EMD40-1800H	Tube
EMD40-1800HTR	Tape and Reel

Specifications @ 25°C

Frequency Range	**1400 - 2000 MHz**		
Conversion Loss	**Maximum**	**Mean (x)**	**Sigma (σ)**
1400 - 1700 MHz	8.1 dB	6.76 dB	.07
1700 - 2000 MHz	9.5 dB	7.86 dB	0.11
L - R Isolation	**Minimum**	**Typical**	
1400 - 1700 MHz	28.0 dB	33.0 dB	
1700 - 2000 MHz	26.0 dB	28.5 dB	
L - I Isolation	**Minimum**	**Typical**	
1400 - 1700 MHz	24.0 dB	26.9 dB	
1700 - 2000 MHz	24.0 dB	26.8 dB	
LO VSWR	**Maximum**	**Typical**	
1400 - 1700 MHz	4.50	3.85	
1700 - 2000 MHz	4.00	3.36	
RF VSWR	**Maximum**	**Typical**	
1400 - 1700 MHz	3.50	1.92	
1700 - 2000 MHz	2.40	1.52	
IF VSWR	**Maximum**	**Typical**	
DC - 400 MHz	1.80	1.40	
Input IP3	**Minimum**	**Typical**	
1400 - 1700 MHz	11.5 dBm	15.0 dBm	
1700 - 2000 MHz	12.0 dBm	20.0 dBm	
IF 1.0 dB Bandwidth	DC - 500MHz		
Input 1dB Compression	+7.0 dBm		

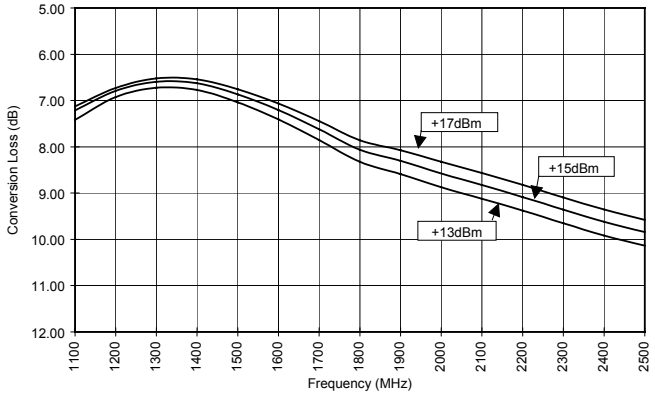
Test conditions: LO drive = +17dBm, IF frequency = 60MHz. Mean and sigma calculated at 1500MHz and 1800MHz. S1230B

Specifications Subject to Change Without Notice

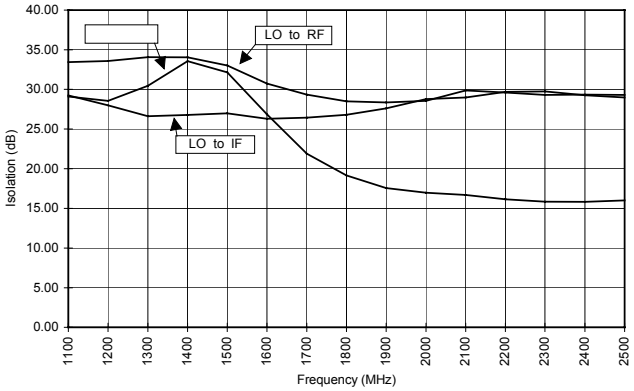
Typical Performance

Over Extended Bandwidth (1100MHz - 2500MHz)

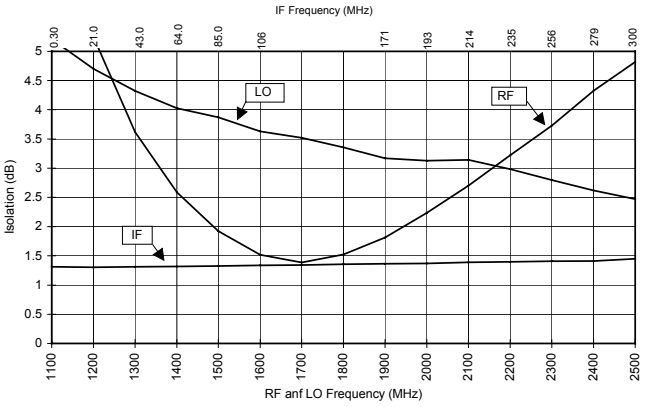
Conversion Loss



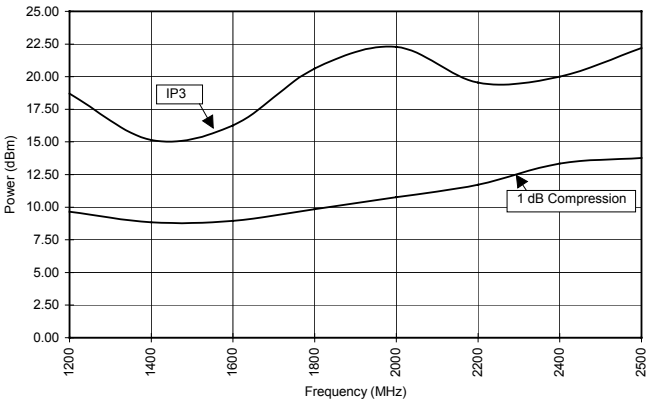
Isolation



VSWR



IP3 and 1dB Compression



Note: Conversion loss measured with fixed IF frequency of 60MHz. All measurements made with input power of +17dBm.

Spurious Table

(In dBc below IF, assuming down conversion)

		$nf_{LO} + mf_{RF}$					$nf_{LO} - mf_{RF}$				
	0	X	4	7	2	38	X	4	6	2	38
	1	11	0	30	32	42	11	0	27	12	30
RF	2	57	47	66	50	52	57	44	58	44	60
(n)	3	64	73	66	60	70	64	56	65	60	70
	4	89	88	81	82	88	90	81	85	80	87
		0	1	2	3	4	0	1	2	3	4

LO (m)

RF = 1842.5 MHz, -5dBm
LO = 1772.5 MHz, +17dBm

Absolute Maximum Ratings

Parameter	Absolute Maximum
RF Input Power	+27dBm
LO Drive Power	+27dBm
Operating/Storage Temp.	-40°C to +85°C

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