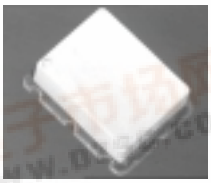
E-Series Surface Mount Mixer
80 - 2500 MHz

Features

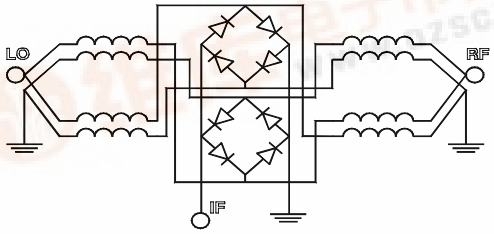


- LO Power +17 dBm
- Up to +14 dBm RF
- Surface Mount

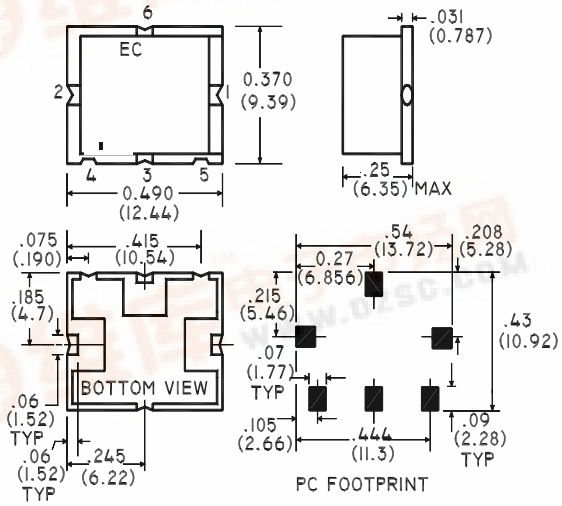
Description

M/A-COM's ESMD-C50H is a Low Cost, Passive Double Double Balanced Mixer. Constructed using very broad band ferrite balun transformers and matched silicon schottky diodes, it's performance is especially suited to high dynamic range receivers. Given it's high 1dB compression point, the ESMD-C50H is also suitable for Transmitter upconversion at any frequency up to 2.5GHz.

Schematic



SM-2 Package



Ordering Information

Part Number	Packaging
ESMD-C50H	Tube
ESMD-C50HTR	Tape and Reel

Electrical Specifications @ +25°C

Parameter		Units	Minimum	Typical	Maximum	Mean (x)	Sigma (σ)
Frequency Range	80 - 2500 MHz	—	—	—	—	—	—
Conversion Loss	80 - 1000 MHz	dB	—	—	7.5	6.10	0.15
L - R Isolation	80 - 1000 MHz	dB	25.0	33.5	—	—	—
L - I Isolation	80 - 1000 MHz	dB	26.0	31.5	—	—	—
R - I Isolation	80 - 1000 MHz	dB	20.0	26.9	—	—	—
LO VSWR	80 - 1000 MHz	—	—	1.42	2.0	—	—
RF VSWR	80 - 1000 MHz	—	—	1.72	2.8	—	—
IF VSWR	DC - 600 MHz	—	—	2.55	3.2	—	—
Input IP3	200 - 1000 MHz	dBm	21.0	27.0	—	—	—
Input 1dB Compression		dBm	—	+14.0	—	—	—

Test Conditions: LO Drive = +17dBm, IF frequency = 70MHz. Mean and Sigma calculated at 900MHz & 1800MHz.

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Absolute Maximum Ratings

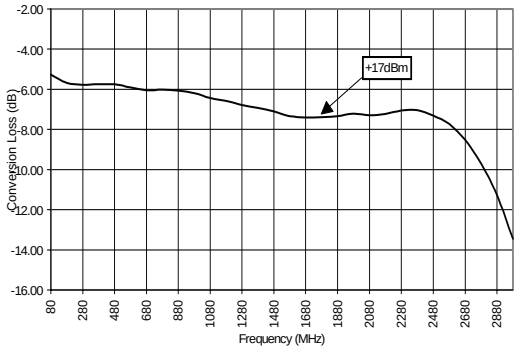
Parameter	Absolute Maximum
RF Input Power	+23dBm
LO Drive Power	+23 dBm
Operating/Storage Temperature	-40°C to +85°C

Pin Configuration

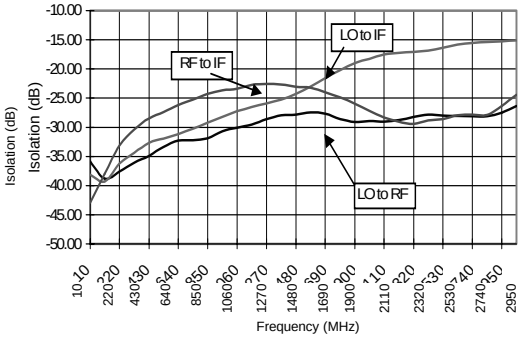
Function	Pin No.
RF	1
LO	2
IF	3
Ground	4,5,6

Typical Performance @ +25°C

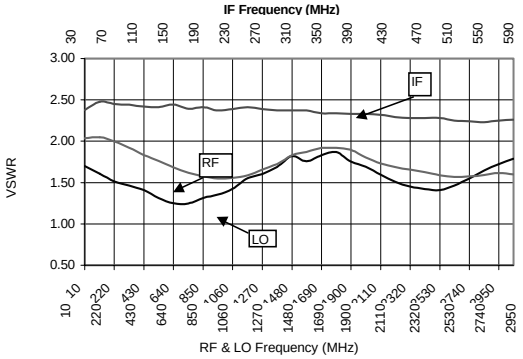
Conversion Loss



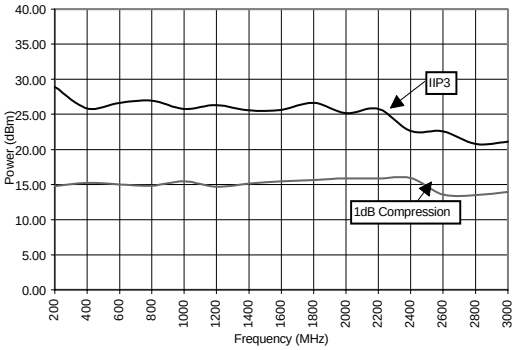
Isolation



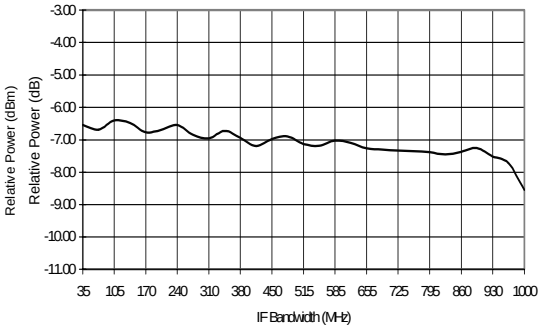
VSWR



IP3 and 1dB Compression



IF Bandwidth



Note: Conversion Loss measured with fixed IF frequency of 70MHz.
All measurements made with input power of +17dBm.

Specifications subject to change without notice.

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Spurious Table: 1800MHz

(In dBc below IF, assuming down conversion)

		$nf_{LO} - mf_{RF}$				
	0	X	-6	12	21	13
	1	29	0	35	18	42
RF	2	64	58	58	51	72
(n)	3	76	80	78	76	73
	4	83	85	85	82	85.34
		0	1	2	3	4
		LO (m)				

RF = 1842.50 MHz, -5dBm
LO = 1772.50 MHz, +17dBm
IF = 70 MHz

Spurious Table: 900MHz

(In dBc below IF, assuming down conversion)

		$nf_{LO} - mf_{RF}$				
	0	X	2	14	12	29
	1	20	0	37	12	39
RF	2	25	26	38	27	32
(n)	3	46	41	44	43	44
	4	57	56	54	55	57
		0	1	2	3	4
		LO (m)				

RF = 970 MHz, -5dBm
LO = 900 MHz, +17dBm
IF = 70 MHz

Spurious Table: 1900MHz

(In dBc below IF, assuming down conversion)

		$nf_{LO} - mf_{RF}$				
	0	X	-8	21	16	19
	1	24	0	39	17	50
RF	2	29	32	29	22	31
(n)	3	51	46	51	41	50
	4	52	55	55	52	55
		0	1	2	3	4
		LO (m)				

RF = 1960 MHz, -5dBm
LO = 1890 MHz, +17dBm
IF = 70 MHz

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