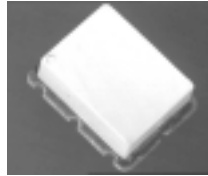


# M/A-COM E-Series Surface Mount Mixer

## 80 - 2500 MHz

### Features

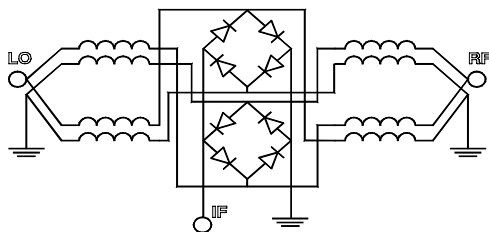
- LO Power +17 dBm
- Up to +14 dBm RF
- Surface Mount



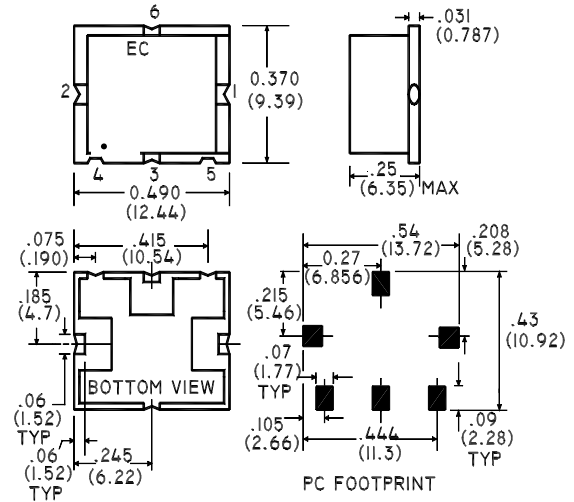
### Description

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	—	—	7.5	6.10	0.15
L - R Isolation	80 - 1000 MHz	25.0	33.5	—	—	—
L - I Isolation	80 - 1000 MHz	26.0	31.5	—	—	—
R - I Isolation	80 - 1000 MHz	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	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.

Specifications subject to change without notice.

S 1254 D

V 4.0

- North America: Tel. (800) 366-2266, Fax (800) 618-8883
- Asia/Pacific: Tel.+81-44-844-8296, Fax +81-44-844-8298
- Europe: Tel. +44 (1344) 869 595, Fax+44 (1344) 300 020



Visit [www.macom.com](http://www.macom.com) for additional data sheets and product information.

**Absolute Maximum Ratings**

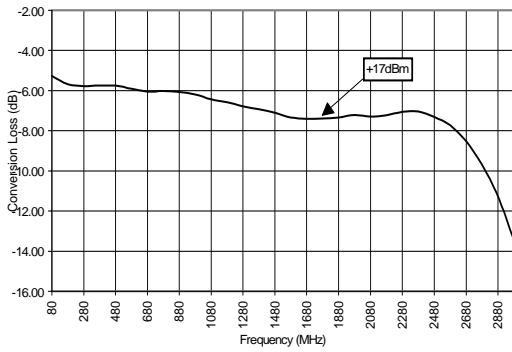
Parameter	Absolute Maximum
RF Input Power	+23dBm
LO Drive Power	+23 dBm
Operating/Storage Temperature	-40°C to +85°C

**Pin Configuration**

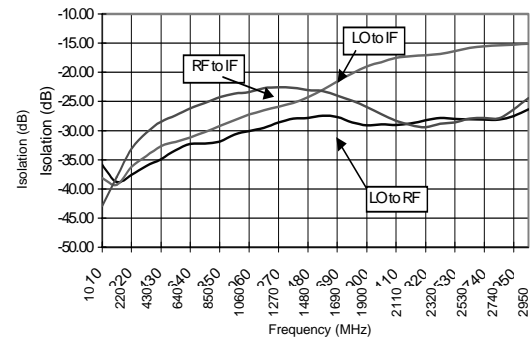
Function	Pin No.
RF	1
LO	2
IF	3
Ground	4,5,6

**Typical Performance @ +25°C**

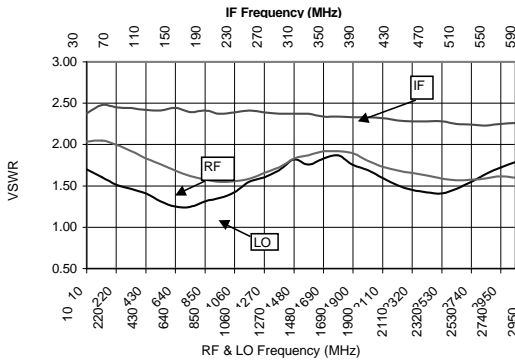
**Conversion Loss**



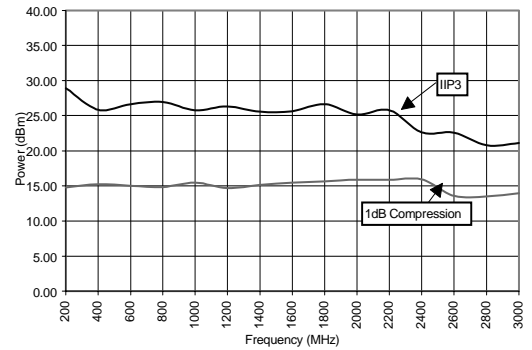
**Isolation**



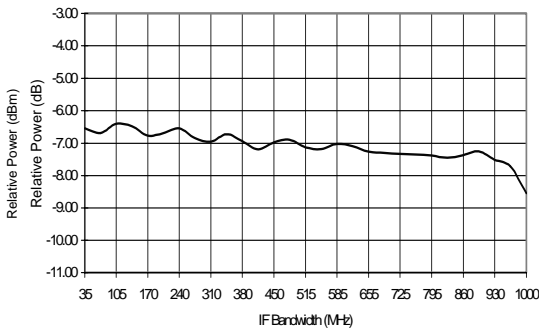
**VSWR**



**IP3 and 1dB Compression**



**IF Bandwidth**



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

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**Spurious Table: 1800MHz**

(In dBc below IF, assuming down conversion)

		nf <sub>LO</sub> - mf <sub>RF</sub>					
RF	0	X	-6	12	21	13	
	1	29	0	35	18	42	
	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 <sub>LO</sub> - mf <sub>RF</sub>					
RF	0	X	2	14	12	29	
	1	20	0	37	12	39	
	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 <sub>LO</sub> - mf <sub>RF</sub>					
RF	0	X	-8	21	16	19	
	1	24	0	39	17	50	
	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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