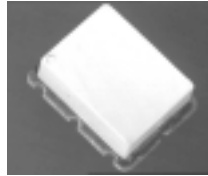


M/A-COM E-Series Surface Mount Mixer

80 - 2500 MHz

Features

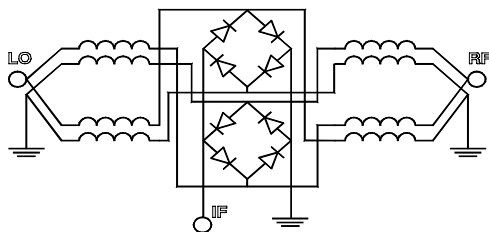
- LO Power +17 dBm
- Up to +14 dBm RF
- Surface Mount



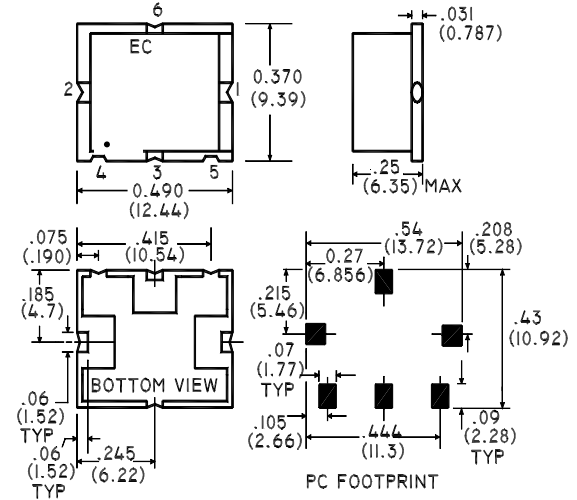
Description

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 for additional data sheets and product information.

Absolute Maximum Ratings

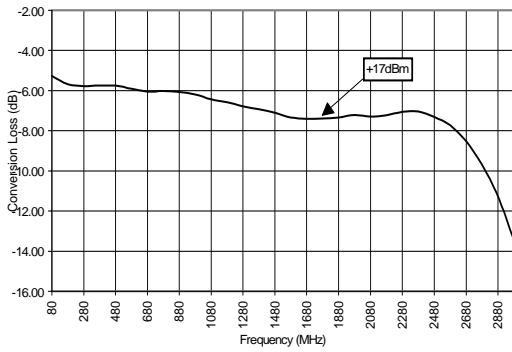
| Parameter | Absolute Maximum |
|-------------------------------|------------------|
| RF Input Power | +23dBm |
| LO Drive Power | +23 dBm |
| Operating/Storage Temperature | -40°C to +85°C |

Pin Configuration

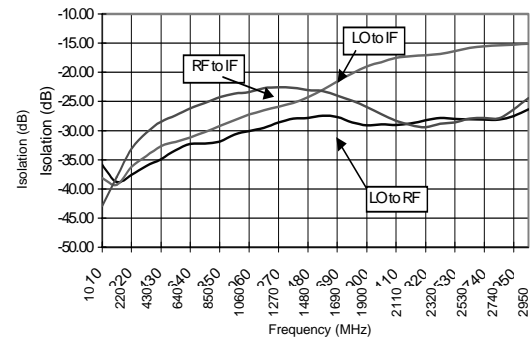
| Function | Pin No. |
|----------|---------|
| RF | 1 |
| LO | 2 |
| IF | 3 |
| Ground | 4,5,6 |

Typical Performance @ +25°C

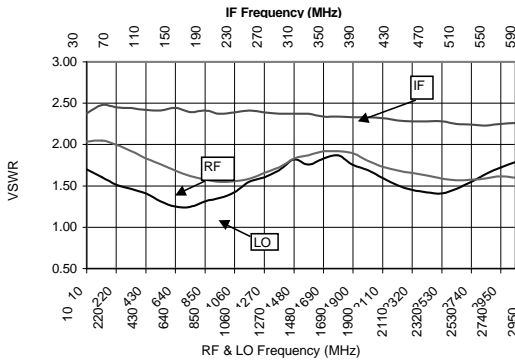
Conversion Loss



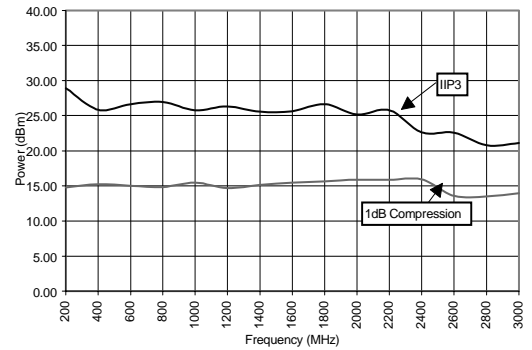
Isolation



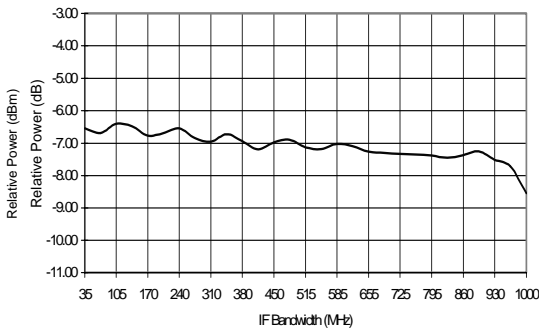
VSWR



IP3 and 1dB Compression



IF Bandwidth



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

Specifications subject to change without notice.

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Spurious Table: 1800MHz

(In dBc below IF, assuming down conversion)

| | | nf _{LO} - mf _{RF} | | | | | |
|----|-----|-------------------------------------|----|----|----|----|-------|
| 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 _{LO} - mf _{RF} | | | | | |
|----|-----|-------------------------------------|----|----|----|----|----|
| 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 _{LO} - mf _{RF} | | | | | |
|----|-----|-------------------------------------|----|----|----|----|----|
| 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

Specifications subject to change without notice.

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