

Frequency Mixer WIDE BAND

SIM-43LH+

Level 10 (LO Power +10 dBm) 824 to 4200 MHz



CASE STYLE: HV1195
PRICE: \$7.45 ea. QTY (10)

+RoHS Compliant
The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

Available Tape and Reel at no extra cost

| Reel Size | Devices/Reel |
|-----------|---------------------------|
| 7" | 10, 20, 50, 100, 200, 500 |

Maximum Ratings

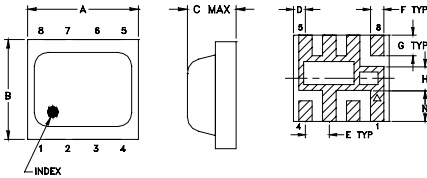
| | |
|-----------------------|----------------|
| Operating Temperature | -40°C to 85 °C |
| Storage Temperature | -55°C to 100°C |
| RF Power | 50mW |

For extended temperature range, consult factory.
Permanent damage may occur if any of these limits are exceeded.

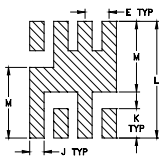
Pin Connections

| | |
|--------|-----------|
| LO | 8 |
| RF | 4 |
| IF | 2 |
| GROUND | 1,3,5,6,7 |

Outline Drawing



PCB Land Pattern

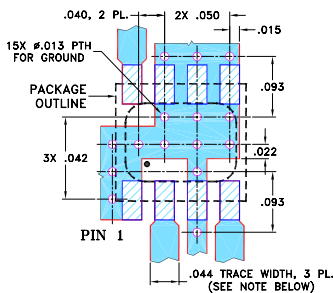


Suggested Layout,
Tolerance to be within ±0.002

Outline Dimensions (inch/mm)

| | | | | | | |
|------|------|------|-------|-------|-------|-------|
| A | B | C | D | E | F | G |
| .200 | .180 | .087 | .025 | .050 | .028 | .043 |
| 5.08 | 4.57 | 2.21 | 0.64 | 1.27 | 0.71 | 1.09 |
| H | J | K | L | M | N | wt |
| .050 | .030 | .060 | 0.238 | 0.144 | 0.065 | grams |
| 1.27 | 0.76 | 1.52 | 6.05 | 3.66 | 1.65 | 0.08 |

Demo Board MCL P/N: TB-382 Suggested PCB Layout (PL-239)



NOTES:

- TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .020" ± .0015"; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
- BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

- DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)
- DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

Features

- wide bandwidth, 824 to 4200 MHz
- low conversion loss, 6.1 dB typ.
- excellent L-R isolation, 35 dB typ.
- LTCC double balanced mixer
- tiny size, low profile, 0.08"
- useable as up and down converter
- aqueous washable
- protected by U.S Patent 7,027,795

Applications

- cellular
- defense & weather radar
- defense communications
- PCN
- WCDMA
- WIFI
- blue tooth
- VSAT
- ISM

Electrical Specifications

| FREQUENCY (MHz) | CONVERSION LOSS* (dB) | | | LO-RF ISOLATION (dB) | | LO-IF ISOLATION (dB) | | IP3 (dBm) |
|-----------------|-----------------------|----|--------------------|----------------------|------|----------------------|------|-----------|
| | LO/RF f_L-f_U | IF | Typ. σ Max. | Typ. | Min. | Typ. | Min. | |
| 824-4200 | DC-1500 | | | | | | | |
| 824-2500 | | | 6.3 0.1 8.6 | 37 | 30 | 24 | 11 | 14 |
| 2500-4200 | | | 5.7 0.1 8.2 | 32 | 24 | 20 | 14 | 15 |

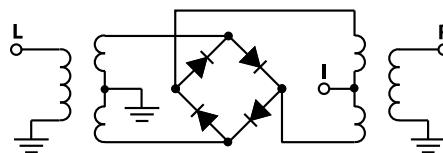
1 dB Compression: +5 dBm typ.

* Conversion loss at 30 MHz IF. σ is a measure of repeatability from unit to unit.

Typical Performance Data

| Frequency (MHz) | Conversion Loss (dB) | | Isolation L-R (dB) | Isolation L-I (dB) | VSWR RF Port (:1) | VSWR LO Port (:1) |
|-----------------|----------------------|--------|--------------------|--------------------|-------------------|-------------------|
| | LO | LO | LO | LO | LO | LO |
| | +10dBm | +10dBm | +10dBm | +10dBm | +10dBm | +10dBm |
| RF | LO | LO | LO | LO | LO | LO |
| 750 | 780 | 7.55 | 41.92 | 22.56 | 2.56 | 10.57 |
| 825 | 855 | 6.88 | 37.38 | 22.98 | 2.05 | 5.85 |
| 900 | 930 | 7.12 | 35.75 | 23.57 | 1.95 | 3.93 |
| 975 | 1005 | 7.17 | 36.24 | 24.79 | 2.18 | 2.96 |
| 1050 | 1080 | 6.47 | 39.72 | 25.94 | 2.42 | 2.17 |
| 1200 | 1230 | 6.11 | 43.12 | 27.55 | 2.93 | 1.26 |
| 1350 | 1380 | 5.82 | 39.73 | 30.36 | 2.84 | 1.26 |
| 1500 | 1530 | 5.59 | 37.27 | 34.19 | 2.75 | 1.56 |
| 1800 | 1830 | 6.03 | 37.26 | 23.93 | 2.45 | 1.88 |
| 1950 | 1980 | 5.94 | 36.44 | 17.10 | 2.31 | 1.67 |
| 2100 | 2130 | 5.92 | 36.15 | 15.02 | 2.33 | 1.52 |
| 2250 | 2280 | 6.07 | 36.52 | 16.08 | 2.50 | 1.55 |
| 2550 | 2580 | 6.50 | 37.80 | 19.56 | 2.75 | 1.57 |
| 2850 | 2880 | 5.46 | 31.42 | 22.05 | 1.59 | 1.11 |
| 3180 | 3210 | 5.21 | 31.85 | 29.71 | 1.33 | 1.14 |
| 3540 | 3570 | 5.72 | 32.36 | 23.89 | 1.66 | 1.53 |
| 3720 | 3750 | 5.95 | 30.75 | 19.56 | 2.04 | 1.86 |
| 3900 | 3930 | 6.46 | 32.04 | 18.94 | 2.24 | 2.06 |
| 4080 | 4110 | 6.55 | 34.73 | 20.53 | 2.37 | 2.67 |
| 4260 | 4290 | 7.07 | 32.75 | 17.67 | 2.73 | 3.60 |

Electrical Schematic



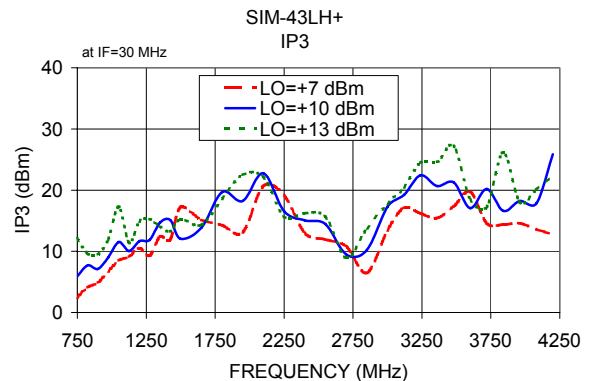
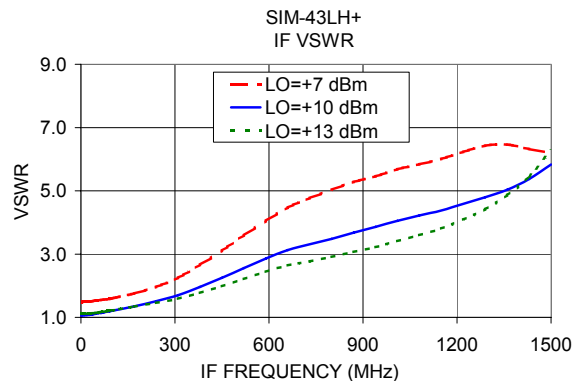
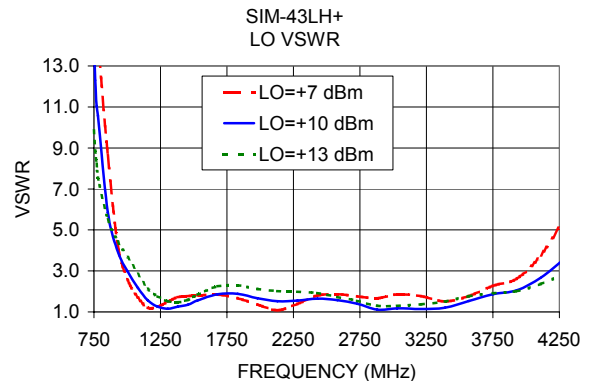
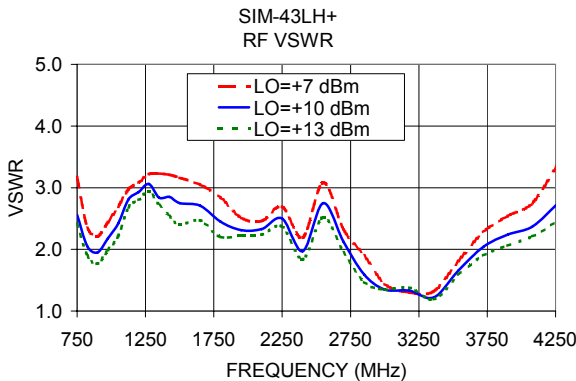
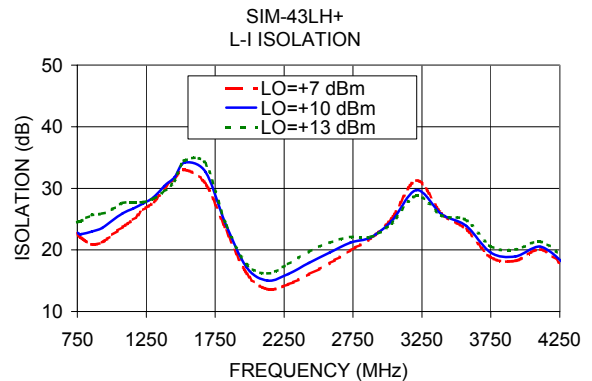
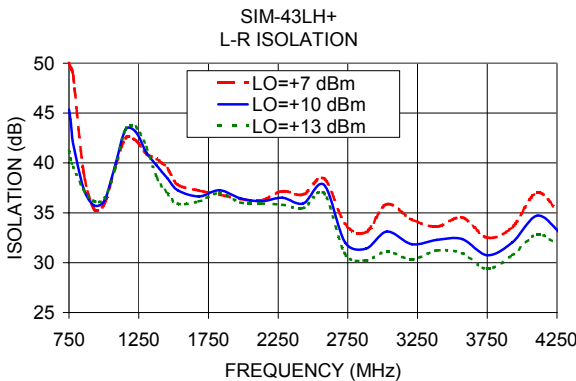
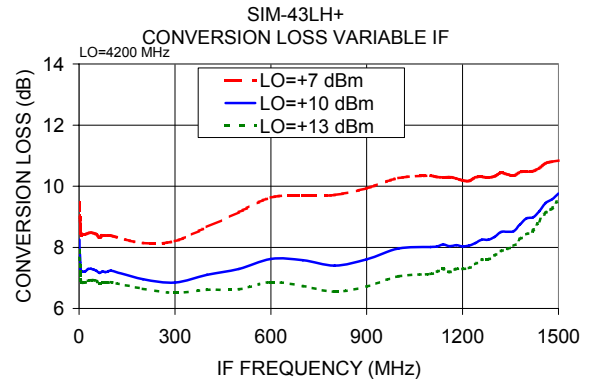
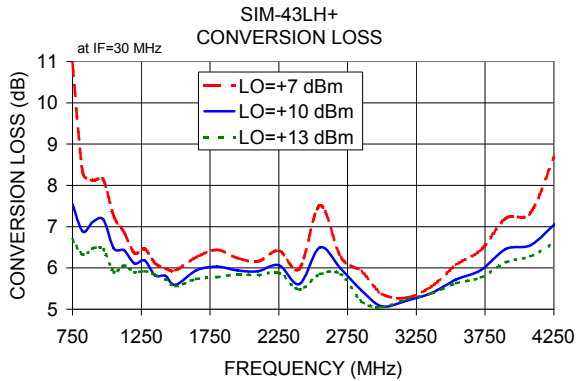
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