

Frequency Mixer WIDE BAND

SIM-43H+

Level 17 (LO Power +17 dBm) 1000 to 4000 MHz

Maximum Ratings

Operating Temperature -40°C to 85°C

Storage Temperature -55°C to 100°C

RF Power 100mW

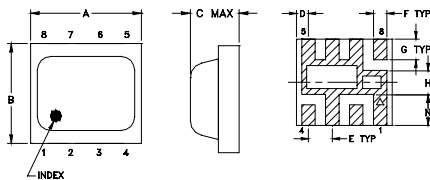
For extended temperature range, consult factory.

Permanent damage may occur if any of these limits are exceeded.

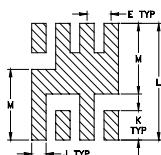
Pin Connections

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

Outline Drawing



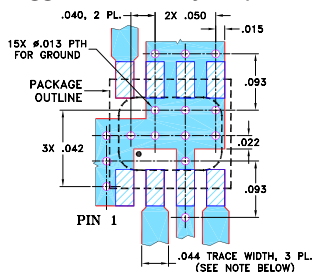
PCB Land Pattern

Suggested Layout,
Tolerance to be within ±0.02

Outline Dimensions (inch)

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

Notes

- Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
- Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
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Features

- wide bandwidth, 1000 to 4000 MHz, useable down to 800 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 US 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 at center band (dBm)
LO/RF f_L - f_U	IF	Typ.	σ	Max.	Typ.	Min.	Typ.	Min.	Typ.
1000-4000	DC-1500								
1000-2500		6.5	0.1	8.6	37	32	24	9	22
2500-4000		5.7	0.1	8.6	34	28	20	12	24

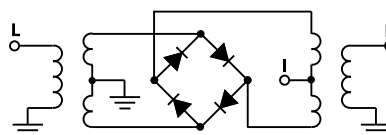
1 dB Compression: +14 dBm typ.

* 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)
RF	LO	LO +17dBm	LO +17dBm	LO +17dBm	LO +17dBm	LO +17dBm
975.00	1005.00	7.97	35.59	22.55	2.35	2.23
1050.00	1080.00	7.48	39.31	23.71	2.71	1.56
1200.00	1230.00	6.87	42.50	27.13	3.04	1.22
1350.00	1380.00	6.46	40.87	31.37	3.16	1.61
1500.00	1530.00	6.32	38.93	35.59	3.10	1.65
1650.00	1680.00	6.49	36.73	30.94	2.99	1.83
1800.00	1830.00	6.62	38.21	23.39	2.59	1.74
2025.00	2055.00	6.45	36.69	14.20	2.47	1.16
2100.00	2130.00	6.56	36.90	13.59	2.46	1.14
2250.00	2280.00	6.91	37.09	14.23	2.57	1.48
2400.00	2430.00	6.43	36.52	16.01	2.21	1.83
2550.00	2580.00	7.46	37.89	17.58	2.91	1.75
2700.00	2730.00	6.37	36.23	20.10	2.43	1.82
2850.00	2880.00	6.12	32.81	21.75	1.93	1.70
3000.00	3030.00	5.65	36.85	25.56	1.52	1.73
3105.00	3135.00	5.57	35.17	31.30	1.40	1.85
3180.00	3210.00	5.54	35.28	37.78	1.33	1.73
3540.00	3570.00	6.45	33.40	22.10	1.86	1.71
3900.00	3930.00	7.66	32.59	17.74	2.54	2.44
4080.00	4110.00	7.54	34.81	18.91	2.65	3.28

Electrical Schematic



CASE STYLE: HV1195

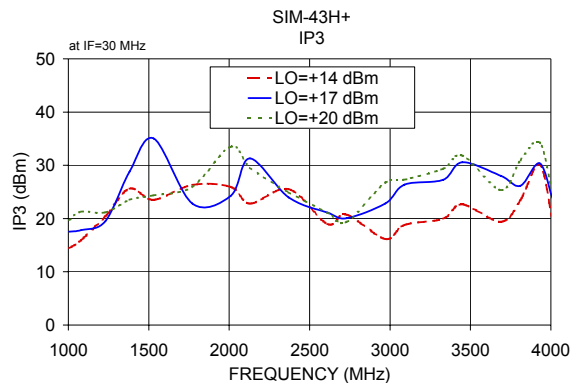
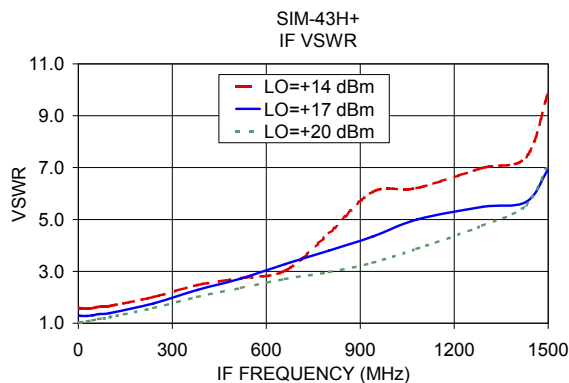
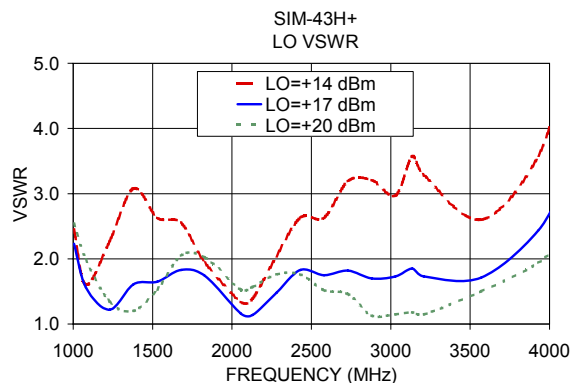
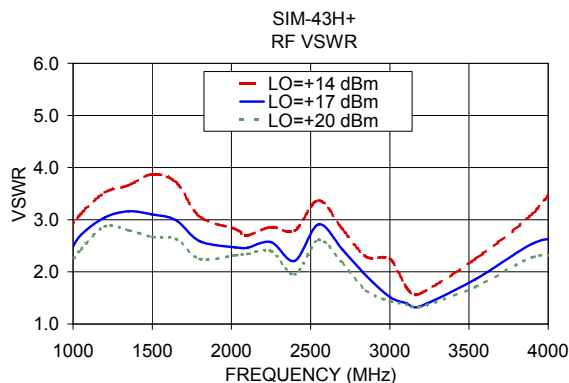
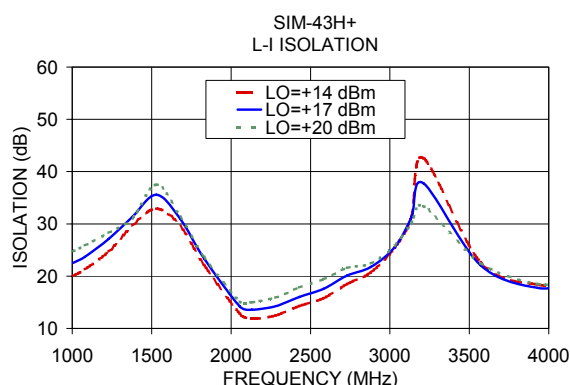
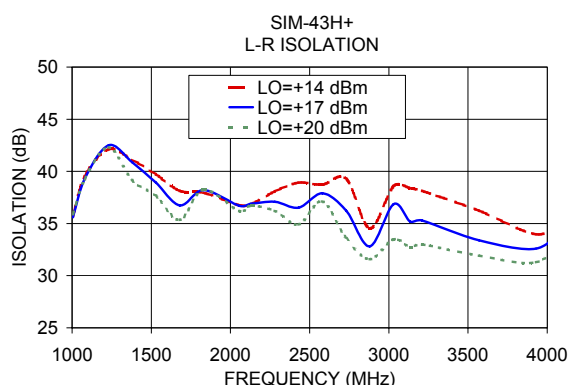
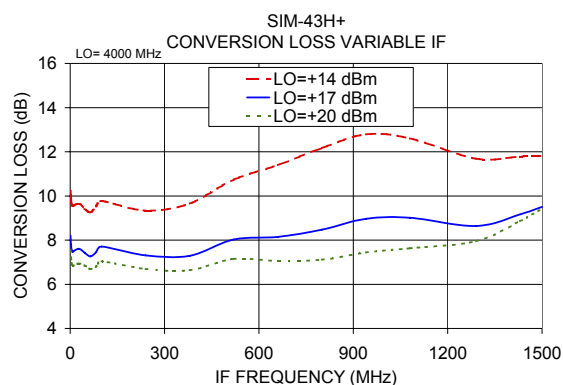
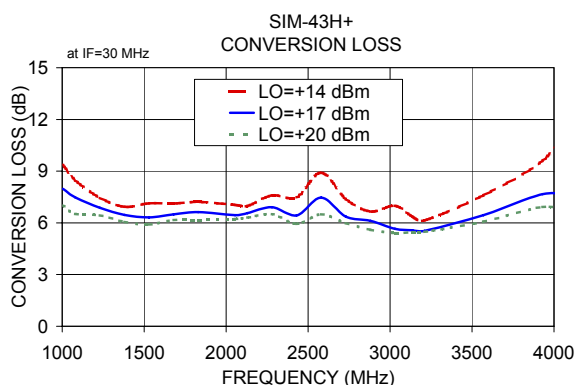
+RoHS Compliant

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



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