

Frequency Mixer WIDE BAND

SIM-43LH+

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



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

Maximum Ratings

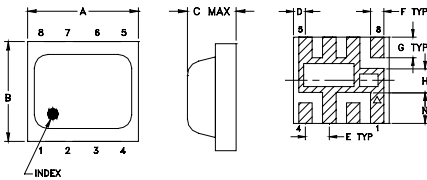
Operating Temperature	-40°C to 85 °C
Storage Temperature	-55°C to 100°C
RF Power	50mW

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

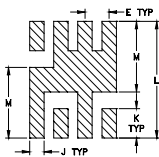
Pin Connections

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

Outline Drawing



PCB Land Pattern

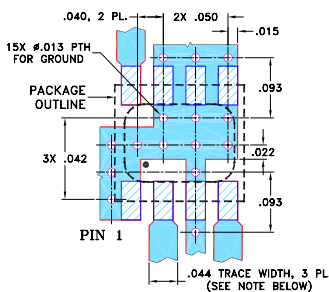


Suggested Layout,
Tolerance to be within ±0.002

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

Notes

- A. 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.
B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
C. The parts covered by this specification document are subject to Mini-Circuit's standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuit's website at www.minicircuits.com/MCLStore/terms.jsp

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

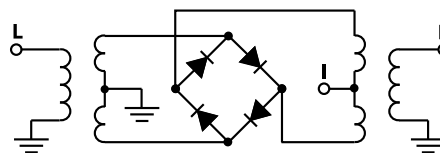
1 dB Compression: +5 dBm typ.

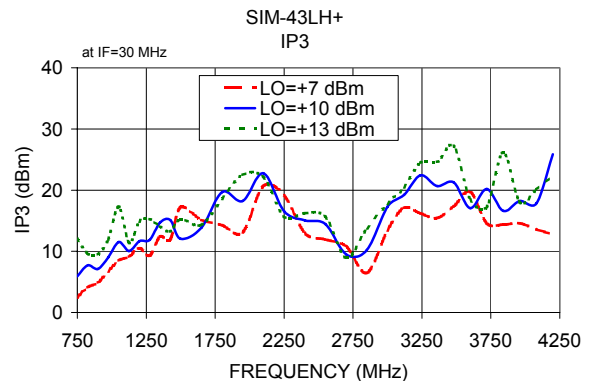
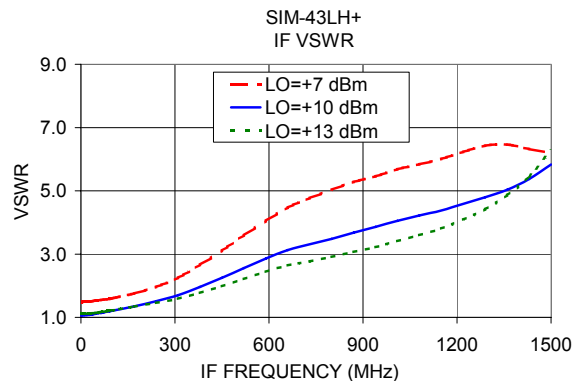
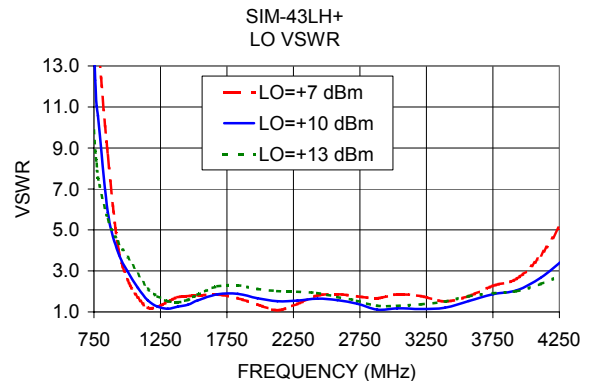
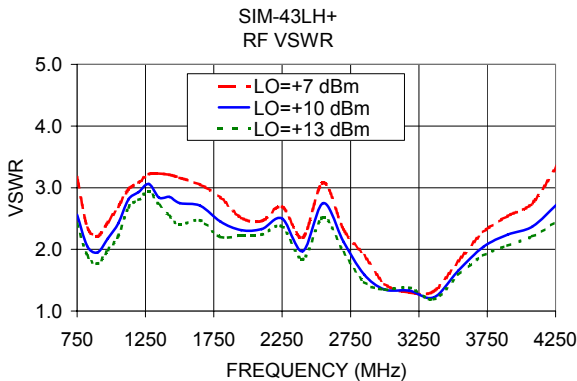
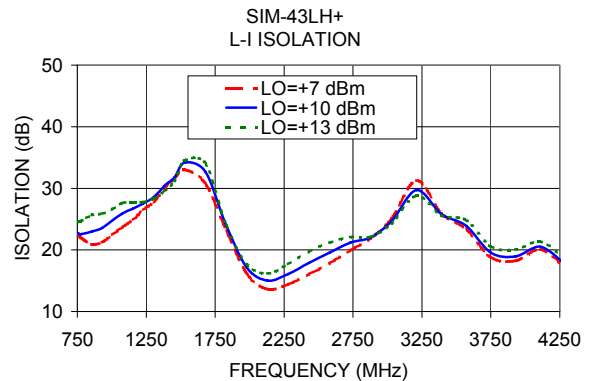
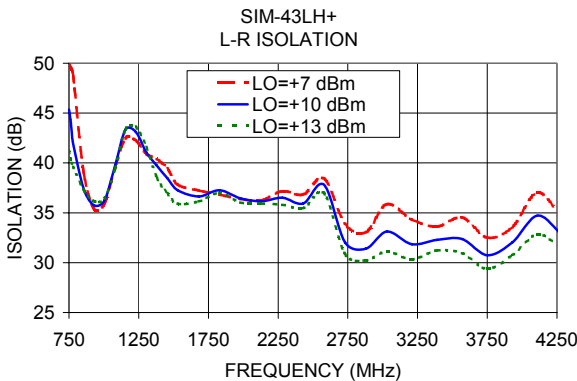
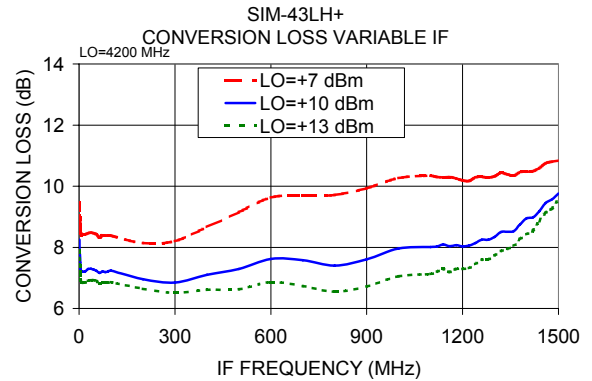
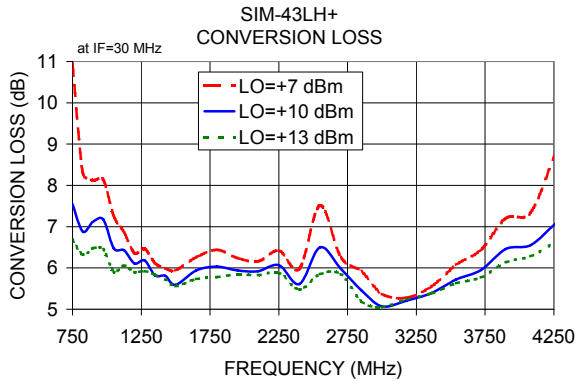
* Conversion loss at 30 MHz IF. σ is a measure of repeatability from unit to unit.

Typical Performance Data

Frequency (MHz)	Conversion Loss (dB)	Isolation L-R (dB)	Isolation L-I (dB)	VSWR RF Port (:1)	VSWR LO Port (:1)	
						RF
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





Notes

- A. 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.
- B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
- C. The parts covered by this specification document are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at www.minicircuits.com/MCLStore/terms.jsp

