

Frequency Mixer WIDE BAND

Level 10 (LO Power +10 dBm) 1700 to 8000 MHz

SIM-83LH+



Generic photo used for illustration purposes only

CASE STYLE: HV1195

Maximum Ratings

Operating Temperature -40°C to 85°C

Storage Temperature -55°C to 100°C

RF Power 50mW

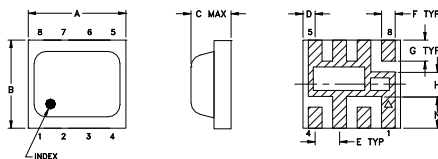
For extended temperature range, consult factory.

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

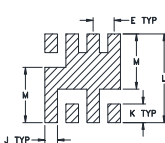
Pin Connections

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

Outline Drawing



PCB Metal Land Pattern

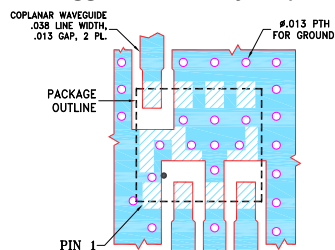


Suggested Layout, Tolerance to be within ±.002

Outline Dimensions (inch)

A	B	C	D	E	F	G
.200	.180	.087	.025	.050	.028	.043
5.08	4.57	2.2098	0.64	1.27	0.71	1.09
H	J	K	L	M	N	wt
.050	.030	.043	.204	.127	0.065	grams
1.27	0.76	1.09	5.18	3.23	1.65	0.08

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



NOTES:
1. TRACE WIDTH AND GAP ARE SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .020" ±.0015"; COPPER: 1/2 OZ. EACH SIDE.
FOR OTHER MATERIALS TRACE WIDTH AND GAP MAY NEED TO BE MODIFIED.
2. 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, 1700 to 8000 MHz
- low conversion loss, 6.0 dB typ.
- excellent IF BW, DC to 3000 MHz
- 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

- satellite up and down converters
- defense radar and communications
- line of sight links
- 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)
	Typ.	σ	Max.	Typ.	Min.	Typ.	Min.	
LO/RF $f_c - f_u$								
1700-8000								
1700-3200	6.0	0.1	7.9	33	25	23	17	10
3200-3700	5.7	0.1	6.7	30	24	23	18	15
3700-4200	5.8	0.1	7.2	31	24	28	18	18
4200-8000	6.0	0.2	8.9	23	16	18	8	11

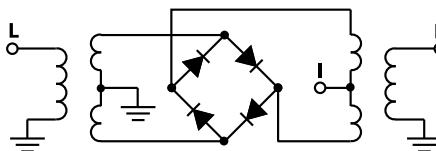
1 dB Compression: +3 dBm typ.

* 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 +10dBm	LO +10dBm	LO +10dBm	LO +10dBm	LO +10dBm
1700.00	1731.00	6.53	33.97	21.16	1.75	10.50
1800.00	1831.00	6.50	32.41	21.09	1.66	10.19
2000.00	2031.00	6.59	30.98	22.21	1.89	4.97
2300.00	2331.00	6.20	33.66	20.60	2.13	3.59
2600.00	2631.00	5.93	39.44	22.21	2.66	2.64
3000.00	3031.00	5.53	30.63	25.11	2.49	2.45
3400.00	3431.00	5.67	29.29	23.49	2.27	2.21
3800.00	3831.00	5.86	29.82	27.10	2.11	2.66
4200.00	4231.00	6.03	30.69	28.64	2.91	3.30
4600.00	4631.00	6.09	29.09	16.45	2.43	3.74
5000.00	5031.00	6.31	27.35	15.06	3.42	2.77
5400.00	5431.00	5.72	25.94	19.10	2.68	3.51
5800.00	5831.00	5.46	22.31	22.64	2.03	3.08
6200.00	6231.00	5.18	20.81	32.72	1.29	1.91
6600.00	6631.00	5.35	21.56	25.01	1.33	1.26
7000.00	7031.00	5.49	21.93	27.31	1.36	1.68
7400.00	7431.00	5.77	22.35	17.70	1.65	2.26
7700.00	7731.00	6.35	23.66	15.04	2.10	2.86
7900.00	7931.00	7.18	25.31	12.78	2.24	3.29
8000.00	8031.00	8.25	26.35	11.07	2.55	3.12

Electrical Schematic



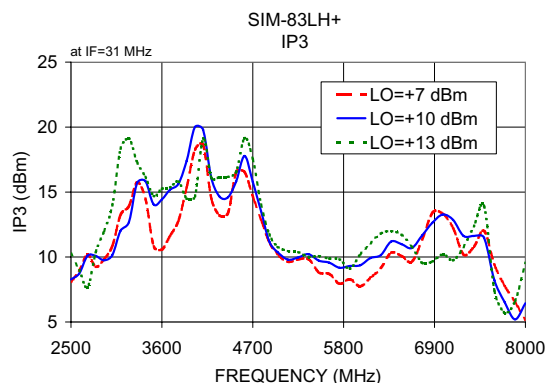
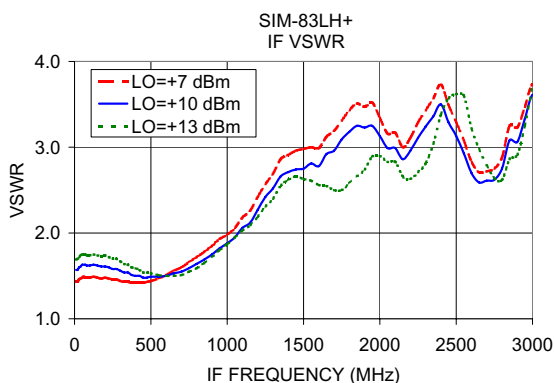
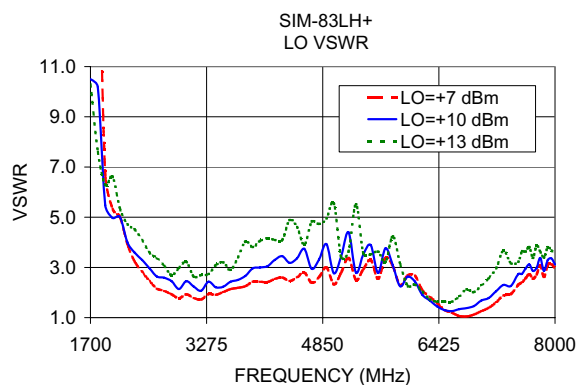
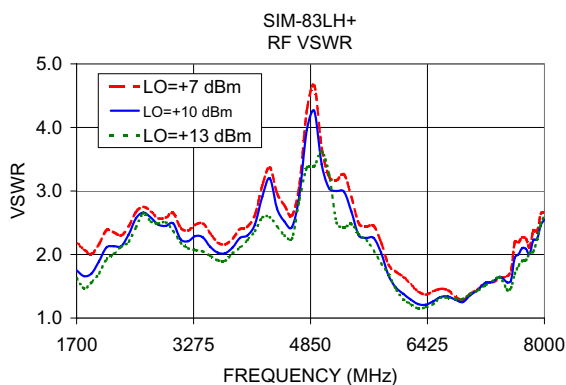
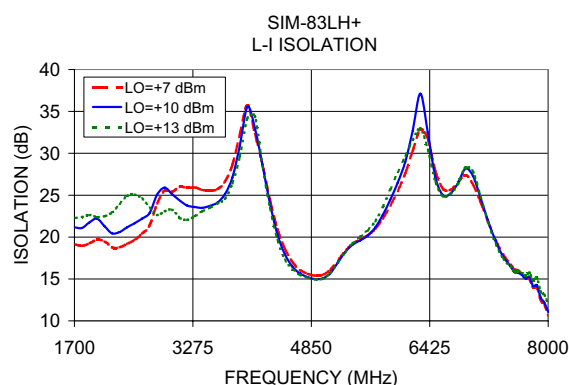
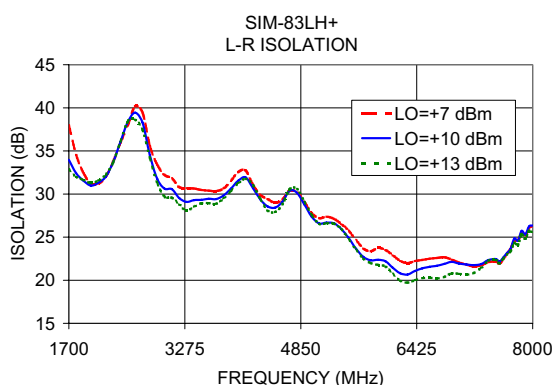
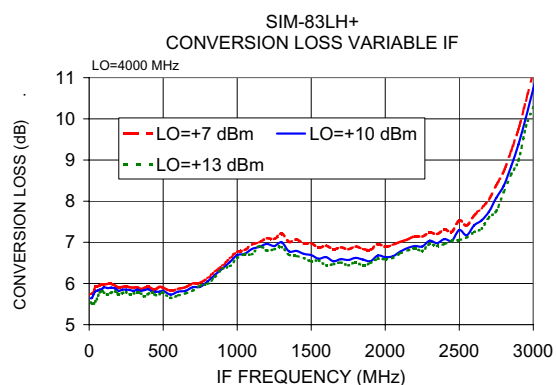
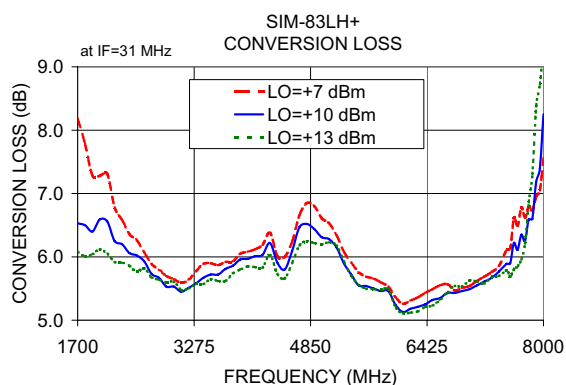
Notes

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