

Frequency Mixer WIDE BAND

Level 17 (LO Power +17 dBm) 3700 to 10000 MHz

SIM-14H+



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 100mW

For extended temperature range, consult factory.

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

Pin Connections

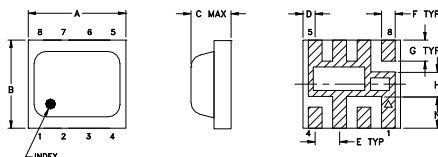
LO 8

RF 4

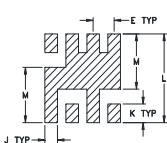
IF 2

GROUND 1,3,5,6,7

Outline Drawing



PCB Metal Land Pattern



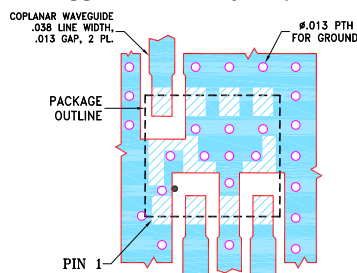
Suggested Layout, Tolerance to be within ±.002

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, 3700 to 10000 MHz
- low conversion loss, 7.0 dB typ.
- high L-R isolation, 38 dB typ.
- excellent IF BW, DC to 4000 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
- federal fixed service
- WIFI
- blue tooth
- VSAT
- ISM

Electrical Specifications

FREQUENCY (MHz)	CONVERSION LOSS* (dB)			LO-RF ISOLATION (dB)		LO-IF ISOLATION (dB)		IP3 (dBm)
	Typ.	σ	Max.	Typ.	Min.	Typ.	Min.	
LO/RF $f_c - f_u$								
IF								
3700-10000								
DC-4000								
3700-6200	7.0	0.3	9.3	38	29	16	9	25
6200-10000	7.0	0.3	10.5	35	24	17	8	25

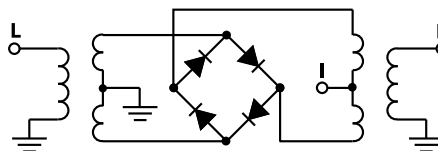
1 dB Compression: +14 dBm typ.

* 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
3560.00	3590.00	7.51	37.51	16.92	2.55	7.97
3720.00	3750.00	8.17	42.81	18.98	3.05	3.95
3880.00	3910.00	7.17	40.82	17.17	3.17	6.58
4040.00	4070.00	7.62	43.86	18.91	3.51	7.34
4200.00	4230.00	7.48	38.33	16.97	3.29	4.29
4520.00	4550.00	7.00	37.71	16.17	3.56	1.94
4840.00	4870.00	6.57	37.94	16.15	3.28	2.16
5100.00	5130.00	7.10	39.65	16.32	3.40	1.59
5880.00	5910.00	7.55	39.57	13.91	5.48	1.36
6270.00	6300.00	7.79	35.34	13.12	4.81	2.46
6660.00	6690.00	7.56	29.49	12.32	3.01	2.34
7050.00	7080.00	6.71	31.34	12.85	2.24	3.16
7830.00	7860.00	6.80	33.03	14.74	1.54	3.97
8220.00	8250.00	6.99	32.05	15.28	1.90	3.32
8610.00	8640.00	7.19	39.29	15.05	2.77	2.30
9000.00	9030.00	7.96	37.33	15.47	3.79	1.54
9100.00	9130.00	7.93	37.82	16.00	3.99	1.45
9450.00	9480.00	8.29	41.23	18.02	4.17	1.54
9800.00	9830.00	8.39	42.86	19.43	4.83	2.02
10150.00	10180.00	8.92	42.41	21.36	5.20	2.60

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.

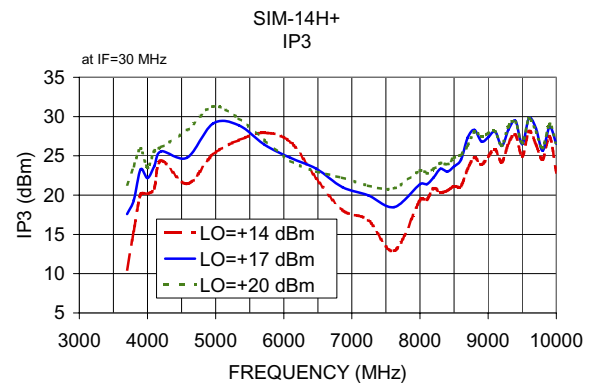
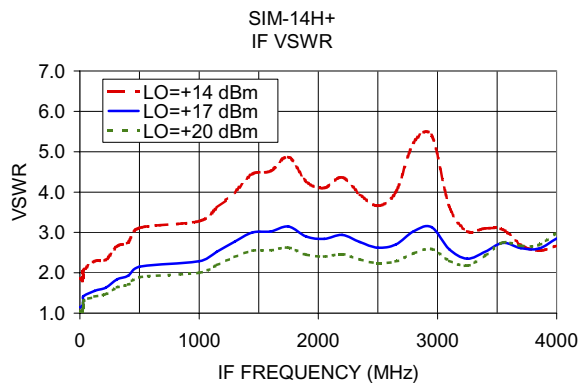
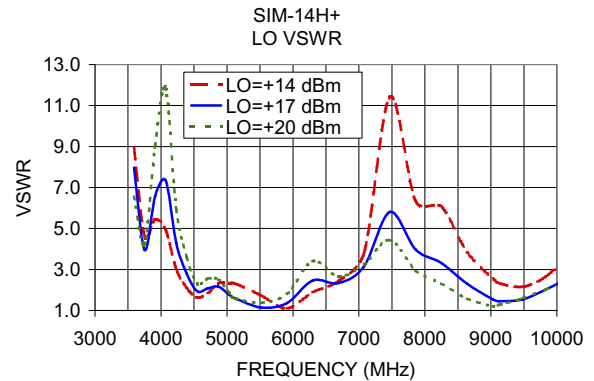
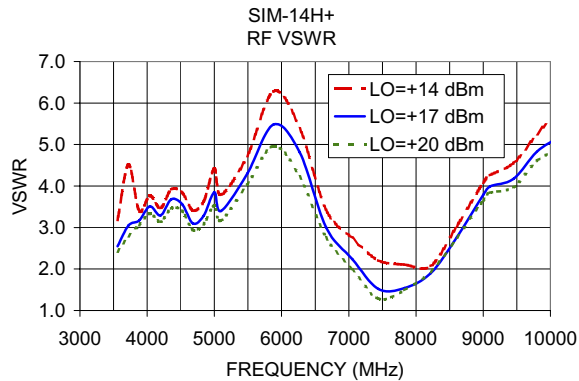
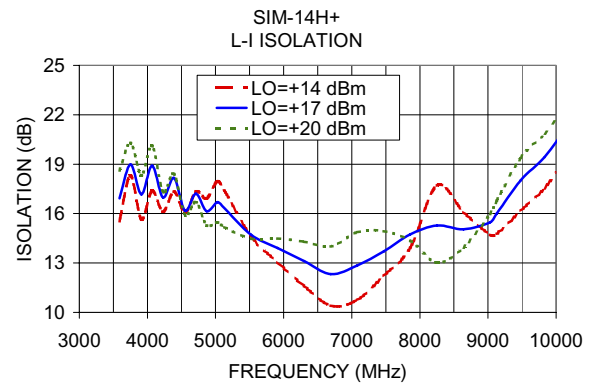
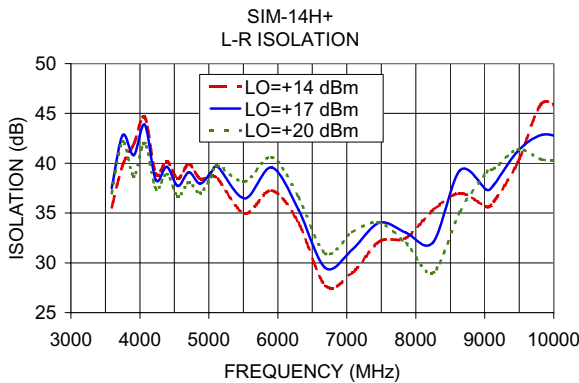
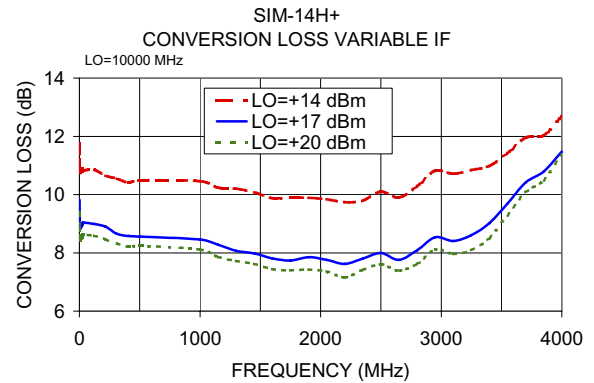
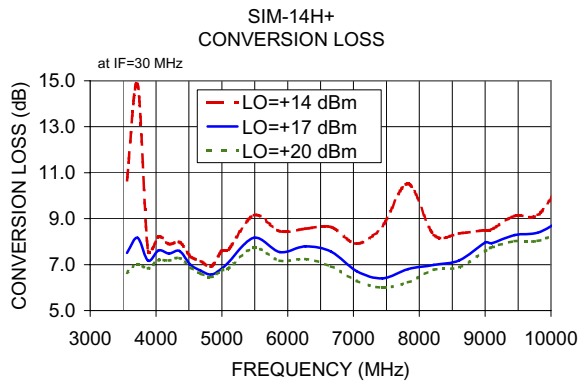
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