

Frequency Mixer WIDE BAND

SIM-14+

Level 7 (LO Power +7 dBm) 3700 to 10000 MHz

Maximum Ratings

Operating Temperature -40°C to 85°C

Storage Temperature -55°C to 100°C

RF Power 50mW

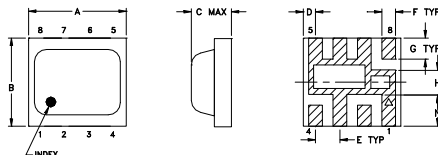
For extended temperature range, consult factory.

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

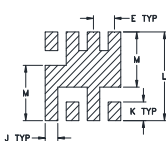
Pin Connections

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

Outline Drawing



PCB Metal Land Pattern

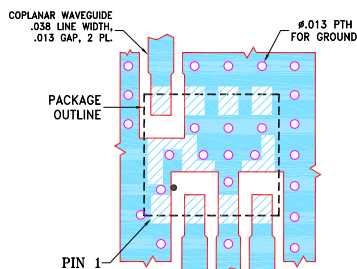


Suggested Layout, Tolerance to be within ±.002

Outline Dimensions (inch/mm)

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, 6.7 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 at center band (dBm)
LO/RF f_L-f_U IF	Typ.	σ	Max.	Typ.	Min.	Typ.	Min.	Typ.
3700-10000 DC-4000								
3700-6200	6.7	0.3	8.3	38	31	16	12	16
6200-10000	6.7	0.3	9.5	35	25	17	12	8

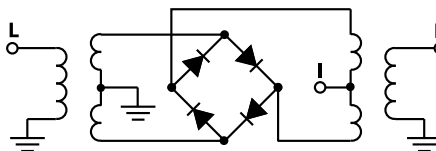
1 dB Compression: +1 dBm typ.

* 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 +7dBm	LO +7dBm	LO +7dBm	LO +7dBm	LO +7dBm
3700.00	3731.00	6.40	43.16	18.87	3.08	6.33
3800.00	3831.00	6.28	43.42	18.88	3.19	4.90
4000.00	4031.00	6.32	41.32	18.41	3.31	4.30
4200.00	4231.00	6.46	37.68	17.43	3.21	3.59
4500.00	4531.00	6.26	37.54	15.84	2.71	2.40
4800.00	4831.00	6.32	37.95	14.47	2.90	1.62
5150.00	5181.00	7.44	40.20	13.75	4.59	1.37
5600.00	5631.00	7.01	37.75	14.10	4.02	1.87
6200.00	6231.00	6.42	37.55	14.99	3.45	3.10
6800.00	6831.00	5.82	35.83	16.40	2.22	2.97
7400.00	7431.00	5.34	34.01	15.81	1.44	2.97
7850.00	7881.00	5.44	29.74	13.61	1.40	2.50
8300.00	8331.00	5.61	28.07	13.89	1.69	1.99
8600.00	8631.00	5.83	32.35	17.66	2.41	1.63
8900.00	8931.00	6.46	36.86	21.71	2.78	1.31
9200.00	9231.00	6.90	39.72	22.22	3.26	1.46
9500.00	9531.00	7.58	32.38	20.23	3.67	1.64
9700.00	9731.00	7.71	32.27	19.61	4.07	1.91
9900.00	9931.00	7.99	33.90	19.86	4.24	2.16
10000.00	10031.00	8.11	34.68	20.01	4.62	2.48

Electrical Schematic



Generic photo used for illustration purposes only

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

Notes

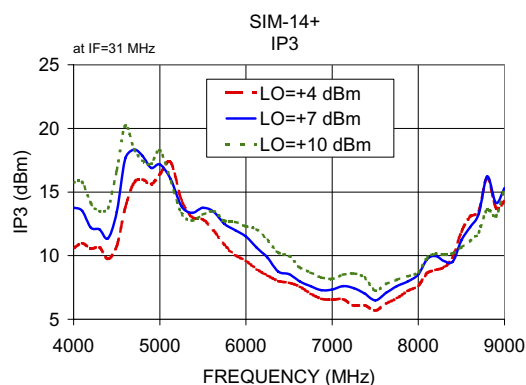
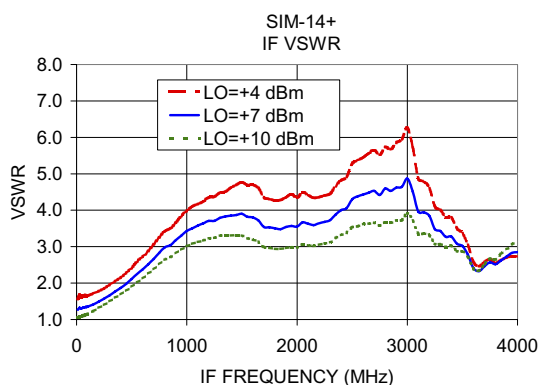
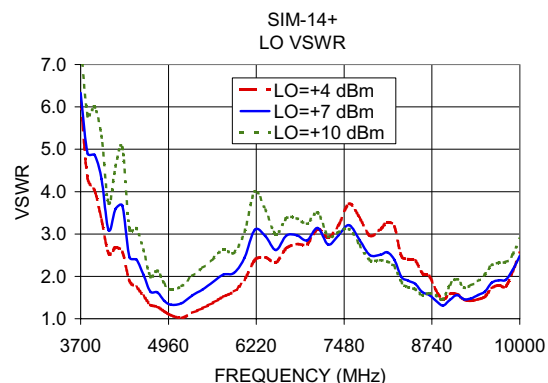
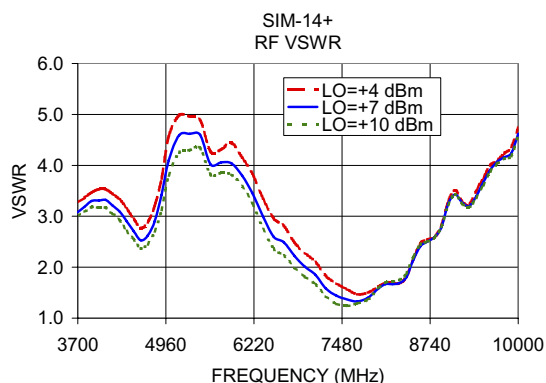
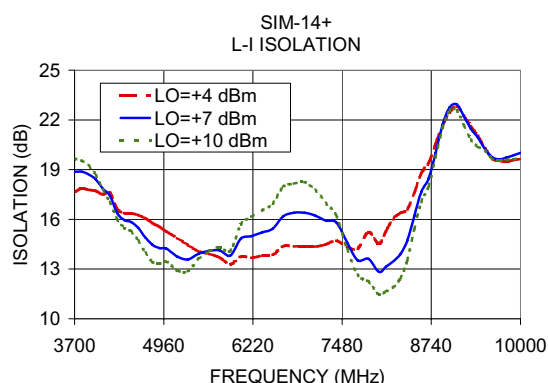
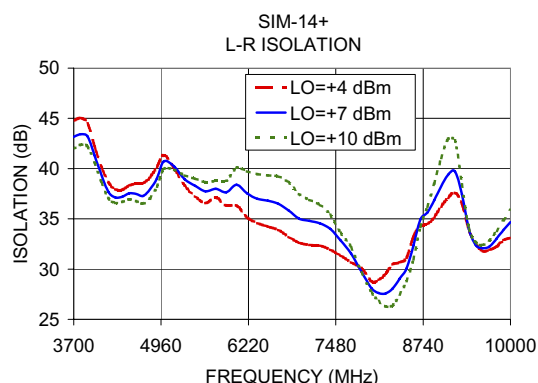
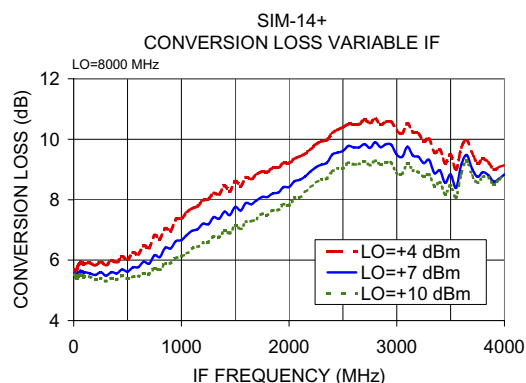
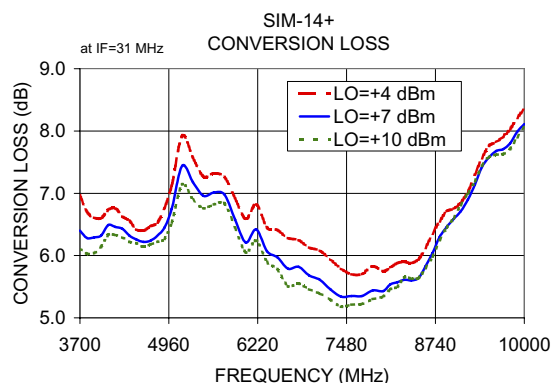
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