

Ceramic Surface Mount Frequency Mixer WIDE BAND

SIM-14+

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



Generic photo used for illustration purposes only

CASE STYLE: HV1195

Maximum Ratings

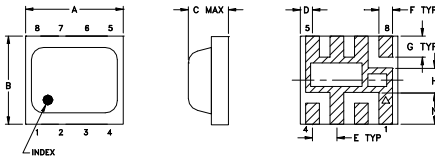
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power	50mW

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

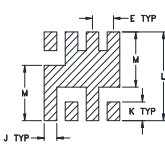
Pin Connections

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

Outline Drawing



PCB Metal Land Pattern

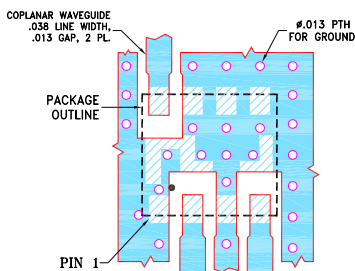


Suggested Layout, Tolerance to be within ±.002

Outline Dimensions (inch/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)
		Typ.	Min.	Typ.	Min.	
3700-10000	DC-4000					
3700-6200		6.7	0.3	38	31	16
6200-10000		6.7	0.3	35	25	8

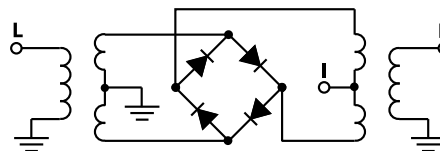
1 dB Compression: +1 dBm typ.

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

Electrical Schematic



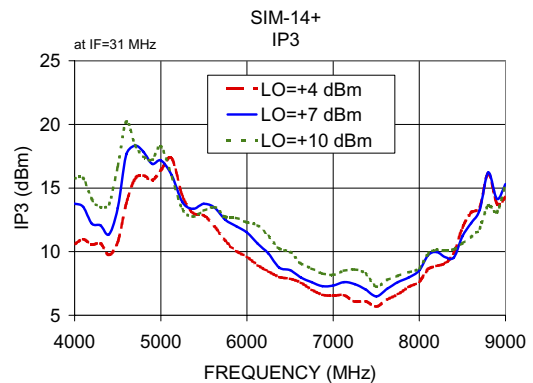
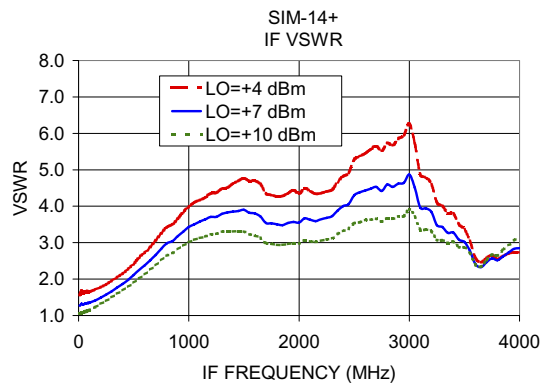
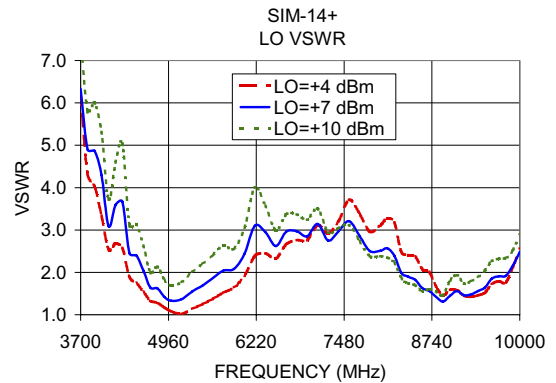
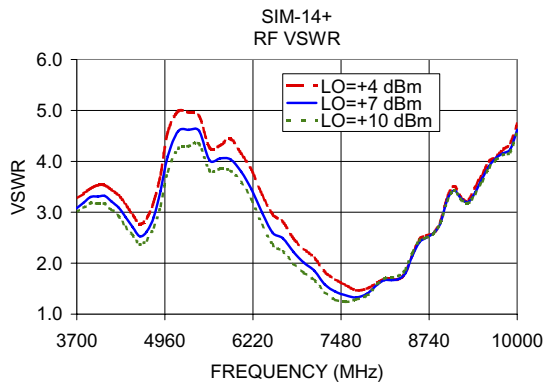
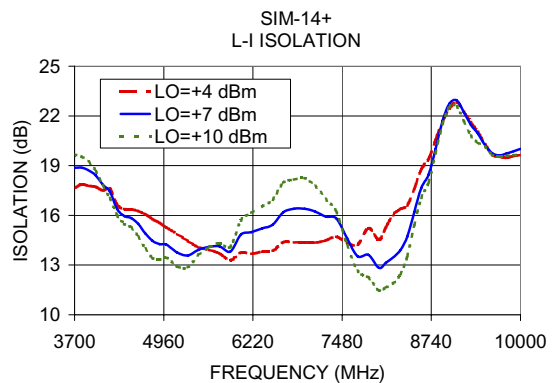
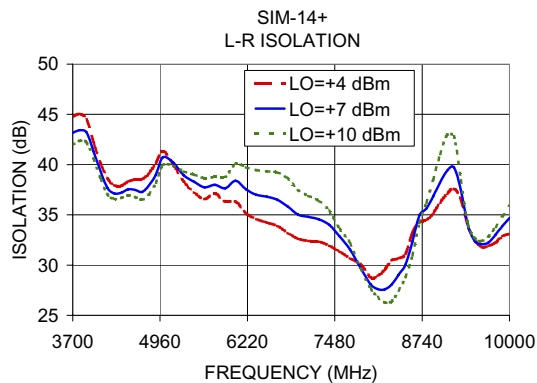
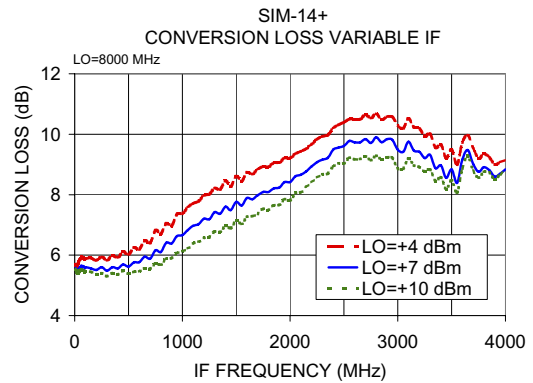
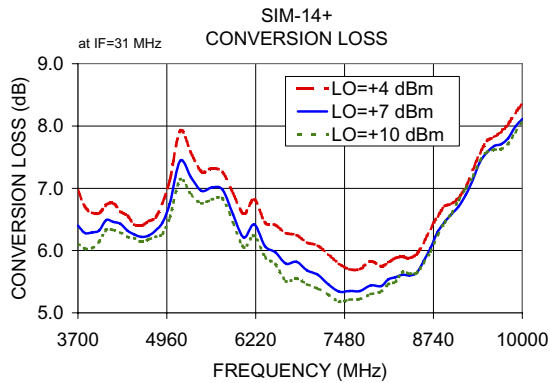
Notes

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