

Ceramic Surface Mount Frequency Mixer WIDE BAND

SIM-14+

Level 7 (LO Power +7 dBm) 3700 to 10000 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	Devices/Reel
7"	10, 20, 50, 100, 200, 500
7"	10, 20, 50, 100, 200, 500

Maximum Ratings

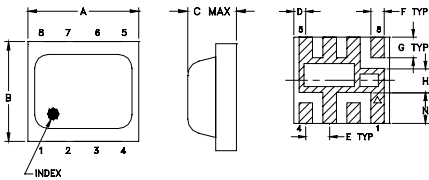
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power	50mW

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

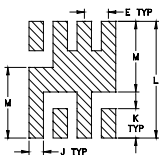
Pin Connections

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

Outline Drawing



PCB Land Pattern

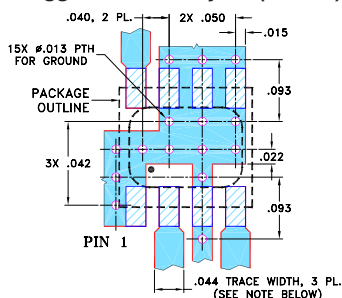


Suggested Layout,
Tolerance to be within ±.002

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

- 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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- 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, 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_c-f_u	IF	Typ. σ Max.	Typ. Min.	Typ. Min.	Typ. Min.		
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

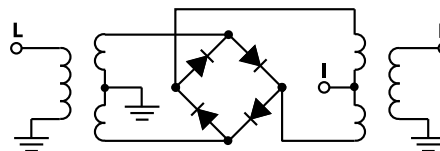
1 dB Compression: +1 dBm typ.

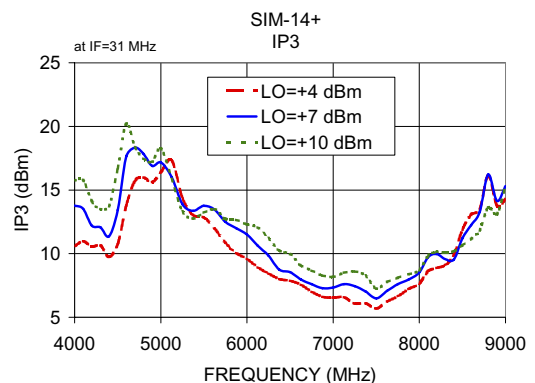
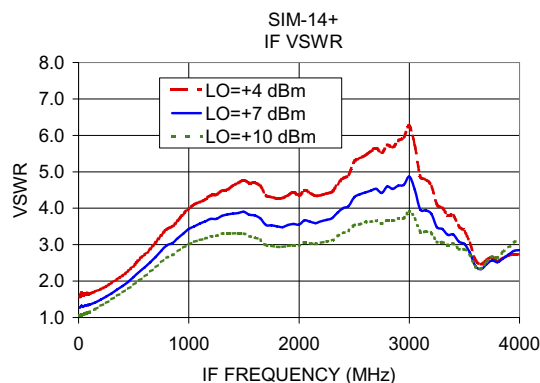
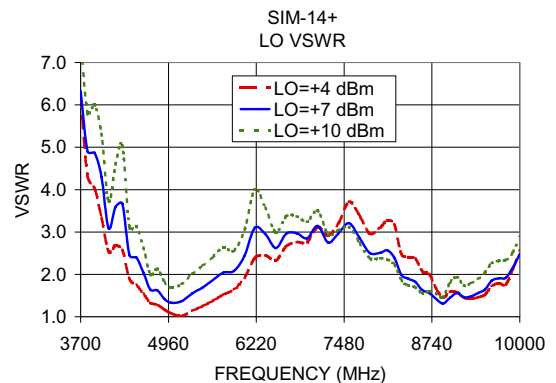
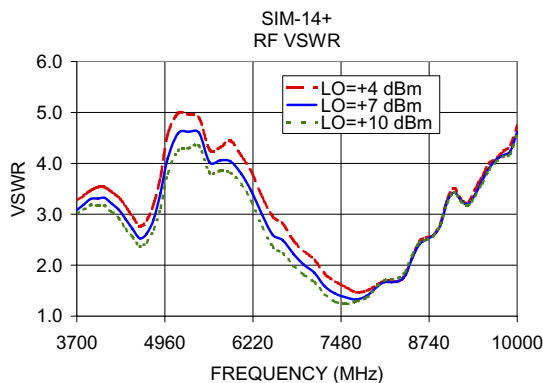
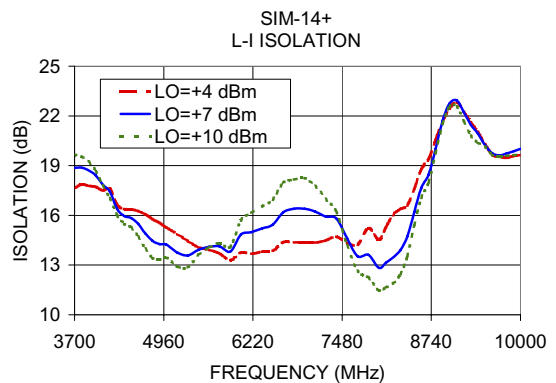
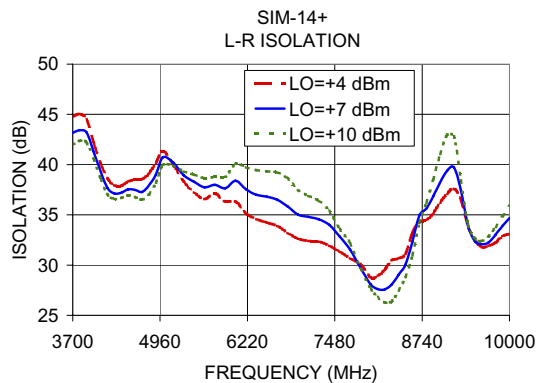
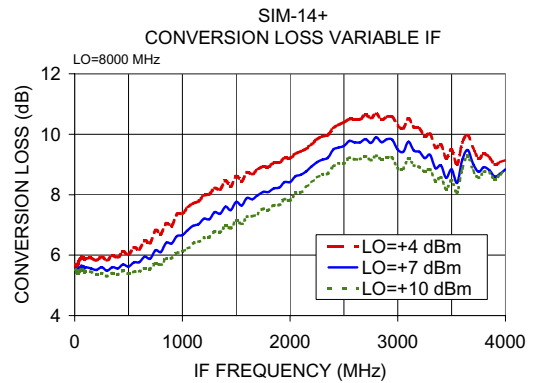
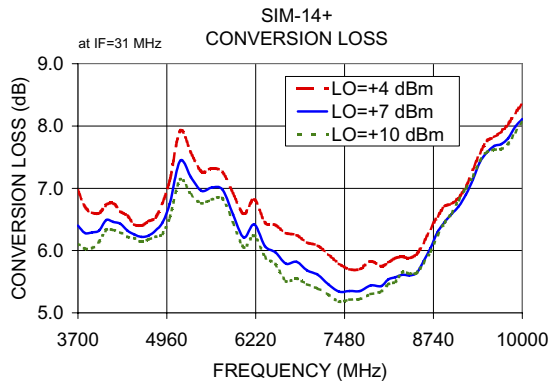
* Conversion loss at 30 MHz IF. σ is a measure of repeatability from unit to unit.

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
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





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