Ceramic Surface Mount

Frequency Mixer WIDE BAND

SIM-43LH+

Level 10 (LO Power +10 dBm) 824 to 4200 MHz

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

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

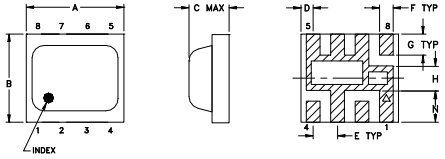
Features

- wide bandwidth, 824 to 4200 MHz
- low conversion loss, 6.1 dB typ.
- excellent L-R isolation, 35 dB typ.
- LTCC double balanced mixer
- tiny size, low profile, 0.08”
- useable as up and down converter
- aqueous washable
- protected by U.S Patent 7,027,795

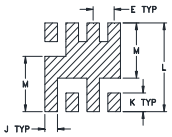
Applications

- cellular
- defense & weather radar
- defense communications
- PCN
- WCDMA
- WIFI
- blue tooth
- VSAT
- ISM

Outline Drawing



PCB Metal Land Pattern



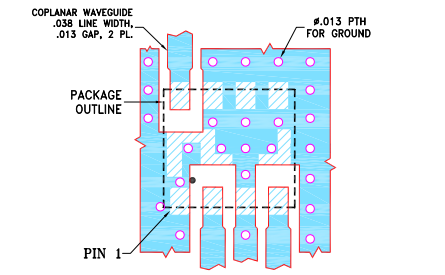
Suggested Layout,
Tolerance to be within±.002

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.

Electrical Specifications

FREQUENCY (MHz)		CONVERSION LOSS* (dB)			LO-RF ISOLATION (dB)		LO-IF ISOLATION (dB)		IP3 (dBm)
LO/RF f_L-f_U	IF	Typ.	σ	Max.	Typ.	Min.	Typ.	Min.	Typ.
824-4200	**DC-1500**								
824-2500		6.3	0.1	8.6	37	30	24	11	14
2500-4200		5.7	0.1	8.2	32	24	20	14	15

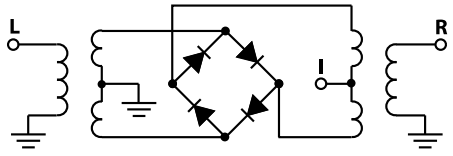
1 dB Compression: +5 dBm typ.

* 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
750	780	7.55	41.92	22.56	2.56	10.57
825	855	6.88	37.38	22.98	2.05	5.85
900	930	7.12	35.75	23.57	1.95	3.93
975	1005	7.17	36.24	24.79	2.18	2.96
1050	1080	6.47	39.72	25.94	2.42	2.17
1200	1230	6.11	43.12	27.55	2.93	1.26
1350	1380	5.82	39.73	30.36	2.84	1.26
1500	1530	5.59	37.27	34.19	2.75	1.56
1800	1830	6.03	37.26	23.93	2.45	1.88
1950	1980	5.94	36.44	17.10	2.31	1.67
2100	2130	5.92	36.15	15.02	2.33	1.52
2250	2280	6.07	36.52	16.08	2.50	1.55
2550	2580	6.50	37.80	19.56	2.75	1.57
2850	2880	5.46	31.42	22.05	1.59	1.11
3180	3210	5.21	31.85	29.71	1.33	1.14
3540	3570	5.72	32.36	23.89	1.66	1.53
3720	3750	5.95	30.75	19.56	2.04	1.86
3900	3930	6.46	32.04	18.94	2.24	2.06
4080	4110	6.55	34.73	20.53	2.37	2.67
4260	4290	7.07	32.75	17.67	2.73	3.60

Electrical Schematic



Notes

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REV. C
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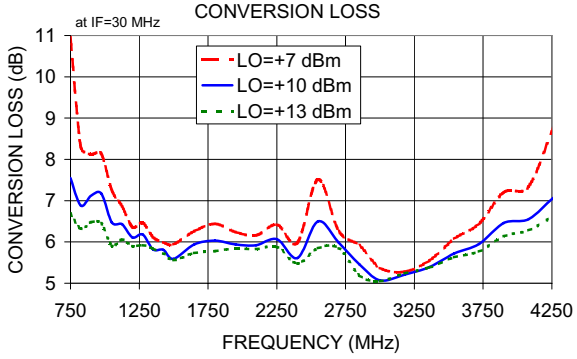
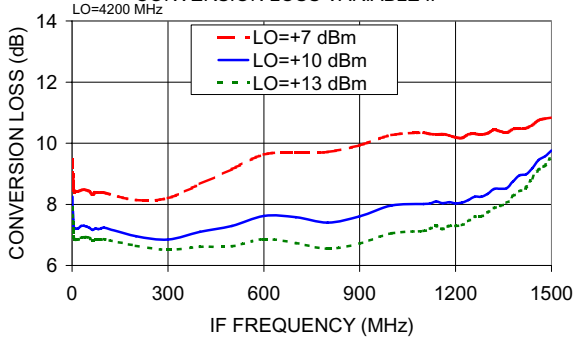
DJ/RS/CP/AM
200821

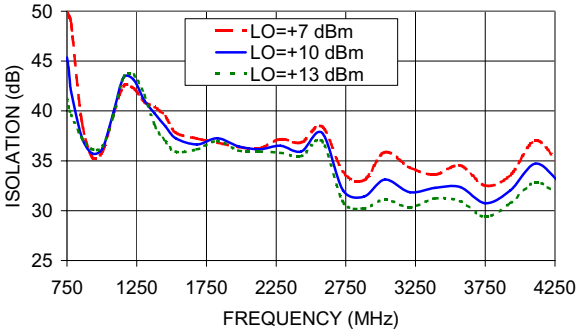
SIM-43LH+
CONVERSION LOSS



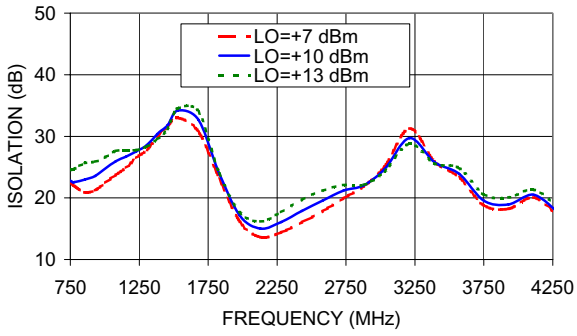
SIM-43LH+
CONVERSION LOSS VARIABLE IF



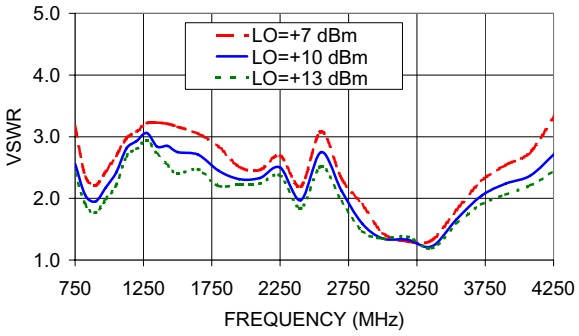
SIM-43LH+
L-R ISOLATION



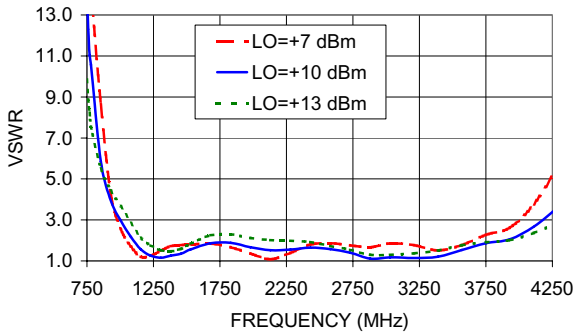
SIM-43LH+
L-I ISOLATION



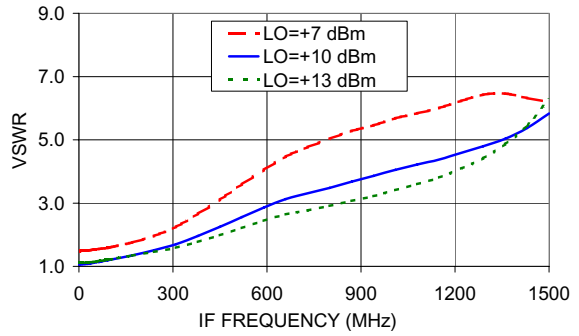
SIM-43LH+
RF VSWR



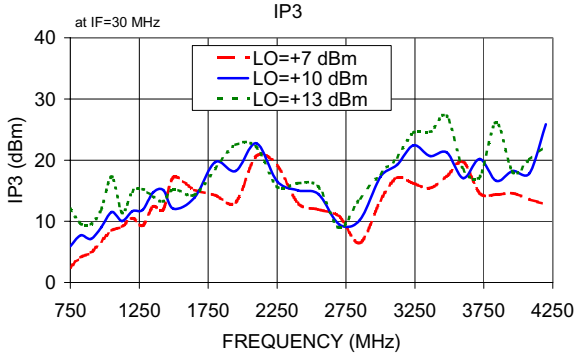
SIM-43LH+
LO VSWR



SIM-43LH+
IF VSWR



SIM-43LH+
IP3



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