

Frequency Mixer WIDE BAND

SIM-63LH+

Level 10 (LO Power +10 dBm) 750 to 6000 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

Features

- wide bandwidth, 750 to 6000 MHz
- low conversion loss, 6.2 dB typ.
- excellent L-R isolation, 34 dB typ.
- 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

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

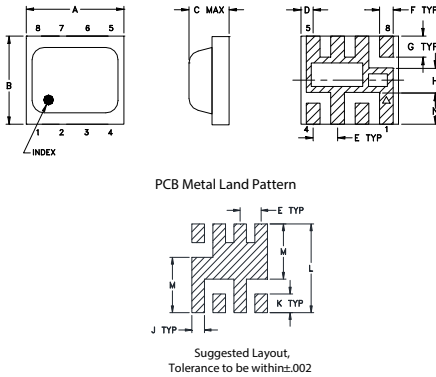
+RoHS Compliant

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

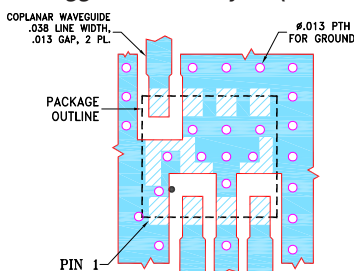
Outline Drawing



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" & .015"; 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.

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.
- Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
- The parts covered by this specification document are subject to Mini-Circuits 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-Circuits' website at www.minicircuits.com/WCLStore/terms.jsp

Electrical Specifications

FREQUENCY (MHz)	CONVERSION LOSS* (dB)	LO-RF ISOLATION (dB)		LO-IF ISOLATION (dB)		IP3 at center band (dBm)			
		Typ.	Min.	Typ.	Min.				
LO/RF $f_c - f_u$	IF	Typ.	σ	Max.	Typ.	Min.	Typ.		
750-6000	DC-1500	6.3	0.1	7.3	37	31	30	20	12
750-1700		6.6	0.1	7.5	37	32	20	12	18
1700-2000		5.8	0.1	7.2	32	25	22	12	12
2000-3100		5.7	0.1	7.0	30	25	25	15	15
3100-3800		8.0	0.2	9.3	30	22	20	13	15
3800-6000									

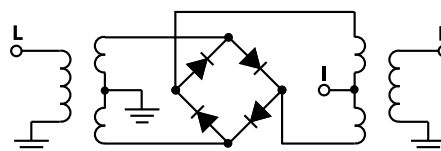
1 dB Compression: +3 dBm typ.

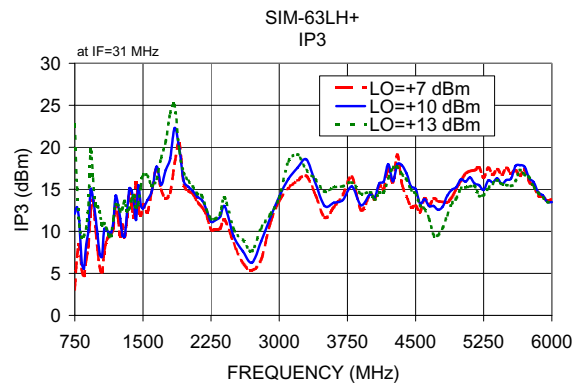
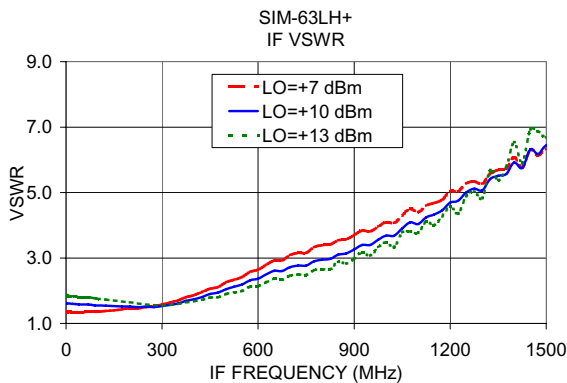
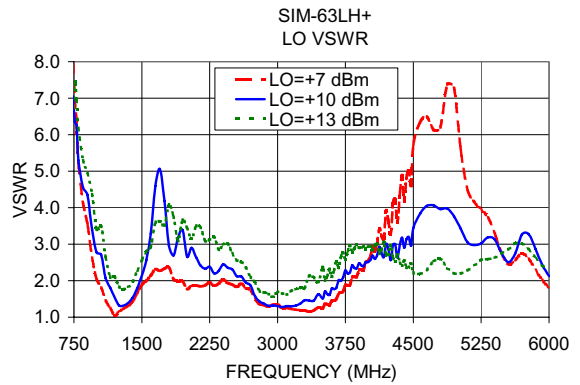
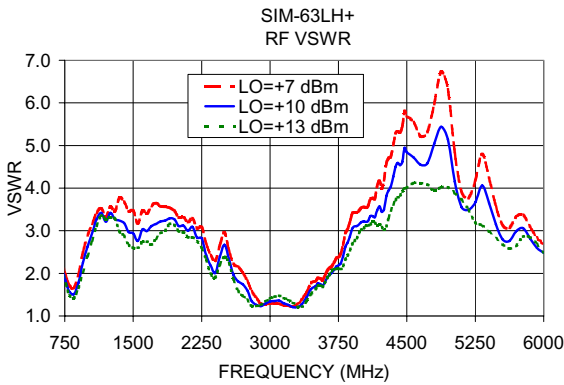
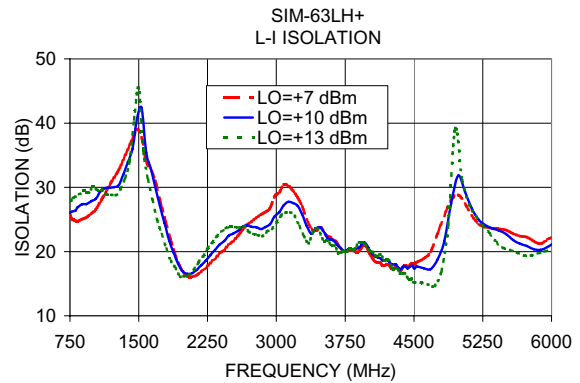
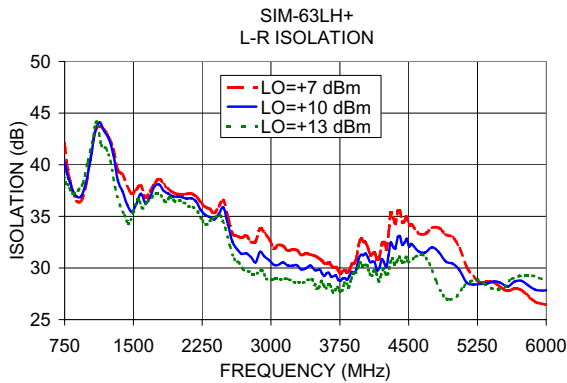
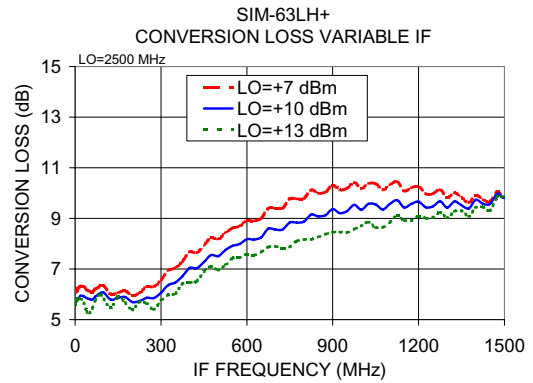
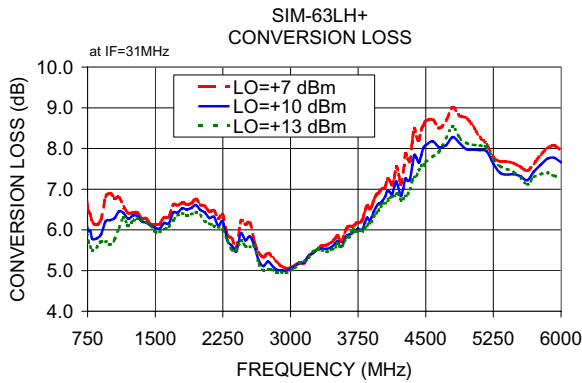
* Conversion loss at 30 MHz IF. σ is a measure of repeatability from unit to unit.

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
740.00	771.00	6.12	39.29	26.22	1.99	7.05
850.00	881.00	5.79	36.91	27.35	1.51	4.55
1000.00	1031.00	6.24	40.47	28.20	2.63	2.78
1200.00	1231.00	6.27	42.51	30.04	3.21	1.54
1500.00	1531.00	6.05	36.17	42.37	2.94	2.15
1800.00	1831.00	6.53	37.46	21.72	3.22	2.96
2100.00	2131.00	6.29	36.76	17.14	3.00	2.64
2400.00	2431.00	5.47	35.23	21.65	2.01	2.45
2700.00	2731.00	5.11	31.43	23.85	1.75	1.87
3000.00	3031.00	5.05	30.30	26.15	1.34	1.30
3400.00	3431.00	5.53	30.24	23.55	1.44	1.45
3800.00	3831.00	6.01	28.84	20.37	2.40	2.23
4200.00	4231.00	7.01	30.59	18.41	3.57	3.00
4500.00	4531.00	8.08	32.32	17.66	4.84	3.45
4800.00	4831.00	8.28	31.53	21.57	5.04	3.96
5100.00	5131.00	7.96	28.60	26.68	3.55	3.05
5400.00	5431.00	7.36	28.72	23.26	3.65	3.13
5700.00	5731.00	7.43	28.75	20.86	2.99	3.26
5850.00	5881.00	7.75	27.90	20.28	2.82	2.87
6000.00	6031.00	7.66	27.87	21.39	2.48	2.13

Electrical Schematic





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