

Frequency Mixer WIDE BAND

SIM-153MH+

Level 13 (LO Power +13 dBm) 3200 to 15000 MHz



CASE STYLE: HV1195
PRICE: \$9.95 ea. QTY (10)

+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

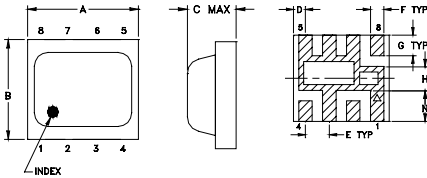
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power	50mW

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

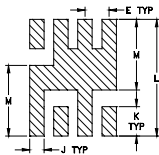
Pin Connections

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

Outline Drawing



PCB Land Pattern

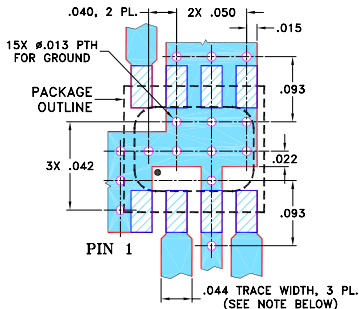


Suggested Layout,
Tolerance to be within ±0.002

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

P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661 The Design Engineers Search Engine Provides ACTUAL Data Instantly at minicircuits.com

Notes: 1. Performance and quality attributes and conditions not expressly stated in this specification sheet are intended to be excluded and do not form a part of this specification sheet. 2. Electrical specifications and performance data contained herein are based on Mini-Circuits' applicable established test performance criteria and measurement instructions. 3. The parts covered by this specification sheet 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/MCLStore/terms.jsp.

Features

- wide bandwidth, 3200 to 15000 MHz
- low conversion loss, 6.5 dB typ.
- high L-R isolation, 36 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 under U.S 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.				
3200-15000	DC-4000								
3200-4500		6.4	0.2	8.9	38	31	19	15	17
4500-5100		6.5	0.2	8.0	38	32	15	11	22
5100-14000		7.5	0.4	11.5	35	23	15	9	17
14000-15000		7.8	0.3	9.6	30	21	28	24	14

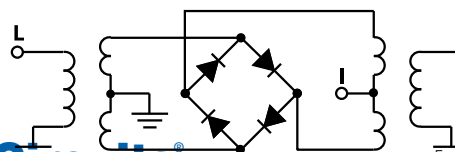
1 dB Compression: +7 dBm typ.

* 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)	
	LO	+13dBm	LO	+13dBm	LO	+13dBm	LO	+13dBm	LO	+13dBm
3040.10	3070.00	8.26	38.01	20.45	1.79	25.34				
3220.10	3250.00	7.09	37.30	20.51	1.87	14.19				
3580.10	3610.00	6.48	38.65	20.11	2.39	8.79				
4120.10	4150.00	6.63	37.90	19.72	3.08	6.45				
4660.10	4690.00	6.48	35.77	15.49	2.84	4.04				
5200.10	5230.00	7.15	41.71	14.68	3.55	1.70				
5740.10	5770.00	7.32	40.10	14.00	4.60	2.13				
6280.10	6310.00	6.41	38.52	15.57	3.91	3.17				
7000.10	7030.00	5.81	33.94	17.23	2.05	3.17				
7960.10	7990.00	5.73	31.00	13.54	1.46	2.40				
8920.10	8950.00	6.53	36.88	18.96	2.65	1.64				
9880.10	9910.00	7.62	35.50	20.89	4.65	1.98				
10840.10	10870.00	8.66	36.53	22.63	5.72	2.33				
11480.10	11510.00	9.47	44.69	25.50	6.68	2.89				
12120.10	12150.00	10.21	49.42	29.27	5.88	2.80				
12760.10	12790.00	9.69	37.13	37.19	4.81	3.99				
13400.10	13430.00	9.74	32.02	40.42	3.81	3.38				
14040.10	14070.00	8.22	30.24	35.32	2.06	2.47				
14680.10	14710.00	7.29	25.00	29.88	1.28	2.50				
15000.10	15030.00	7.79	24.75	28.45	1.94	1.76				

Electrical Schematic



For detailed performance specs & shopping online see web site

Mini-Circuits
ISO 9001 ISO 14001 AS 9100 CERTIFIED

IF/RF MICROWAVE COMPONENTS

