

Frequency Mixer WIDE BAND

SIM-852MH+

Level 13 (LO Power +13 dBm) 3700 to 8500 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 7" Devices/Reel 10, 20, 50, 100, 200, 500

Maximum Ratings

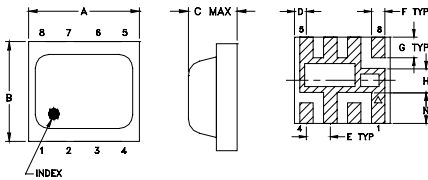
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power	50mW

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

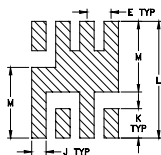
Pin Connections

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

Outline Drawing



PCB Land Pattern

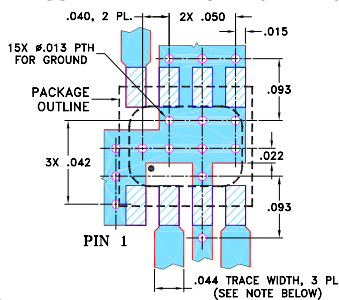


Suggested Layout,
Tolerance to be within ±.002

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.
- 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-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 8500 MHz
- low conversion loss, 6.9 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 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_i-f_u	IF	Typ. σ Max.	Typ. Min.	Typ. Min.	Typ. Min.	Typ.	
3700-8500	DC-4000							
3700-6200			7.3	0.1	8.7	36	28	22
6200-8500			6.9	0.2	9.8	35	22	16

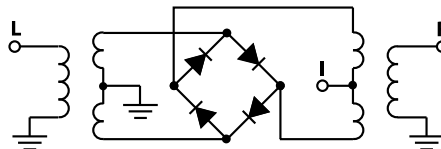
1 dB Compression: +9 dBm typ.

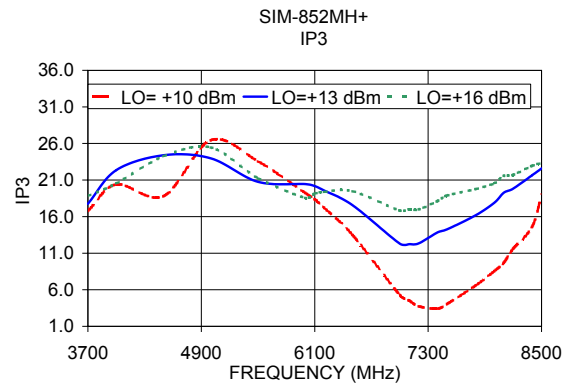
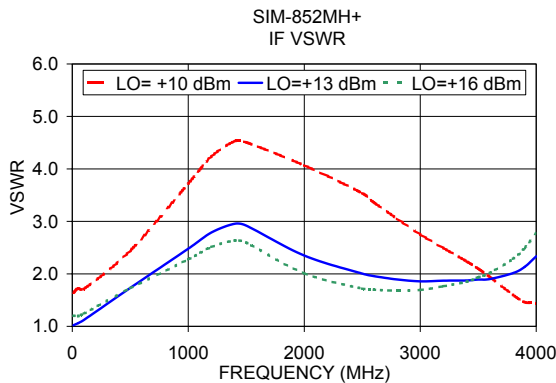
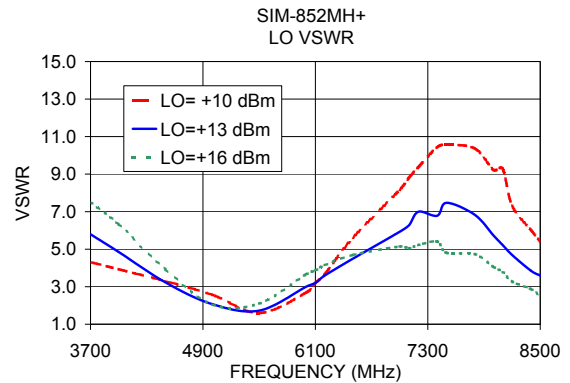
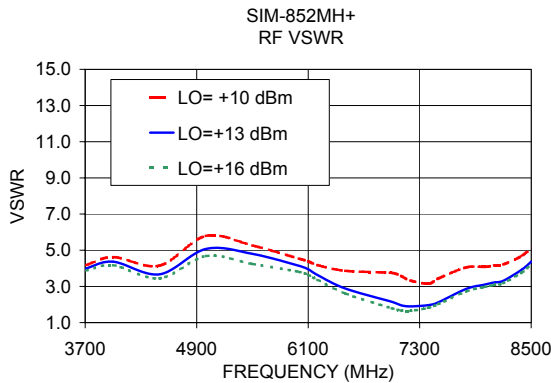
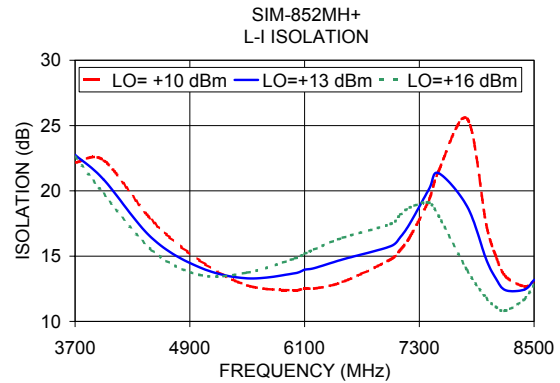
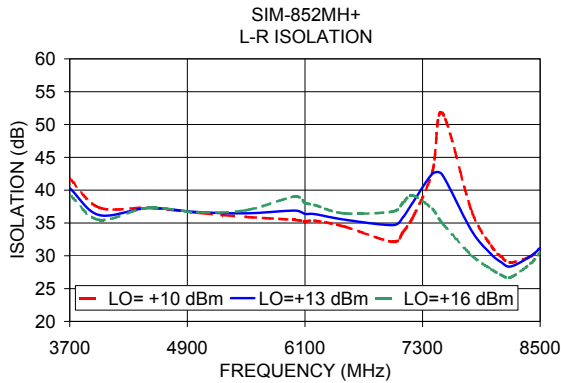
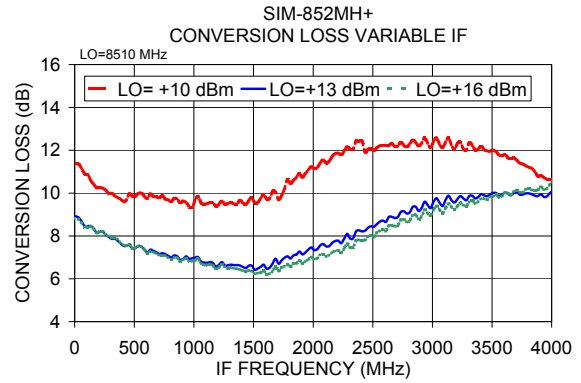
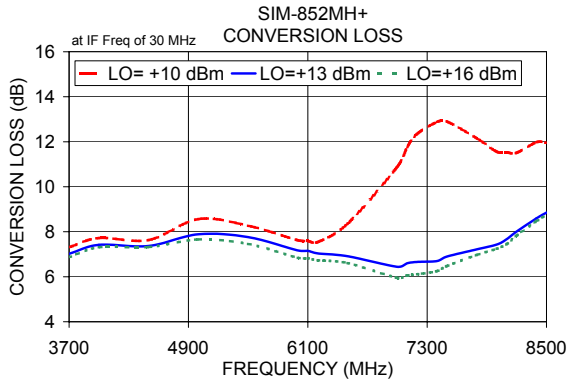
* Conversion loss at 30 MHz IF. σ is a measure of repeatability from unit to unit.

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	RF	LO	RF	LO	RF	LO	RF	LO	RF
3700.10	7.02	40.31	22.76	3.98	5.79					
4000.10	7.42	36.20	20.85	4.37	4.86					
4500.10	7.37	37.26	16.40	3.67	3.23					
5000.10	7.89	36.66	14.15	5.07	2.07					
5500.10	7.76	36.47	13.30	4.80	1.73					
6000.10	7.17	36.88	13.69	4.14	3.00					
6100.10	7.15	36.38	13.96	3.95	3.20					
6200.10	7.04	36.34	14.08	3.63	3.60					
6500.10	6.91	35.51	14.75	2.88	4.50					
7000.10	6.44	34.67	15.76	2.15	5.93					
7100.10	6.60	35.86	16.44	1.96	6.28					
7200.10	6.66	38.11	17.48	1.90	7.00					
7400.10	6.70	42.47	20.12	1.97	6.78					
7500.10	6.90	42.36	21.36	2.12	7.47					
7800.10	7.22	33.82	18.80	2.86	6.83					
8000.10	7.43	30.25	14.74	3.10	5.74					
8100.10	7.67	29.04	13.29	3.22	5.22					
8200.10	8.01	28.37	12.39	3.31	4.69					
8400.10	8.60	29.91	12.44	3.93	3.86					
8500.10	8.85	31.20	13.18	4.37	3.59					

Electrical Schematic





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