



**THE DATASHEET OF  
SIM-852MH+**



# Frequency Mixer WIDE BAND

## SIM-852MH+

Level 13 (LO Power +13 dBm) 3700 to 8500 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, 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

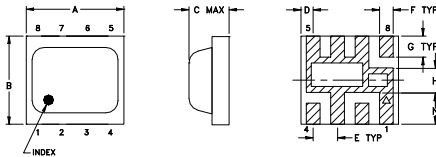
### +RoHS Compliant

The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

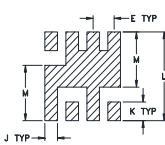
Available Tape and Reel at no extra cost

Reel Size	Devices/Reel
7"	10, 20, 50, 100, 200, 500

### Outline Drawing



PCB Metal Land Pattern

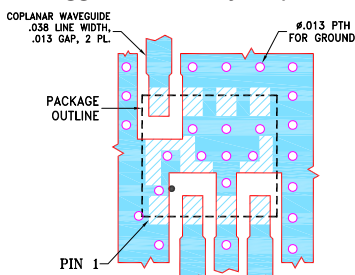


Suggested Layout, Tolerance to be within ±0.02

### 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 at center band (dBm)
	LO/RF $f_i-f_u$	IF	Typ. $\sigma$ Max.	Typ. Min.	Typ. Min.	Typ. Min.	Typ.	
<b>3700-8500</b>	<b>DC-4000</b>							
3700-6200			7.3	0.1	8.7	36	28	22
6200-8500			6.9	0.2	9.8	35	22	16

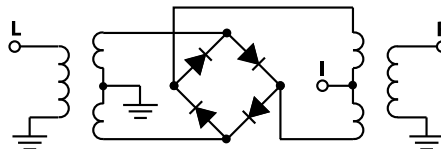
1 dB Compression: +9 dBm typ.

\* Conversion loss at 30 MHz IF.  $\sigma$  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	3730.10	7.02	40.31	22.76	3.98	5.79				
4000.10	4030.10	7.42	36.20	20.85	4.37	4.86				
4500.10	4530.10	7.37	37.26	16.40	3.67	3.23				
5000.10	5030.10	7.89	36.66	14.15	5.07	2.07				
5500.10	5530.10	7.76	36.47	13.30	4.80	1.73				
6000.10	6030.10	7.17	36.88	13.69	4.14	3.00				
6100.10	6130.10	7.15	36.38	13.96	3.95	3.20				
6200.10	6230.10	7.04	36.34	14.08	3.63	3.60				
6500.10	6530.10	6.91	35.51	14.75	2.88	4.50				
7000.10	7030.10	6.44	34.67	15.76	2.15	5.93				
7100.10	7130.10	6.60	35.86	16.44	1.96	6.28				
7200.10	7230.10	6.66	38.11	17.48	1.90	7.00				
7400.10	7430.10	6.70	42.47	20.12	1.97	6.78				
7500.10	7530.10	6.90	42.36	21.36	2.12	7.47				
7800.10	7830.10	7.22	33.82	18.80	2.86	6.83				
8000.10	8030.10	7.43	30.25	14.74	3.10	5.74				
8100.10	8130.10	7.67	29.04	13.29	3.22	5.22				
8200.10	8230.10	8.01	28.37	12.39	3.31	4.69				
8400.10	8430.10	8.60	29.91	12.44	3.93	3.86				
8500.10	8530.10	8.85	31.20	13.18	4.37	3.59				

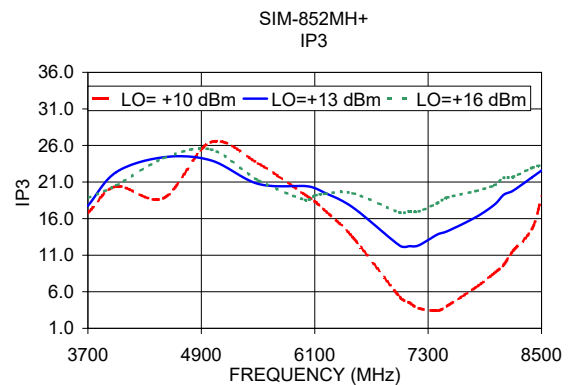
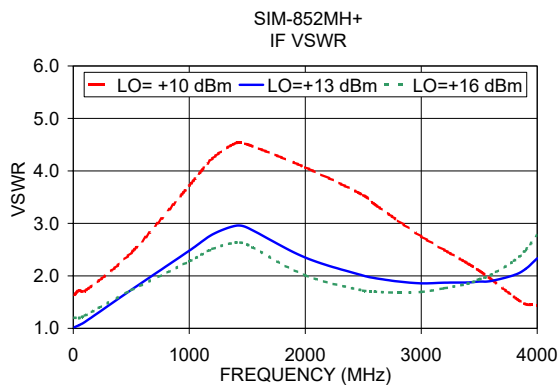
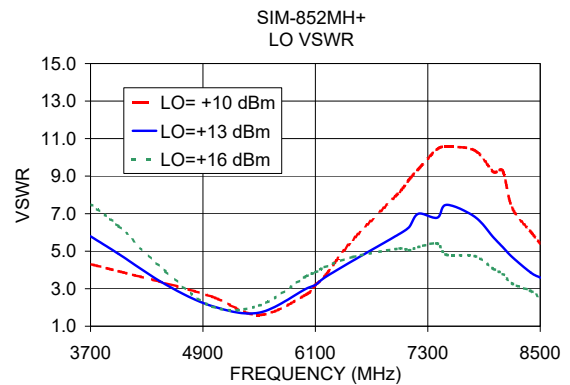
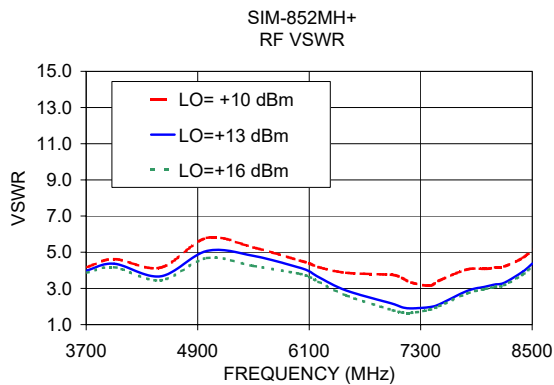
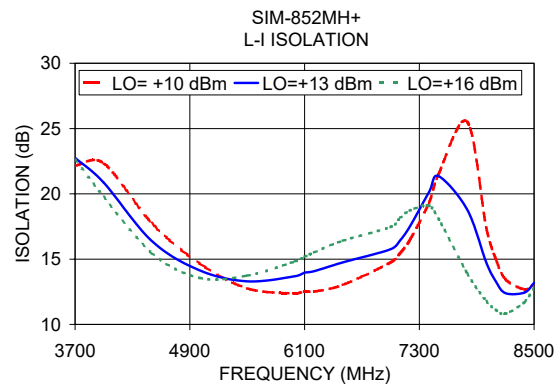
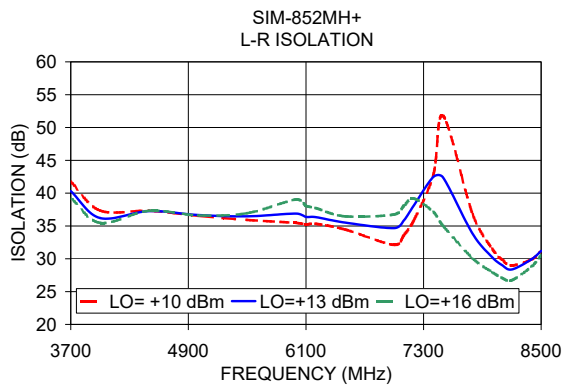
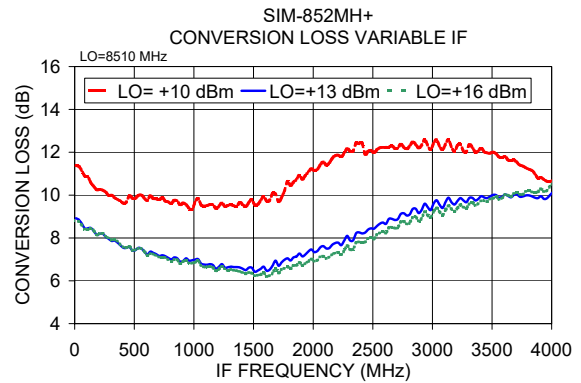
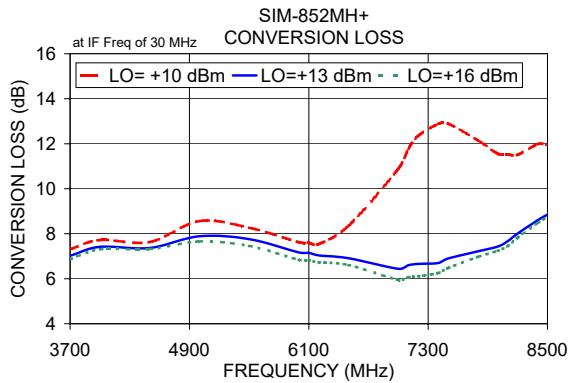
### Electrical Schematic



### Notes

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