

# Ceramic Surface Mount Frequency Mixer WIDE BAND

## SIM-792LH+

Level 10 (LO Power +10 dBm) 2300 to 7900 MHz



### Maximum Ratings

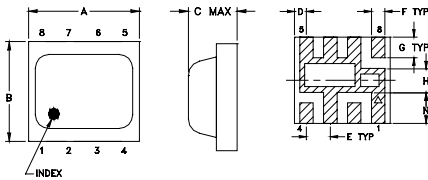
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
IF Power	50mW

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

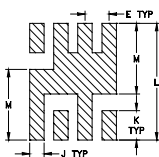
### Pin Connections

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

### Outline Drawing



### PCB Land Pattern

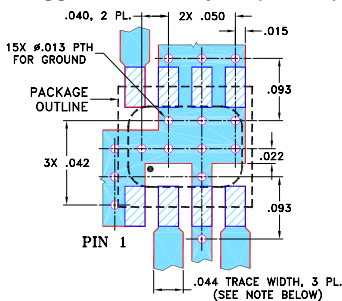


Suggested Layout,  
Tolerance to be within ±0.002

### 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

### Features

- wide bandwidth, 2300 to 7900 MHz
- low conversion loss, 6.0 dB typ.
- excellent IF BW, DC to 3000 MHz
- LTCC double balanced mixer
- tiny size, low profile, 0.08"
- useable as up and down converter
- protected by US patent 7,027,795

### Applications

- satellite up and down converters
- defense radar and communications
- line of sight links
- ISM
- WIFI
- blue tooth
- VSAT
- ISM

### Electrical Specifications

FREQUENCY (MHz)	CONVERSION LOSS* (dB)	LO-RF ISOLATION (dB)		LO-IF ISOLATION (dB)		IP3 (dBm)		
		Typ.	Min.	Typ.	Min.			
LO/RF $f_i - f_o$	IF	Typ.	$\sigma$	Max.	Typ.	Min.	Typ.	
2300-7900	DC-3000							
2300-3200		5.9	0.1	7.5	33	26	22	15
3200-3700		5.8	0.1	7.0	33	26	22	18
3700-4200		5.9	0.2	7.4	34	27	25	18
4200-7900		6.0	0.2	8.5	23	18	18	10

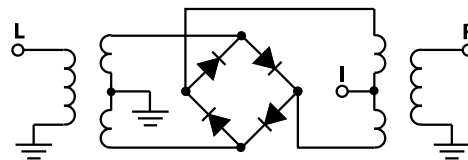
1 dB Compression: +5 dBm typ.

\* 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)
RF	LO	LO +10dBm	LO +10dBm	LO +10dBm	LO +10dBm	LO +10dBm
2300.10	2330.10	6.53	31.65	19.49	2.02	3.94
2600.10	2630.10	6.17	37.57	22.02	2.24	2.69
2900.10	2930.10	5.93	34.54	21.86	2.18	2.22
3200.10	3230.10	5.81	30.68	22.44	2.11	1.96
3700.10	3730.10	6.00	31.31	22.17	1.88	1.92
4000.10	4030.10	6.05	33.70	25.10	1.86	2.12
4200.10	4230.10	6.04	32.33	28.76	1.98	2.20
4400.10	4430.10	6.49	32.06	29.82	2.47	2.35
4600.10	4630.10	6.18	30.83	22.66	2.16	2.46
4900.10	4930.10	6.88	30.01	16.73	3.15	2.63
5200.10	5230.10	6.76	28.94	15.88	3.08	2.82
5500.10	5530.10	6.30	27.31	17.28	2.54	2.94
5800.10	5830.10	5.98	25.61	19.18	2.07	2.68
6100.10	6130.10	5.83	24.20	22.10	1.65	2.06
6400.10	6430.10	5.94	23.21	27.53	1.60	1.27
6700.10	6730.10	6.40	23.58	31.64	1.56	1.29
7000.10	7030.10	6.73	22.55	34.87	1.68	1.78
7300.10	7330.10	6.62	22.13	22.89	1.82	2.40
7600.10	7630.10	7.26	22.83	18.59	2.27	2.84
7900.10	7930.10	7.13	25.60	15.46	2.72	3.32

### Electrical Schematic



**Mini-Circuits**  
ISO 9001 ISO 14001 AS 9100 CERTIFIED

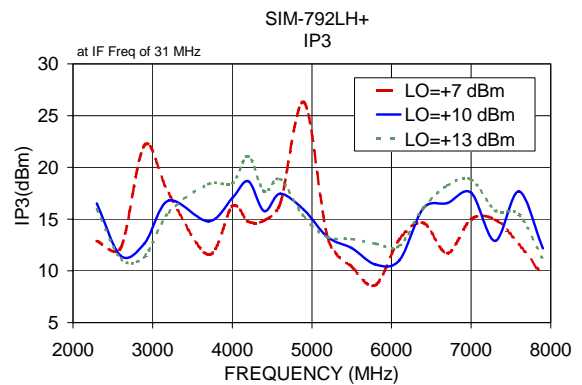
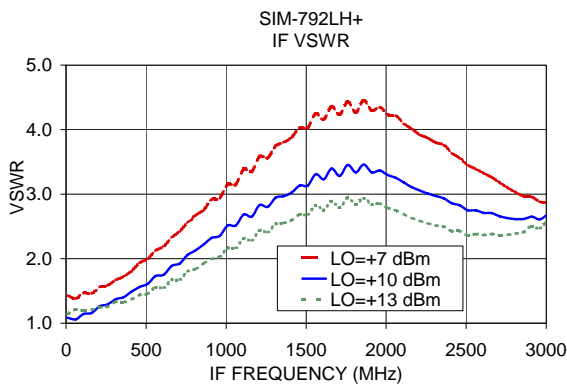
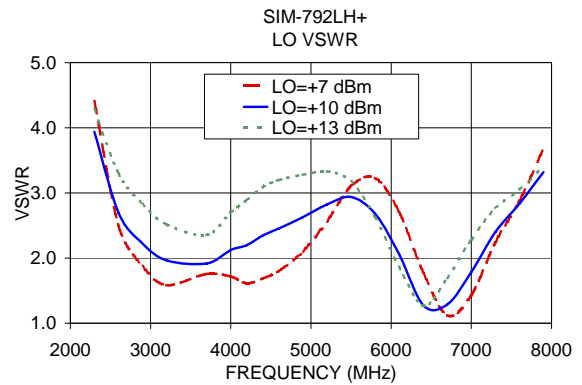
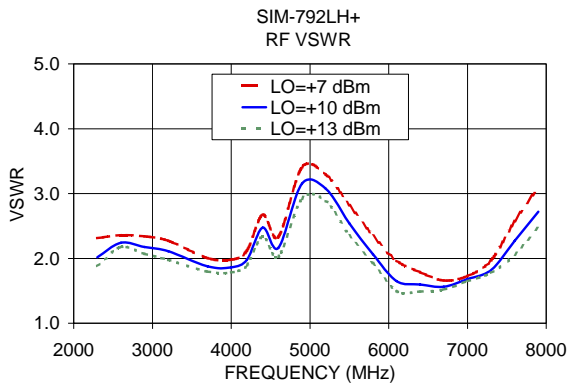
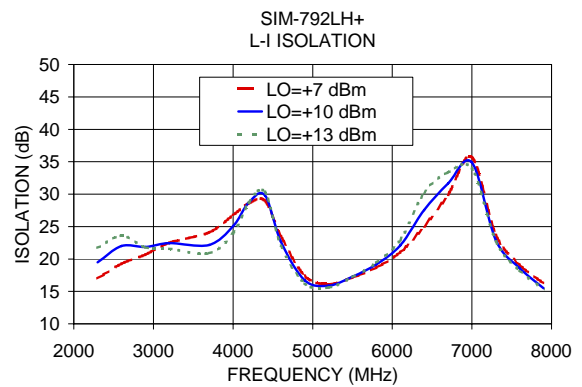
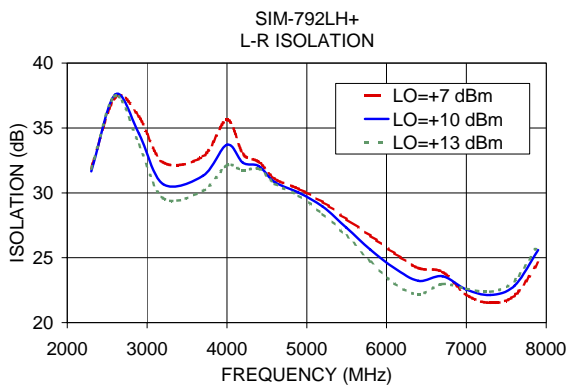
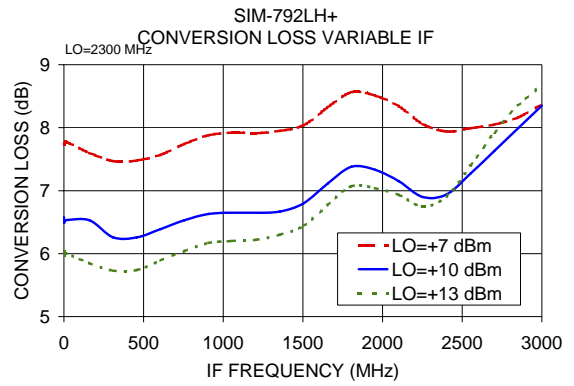
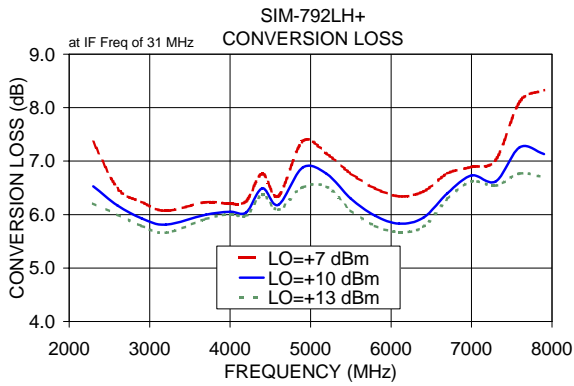
For detailed performance specs & shopping online see web site

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