



**THE DATASHEET OF  
SIM-722MH+**



# Ceramic Surface Mount Frequency Mixer WIDE BAND

## SIM-722MH+

### Level 13 (LO Power +13 dBm) 2300 to 7200 MHz



Generic photo used for illustration purposes only

CASE STYLE: HV1195

#### Maximum Ratings

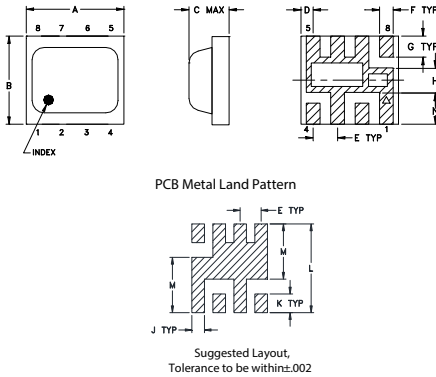
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power	50mW

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

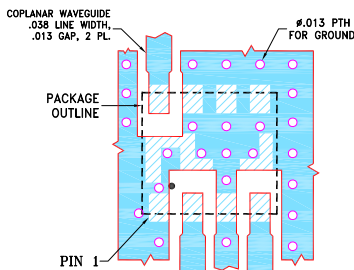
#### Outline Drawing



#### 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:**
- 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.
  - 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 7200 MHz
- low conversion loss, 6.5 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
- aqueous washable
- 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 at center band (dBm)
		Typ.	Min.	Typ.	Min.	
2300-7200	DC-3000					
LO/RF $f_c - f_u$	IF	Typ.	$\sigma$	Max.		
2300-3200		6.2	0.1	7.7	33	26
3200-3700		6.0	0.1	7.6	30	25
3700-4200		6.1	0.2	7.8	28	23
4200-7200		6.7	0.2	9.3	21	14

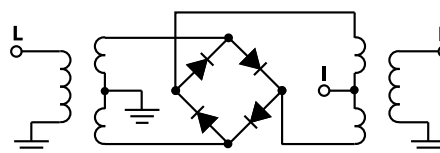
1 dB Compression: +9 dBm typ.

\* 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 +13dBm	LO +13dBm	LO +13dBm	LO +13dBm	LO +13dBm	LO +13dBm		
RF	LO								
2200.00	2230.00	6.16	39.12	25.57	2.86	2.46			
2600.00	2630.00	6.03	31.85	27.55	3.05	2.17			
3000.00	3030.00	6.07	30.38	25.74	2.86	2.11			
3200.00	3230.00	6.02	30.26	24.45	2.57	2.11			
3600.00	3630.00	5.81	29.81	24.80	2.50	2.42			
3800.00	3830.00	5.87	28.44	27.73	2.59	2.75			
4000.00	4030.00	5.88	28.21	30.73	3.19	3.16			
4200.00	4230.00	6.29	27.20	22.10	2.83	3.30			
4400.00	4430.00	6.47	26.31	16.52	3.01	3.45			
4800.00	4830.00	7.15	24.39	13.52	3.36	3.97			
5000.00	5030.00	6.95	23.42	13.64	3.42	4.21			
5200.00	5230.00	6.68	22.81	14.44	3.50	4.01			
5600.00	5630.00	6.65	21.93	16.64	3.29	3.33			
5800.00	5830.00	6.64	21.60	18.04	3.19	2.88			
6000.00	6030.00	6.40	21.25	20.04	3.11	2.39			
6220.00	6250.00	6.63	21.15	22.65	3.02	1.93			
6640.00	6670.00	6.47	19.90	22.94	3.25	1.96			
6840.00	6870.00	6.46	19.00	19.65	3.60	2.68			
7060.00	7090.00	6.90	19.84	16.96	3.63	3.47			
7260.00	7290.00	7.19	21.20	14.78	4.23	4.53			

#### Electrical Schematic



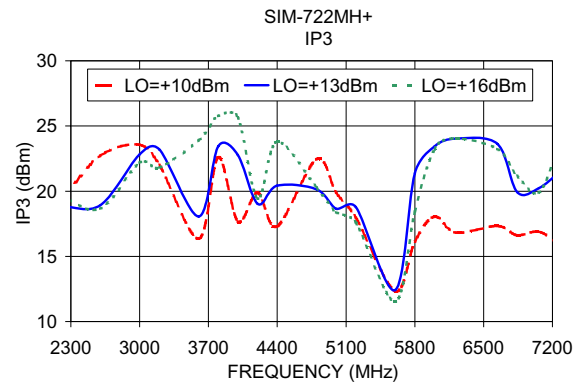
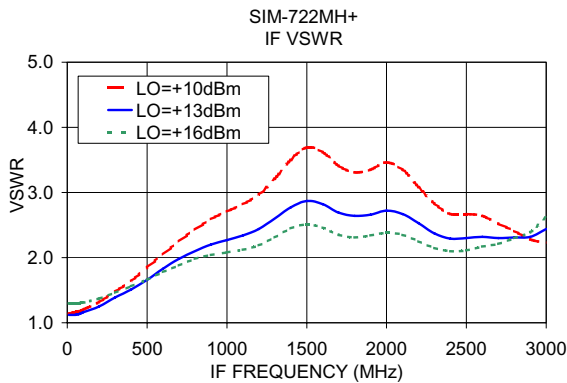
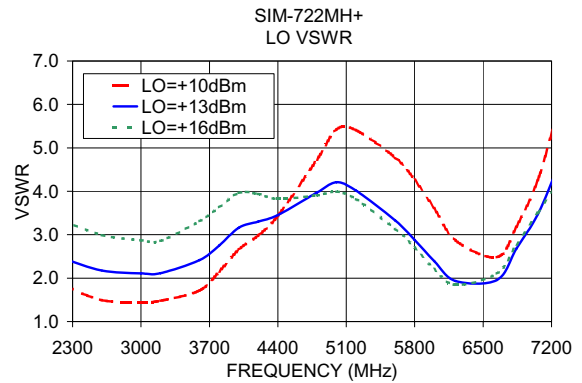
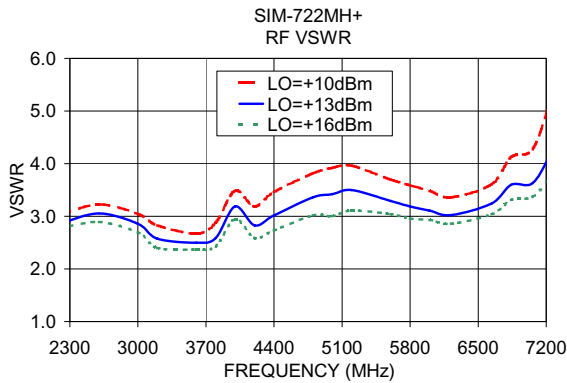
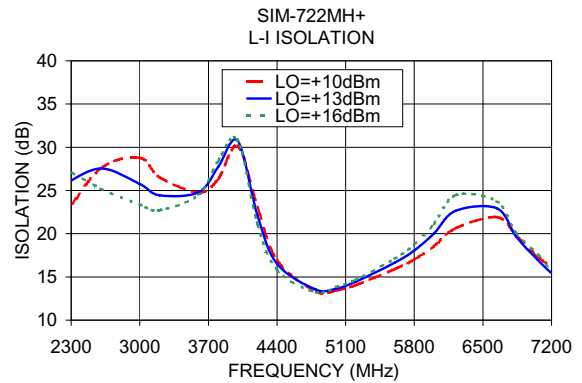
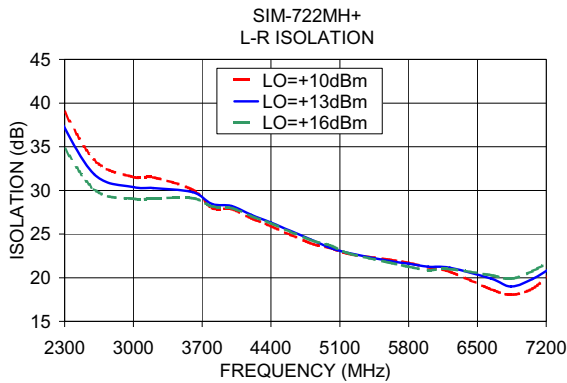
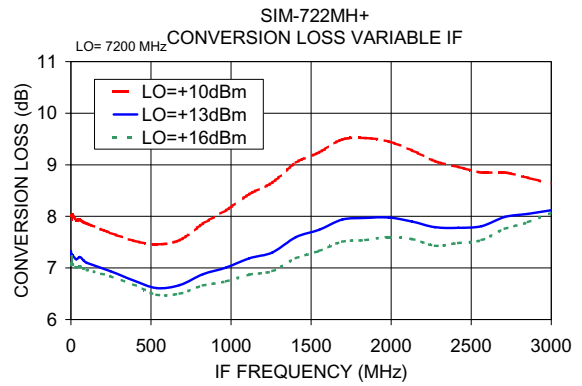
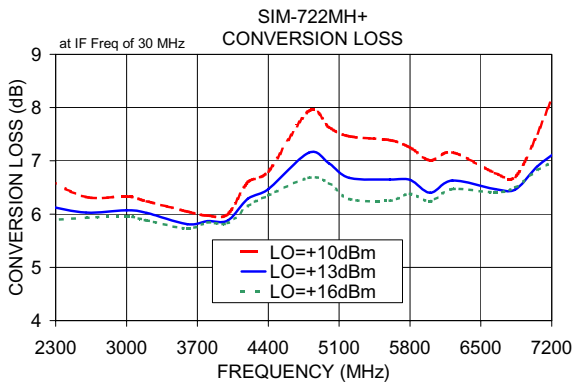
#### Notes

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