

Ceramic Surface Mount Frequency Mixer WIDE BAND

SIM-722MH+

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

Maximum Ratings

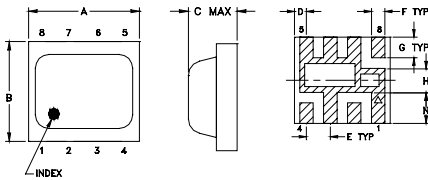
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power	50mW

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

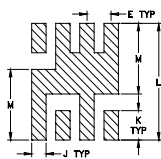
Pin Connections

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

Outline Drawing



PCB Land Pattern

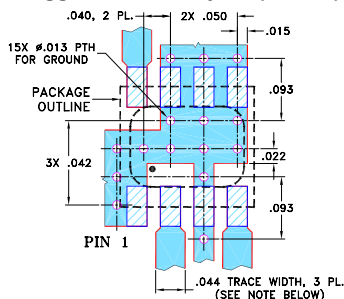


Suggested Layout,
Tolerance to be within ±0.02

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 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.	σ	Max.					
2300-3200		6.2	0.1	7.7	33	26	25	18	21
3200-3700		6.0	0.1	7.6	30	25	23	18	22
3700-4200		6.1	0.2	7.8	28	23	26	18	20
4200-7200		6.7	0.2	9.3	21	14	17	10	18

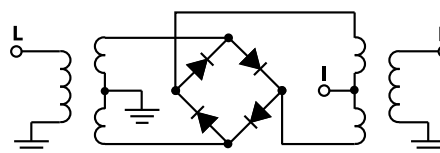
1 dB Compression: +9 dBm typ.

* 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)
RF	LO	LO +13dBm	LO +13dBm	LO +13dBm	LO +13dBm	LO +13dBm
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



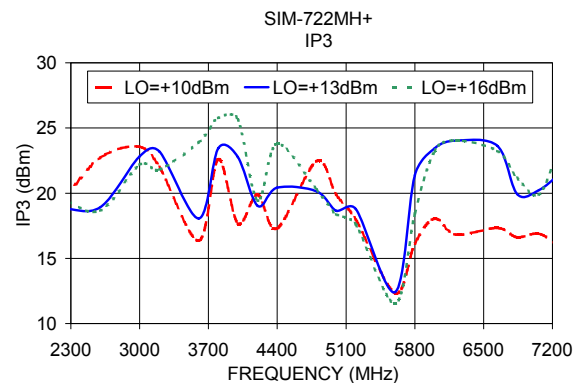
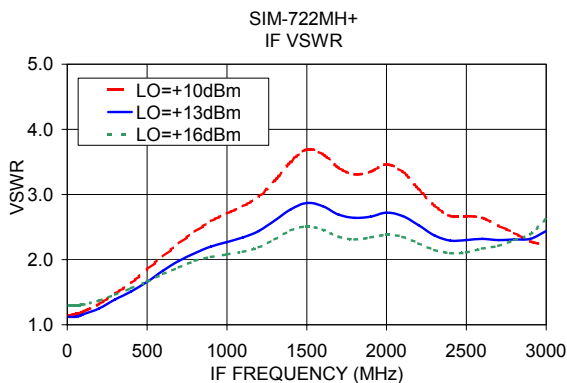
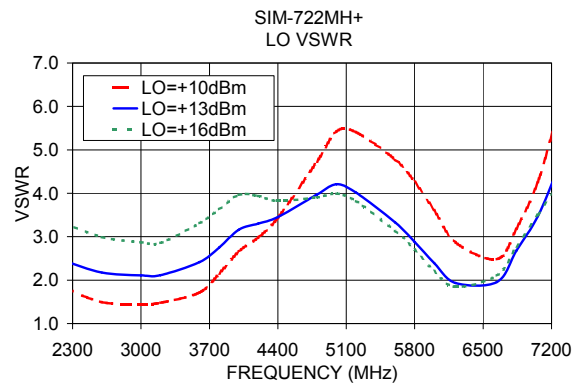
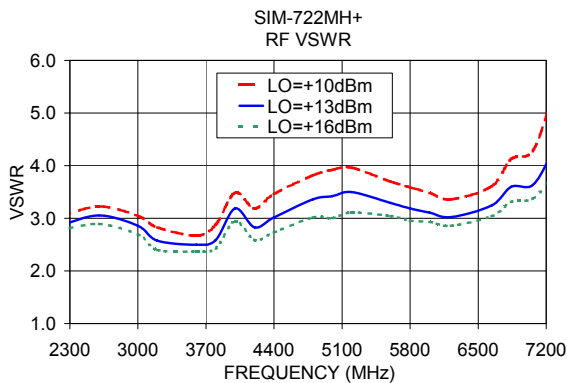
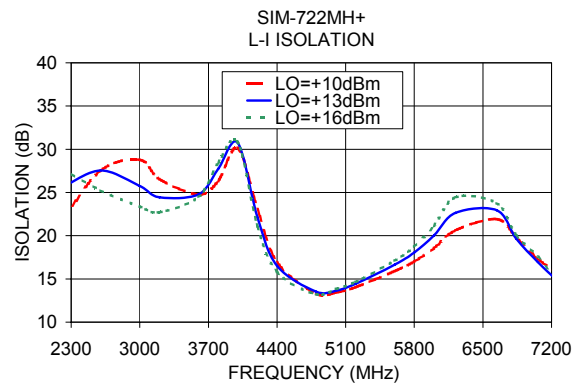
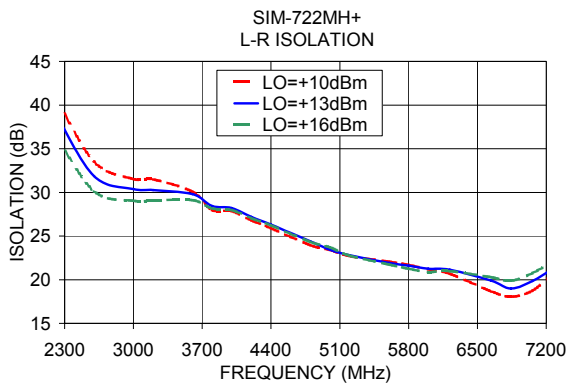
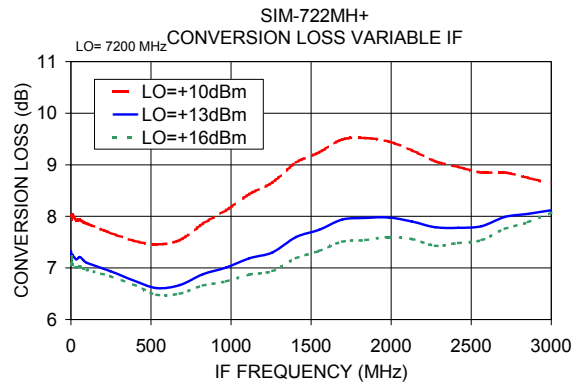
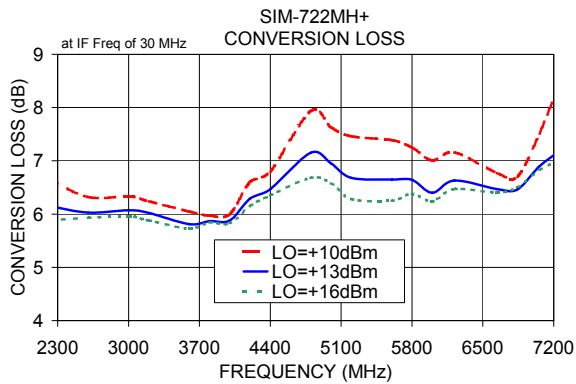
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