

Frequency Mixer WIDE BAND

SIM-24MH+

Level 13 (LO Power +13 dBm) 7300 to 20000 MHz



Maximum Ratings

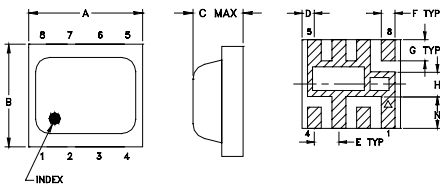
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power	50mW

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

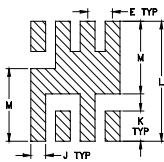
Pin Connections

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

Outline Drawing



PCB Land Pattern

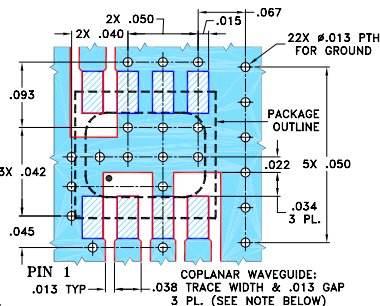


Suggested Layout,
Tolerance to be within ±0.02

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-458+ Suggested PCB Layout (PL-284)



NOTES:

- COPLANAR WAVEGUIDE PARAMETERS ARE 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

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Features

- wide bandwidth, 7300 to 20000 MHz
- low conversion loss, 5.7 dB typ.
- high L-R isolation, 36 dB typ.
- excellent IF BW, DC to 7500 MHz
- LTCC double balanced mixer
- tiny size, low profile, 0.08"
- useable as up and down converter
- aqueous washable
- protected under U.S Patent 7,027,795

Applications

- fixed satellite
- mobile
- radio location

CASE STYLE: HV1195
PRICE: \$11.95 ea. QTY (10-49)

+ RoHS compliant in accordance with EU Directive (2002/95/EC)

The +Suffix has been added in order to identify RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications.

Electrical Specifications

FREQUENCY (MHz)	CONVERSION LOSS* (dB)		LO-RF ISOLATION (dB)		LO-IF ISOLATION (dB)		IP3 at center band (dBm)			
	LO/RF $f_L - f_U$	IF	Typ.	σ	Max.	Typ.		Min.	Typ.	Min.
7300-20000	DC-7500									
7300-10000			7.0	0.2	8.5	43	31	19	13	20
10000-14500			5.7	0.1	7.5	36	29	18	13	16
14500-18000			7.6	0.3	9.3	26	19	15	10	18
18000-20000			8.5	0.3	10.9	28	22	25	16	25

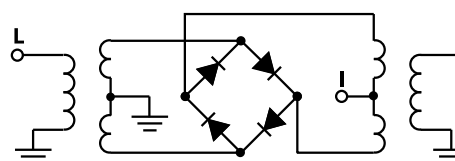
1 dB COMPR. +9 dBm typ.

* 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	LO +13dBm	LO +13dBm	
7300.00	7330.10	6.65	43.77	18.89	3.94	6.09				
7500.00	7530.10	6.32	39.57	19.63	3.47	8.37				
8000.00	8030.10	6.12	35.84	20.35	2.76	4.99				
9000.00	9030.10	7.38	48.14	19.20	4.81	2.76				
9500.00	9530.10	7.00	48.23	17.30	3.84	2.56				
10000.00	10030.10	6.73	45.78	16.83	3.38	2.62				
10500.00	10530.10	6.29	42.22	17.92	3.17	3.22				
11000.00	11030.10	5.93	40.36	19.17	2.35	2.25				
12000.00	12030.10	5.84	35.97	18.67	1.99	3.49				
12500.00	12530.10	5.55	34.02	18.08	1.92	2.31				
13000.00	13030.10	5.70	33.28	18.18	1.48	2.28				
14000.00	14030.10	5.74	34.81	19.35	1.87	2.77				
14500.00	14530.10	6.21	36.04	21.54	2.52	3.07				
15000.00	15030.10	6.80	35.11	28.80	2.98	4.28				
15500.00	15530.10	6.92	31.74	22.63	2.49	3.20				
16000.00	16030.10	7.08	27.52	16.03	2.47	2.97				
17000.00	17030.10	7.94	26.56	15.86	4.43	1.25				
18000.00	18030.10	8.16	29.19	24.93	2.49	1.99				
19000.00	19030.10	7.75	31.50	28.10	3.12	2.04				
20000.00	20030.10	9.60	26.59	22.49	2.54	1.27				

Electrical Schematic

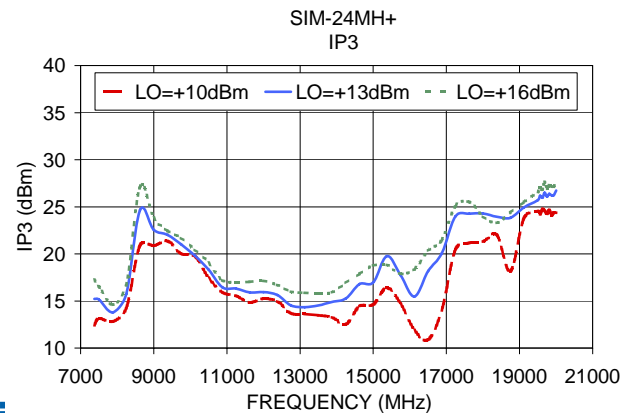
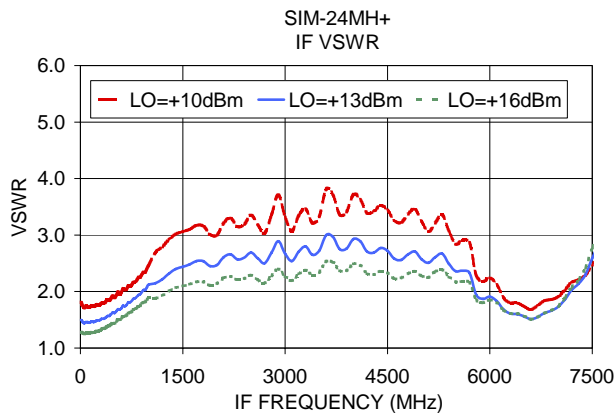
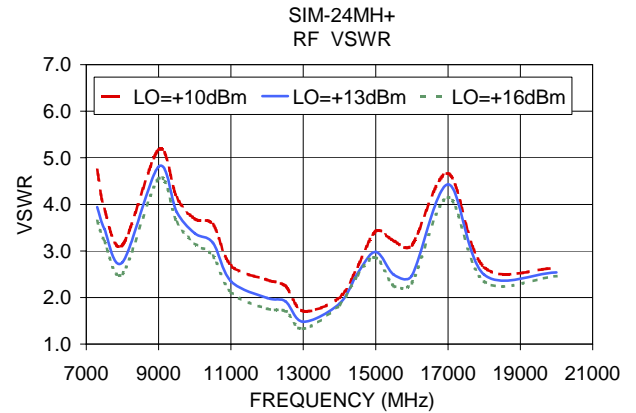
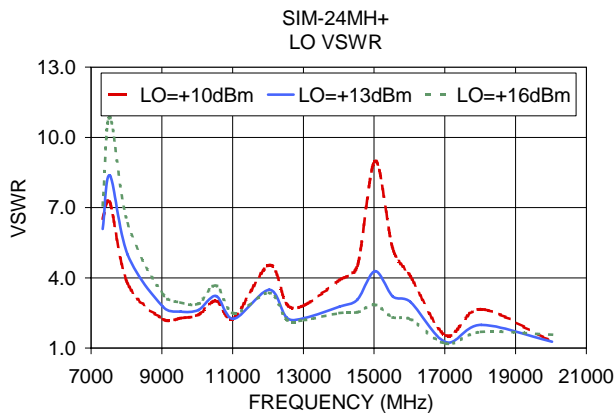
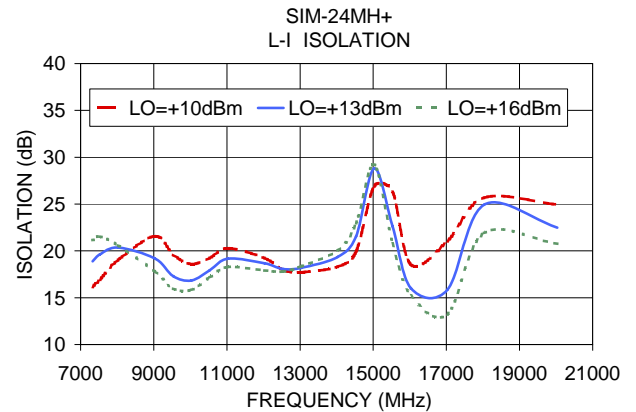
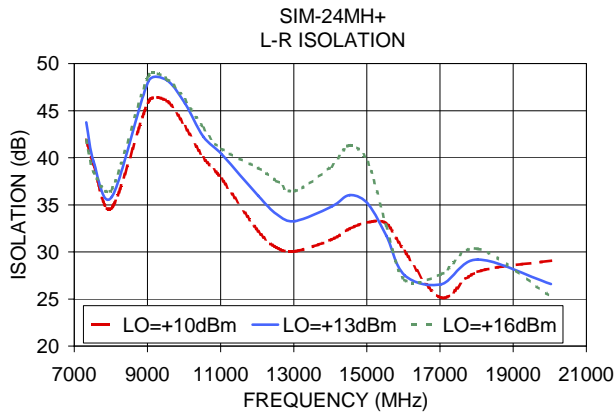
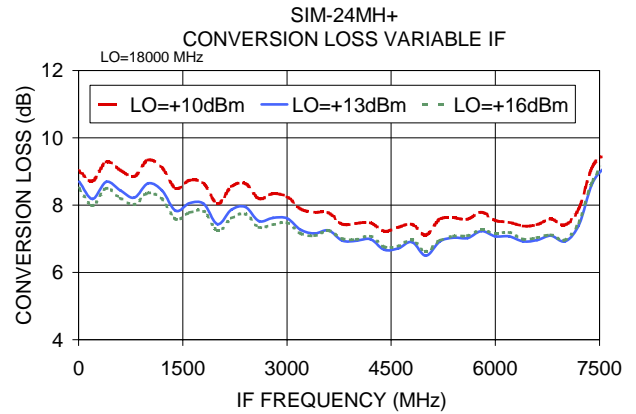
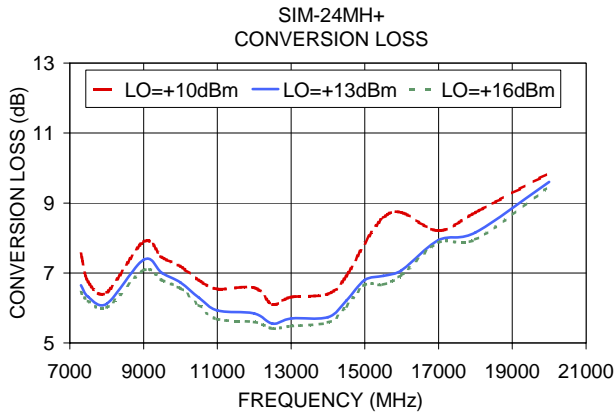


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IF/RF MICROWAVE COMPONENTS

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