

# Ceramic Surface Mount Frequency Mixer WIDE BAND

## SIM-43H+

### Level 17 (LO Power +17 dBm) 1000 to 4000 MHz



#### Maximum Ratings

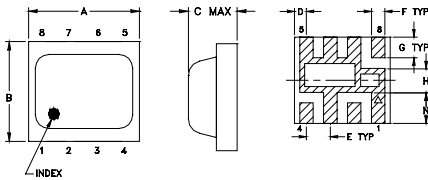
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power	100mW

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

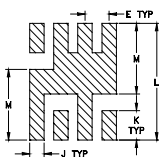
#### Pin Connections

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

#### Outline Drawing



#### PCB Land Pattern

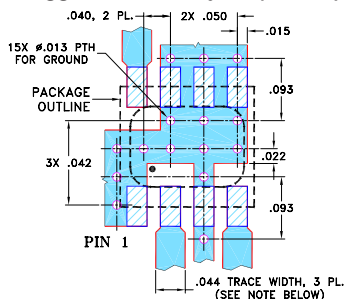


Suggested Layout,  
Tolerance to be within ±0.02

#### 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, 1000 to 4000 MHz, useable down to 800 MHz
- low conversion loss, 6.1 dB typ.
- excellent L-R isolation, 35 dB typ.
- 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

- cellular
- defense & weather radar
- defense communications
- PCN
- WCDMA
- WIFI
- blue tooth
- VSAT
- ISM

CASE STYLE: HV1195  
PRICE: \$7.95 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	IF	Typ.	σ	Max.	Typ.	Min.	Typ.	Min.	Typ.
1000-4000	DC-1500	6.5	0.1	8.6	37	32	24	9	22
1000-2500		5.7	0.1	8.6	34	28	20	12	24

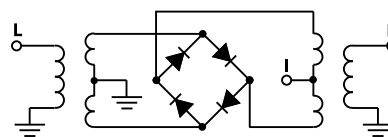
1 dB Compression: +14 dBm typ.

\* 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 +17dBm	LO +17dBm	LO +17dBm	LO +17dBm	LO +17dBm
975.00	1005.00	7.97	35.59	22.55	2.35	2.23
1050.00	1080.00	7.48	39.31	23.71	2.71	1.56
1200.00	1230.00	6.87	42.50	27.13	3.04	1.22
1350.00	1380.00	6.46	40.87	31.37	3.16	1.61
1500.00	1530.00	6.32	38.93	35.59	3.10	1.65
1650.00	1680.00	6.49	36.73	30.94	2.99	1.83
1800.00	1830.00	6.62	38.21	23.39	2.59	1.74
2025.00	2055.00	6.45	36.69	14.20	2.47	1.16
2100.00	2130.00	6.56	36.90	13.59	2.46	1.14
2250.00	2280.00	6.91	37.09	14.23	2.57	1.48
2400.00	2430.00	6.43	36.52	16.01	2.21	1.83
2550.00	2580.00	7.46	37.89	17.58	2.91	1.75
2700.00	2730.00	6.37	36.23	20.10	2.43	1.82
2850.00	2880.00	6.12	32.81	21.75	1.93	1.70
3000.00	3030.00	5.65	36.85	25.56	1.52	1.73
3105.00	3135.00	5.57	35.17	31.30	1.40	1.85
3180.00	3210.00	5.54	35.28	37.78	1.33	1.73
3540.00	3570.00	6.45	33.40	22.10	1.86	1.71
3900.00	3930.00	7.66	32.59	17.74	2.54	2.44
4080.00	4110.00	7.54	34.81	18.91	2.65	3.28

#### Electrical Schematic



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