

Ceramic Surface Mount Frequency Mixer WIDE BAND

SIM-153+

Level 7 (LO Power +7 dBm) 3400 to 15000 MHz



Maximum Ratings

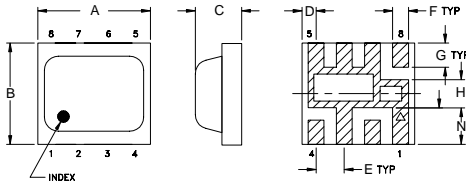
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power	50mW

For extended temperature range, consult factory.

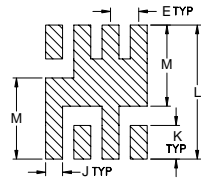
Pin Connections

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

Outline Drawing



PCB Land Pattern

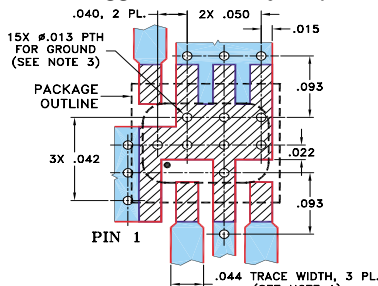


Suggested Layout,
Tolerance to be within ±.002

Outline Dimensions (inch)

A	B	C	D	E	F	G
0.200	0.180	0.087	0.025	0.050	0.028	0.043
5.08	4.57	2.21	0.64	1.27	0.71	1.09
H	J	K	L	M	N	wt
.0050	.030	0.060	0.238	0.144	0.065	grams
0.13	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: 1. 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.
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.
3. THE PLATED THROUGH VIA HOLES IN THE PCB GROUND PAD SHALL BE PLUGGED. IF VIA HOLES CANNOT BE PLUGGED, IT IS RECOMMENDED TO CAP THE VIAS WITH SOLDER MASK ON THE BACK SIDE OF THE BOARD.
- DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)
■ DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

Features

- wide bandwidth, 3400 to 15000 MHz
- low conversion loss, 6.8 dB typ.
- high L-R isolation, 36 dB typ.
- excellent IF BW, DC to 4000 MHz
- LTCC double balanced mixer
- low profile, 0.08"
- protected by US patent 7,027,795
- useable as up and down converter

Applications

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

CASE STYLE: HV1195
PRICE: \$9.95 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)			
		Typ.	Min.	Typ.	Min.				
3400-15000	DC-4000	Typ.	σ	Max.	Typ.	Min.	Typ.		
3400-10000		6.5	0.3	9.5	36	25	15	12	10
10000-13500		10.0	0.7	13.2	36	27	30	15	—
13500-15000		8.0	0.4	10.4	31	20	27	20	—

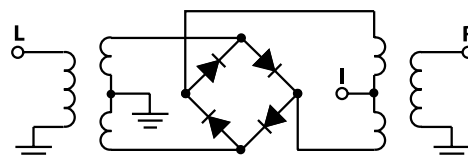
1 dB COMPR. +1 dBm typ.

* 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)
3400.00	7.14	42.99	19.46	2.82	11.83
4000.00	6.32	41.32	18.41	3.31	4.30
4500.00	6.26	37.54	15.84	2.71	2.40
5000.00	6.75	40.73	14.23	4.10	1.33
5600.00	7.01	37.75	14.10	4.02	1.87
6500.00	5.97	36.81	15.44	2.60	2.62
7400.00	5.34	34.01	15.81	1.44	2.97
8000.00	5.43	28.07	12.83	1.58	2.51
8500.00	5.64	30.06	16.20	2.15	1.82
9000.00	6.59	38.23	22.75	3.25	1.45
9500.00	7.58	32.38	20.23	3.67	1.64
10000.00	8.11	34.68	20.01	4.62	2.48
11000.00	8.92	40.65	27.99	5.27	2.84
12000.00	9.95	33.01	42.68	5.30	3.63
13050.00	9.99	36.98	37.00	4.78	2.46
13500.00	9.85	40.28	33.11	4.65	2.28
14025.00	8.53	38.51	30.02	2.71	2.32
14550.00	7.26	31.68	28.81	1.18	2.18
15075.00	8.28	23.38	29.68	1.84	2.69

Electrical Schematic



Mini-Circuits

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