

Ceramic Surface Mount Frequency Mixer WIDE BAND

SIM-43+

Level 7 (LO Power +7 dBm) 750 to 4200 MHz



Maximum Ratings

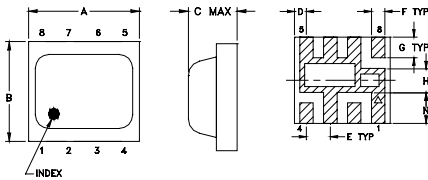
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power	50mW

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

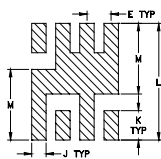
Pin Connections

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

Outline Drawing



PCB Land Pattern

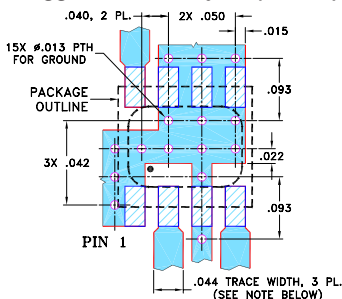


Suggested Layout,
Tolerance to be within ±0.002

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, 750 to 4200 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: \$7.45 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.				
LO/RF f_i-f_u	IF	Typ.	σ	Max.	Typ.	Min.	Typ.		
750-4200	DC-1500	6.3	0.1	7.8	37	30	24	11	12
2500-4200		5.7	0.1	8.1	32	25	20	14	12

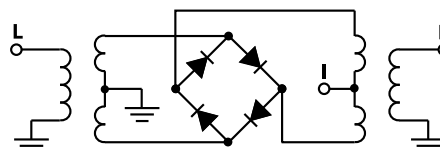
1 dB Compression: +1 dBm typ.

* 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)	
						LO +7dBm
RF	LO	LO +7dBm	LO +7dBm	LO +7dBm	LO +7dBm	
740.00	771.00	6.73	40.31	25.02	2.11	7.97
800.00	831.00	6.20	37.61	24.68	1.71	5.22
900.00	931.00	6.25	36.50	25.33	1.97	3.55
1000.00	1031.00	6.90	40.60	26.55	2.89	2.05
1200.00	1231.00	6.41	42.66	31.50	3.33	1.04
1400.00	1431.00	6.28	37.92	37.58	3.68	1.43
1600.00	1631.00	6.31	36.81	32.80	3.47	2.14
1800.00	1831.00	6.66	38.10	22.63	3.57	2.37
2000.00	2031.00	6.62	37.15	16.13	3.31	1.77
2200.00	2231.00	6.28	36.38	17.49	3.06	1.88
2400.00	2431.00	5.55	35.98	20.30	2.29	2.02
2700.00	2731.00	5.33	33.12	24.66	2.02	1.74
3000.00	3031.00	5.07	31.91	29.23	1.29	1.35
3200.00	3231.00	5.35	31.77	28.40	1.24	1.20
3400.00	3431.00	5.63	31.28	23.23	1.55	1.18
3800.00	3831.00	6.25	29.57	20.18	2.67	1.89
3900.00	3931.00	6.58	30.95	20.66	3.40	2.29
4000.00	4031.00	6.97	32.47	19.31	3.53	2.54
4100.00	4131.00	7.20	31.49	18.27	3.74	3.00
4200.00	4231.00	7.37	32.50	17.81	4.17	3.91

Electrical Schematic



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ISO 9001 ISO 14001 AS 9100 CERTIFIED

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Page 1 of 2

