

Surface Mount Frequency Mixer

Level 7 (LO Power +7 dBm) 5 to 1500 MHz

ADE-5+



Generic photo used for illustration purposes only
CASE STYLE: CD542

+RoHS Compliant

The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

Available Tape and Reel at no extra cost	
Reel Size	Devices/Reel
7"	20, 50, 100, 200
13"	500, 1000

Maximum Ratings

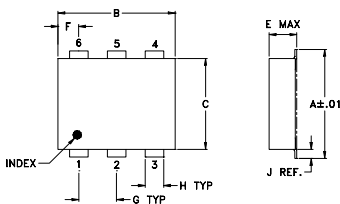
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power	50mW
IF Current	40mA

Permanent damage may occur if any of these limits are exceeded.

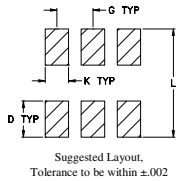
Pin Connections

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

Outline Drawing



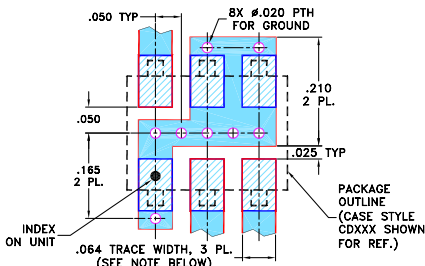
PCB Land Pattern



Outline Dimensions (inch/mm)

A	B	C	D	E	F	G
.272	.310	.220	.100	.112	.055	.100
6.91	7.87	5.59	2.54	2.84	1.40	2.54
H	J	K	L			wt
.030	.026	.065	.300			grams
0.76	0.66	1.65	7.62			0.20

Demo Board MCL P/N: TB-03 Suggested PCB Layout (PL-052)



- NOTES:
- TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .030" ± .002"; 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

Notes

- Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
- Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
- The parts covered by this specification document are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at www.minicircuits.com/WCLStore/terms.jsp

Features

- low conversion loss, 6.6 dB typ.
- excellent L-R isolation, 40 dB typ.
- excellent IP3, 15 dBm
- aqueous washable
- protected by U.S. Patent 6,133,525

Applications

- cellular
- PCS

Electrical Specifications

FREQUENCY (MHz)	CONVERSION LOSS (dB)	LO-RF ISOLATION (dB)			LO-IF ISOLATION (dB)			IP3 at center band (dBm)										
		L	M	U	L	M	U											
5-1500	DC-1000	6.6	0.10	7.5	9.3	50	40	40	25	33	23	50	40	30	20	20	10	15

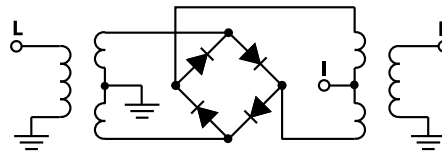
1 dB COMP.: +1 dBm typ.
Phase detection, positive polarity

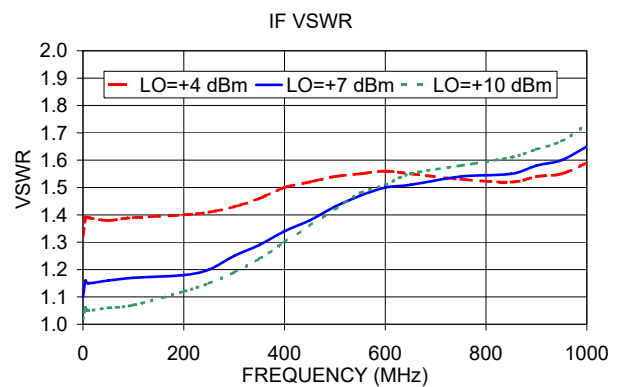
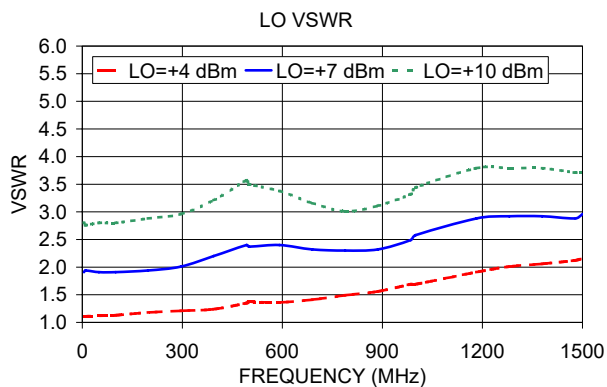
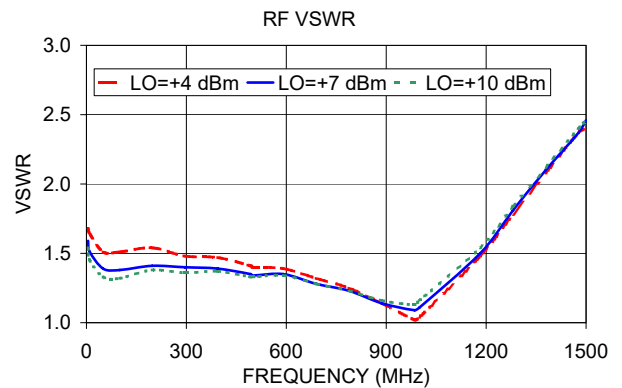
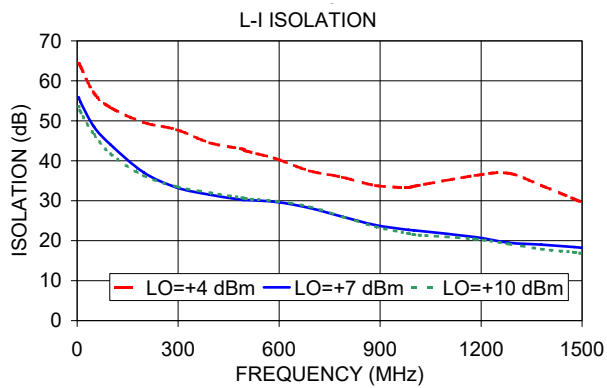
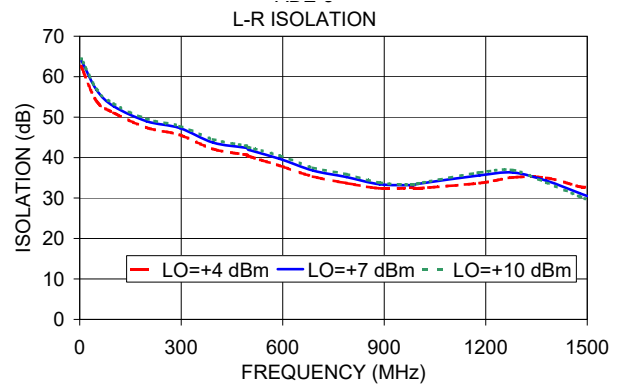
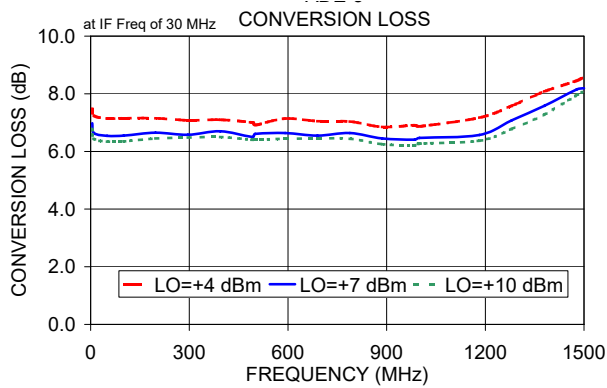
L = low range [f_L to $10 f_L$] M = mid range [$10 f_L$ to $f_U/2$] U = upper range [$f_U/2$ to f_U]
m = mid band [$2f_L$ to $f_U/2$]

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 +7dBm	LO +7dBm	LO +7dBm	LO +7dBm	LO +7dBm
5.0	35.0	7.0	63.9	53.6	1.59	1.91
10.0	40.0	6.6	63.2	52.2	1.51	1.94
50.0	80.0	6.5	56.7	46.6	1.39	1.91
100.0	130.0	6.6	52.7	41.7	1.38	1.91
197.1	227.1	6.7	49.0	36.3	1.41	1.94
295.6	325.6	6.6	47.3	33.5	1.40	2.01
394.1	424.1	6.7	43.7	32.0	1.39	2.20
492.6	522.6	6.5	42.4	30.7	1.35	2.40
500.0	530.0	6.6	41.9	30.5	1.34	2.37
591.1	621.1	6.6	39.7	29.9	1.35	2.40
689.6	719.6	6.6	36.8	28.5	1.28	2.32
788.1	818.1	6.6	35.2	26.0	1.23	2.30
886.6	916.6	6.5	33.4	23.5	1.14	2.32
985.1	1015.1	6.4	33.2	21.8	1.09	2.49
1000.0	1030.0	6.5	33.5	21.5	1.11	2.58
1182.0	1212.0	6.6	35.6	20.4	1.50	2.88
1280.5	1310.5	7.1	36.3	19.2	1.81	2.92
1379.0	1409.0	7.6	34.3	17.9	2.10	2.92
1477.5	1507.5	8.2	31.2	17.1	2.37	2.88
1500.0	1530.0	8.2	30.5	16.8	2.46	2.96

Electrical Schematic





Notes

- A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
- B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
- C. The parts covered by this specification document are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at www.minicircuits.com/MCLStore/terms.jsp

