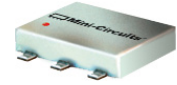


# Surface Mount Frequency Mixer

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

## ADE-5+ ADE-5



CASE STYLE: CD542

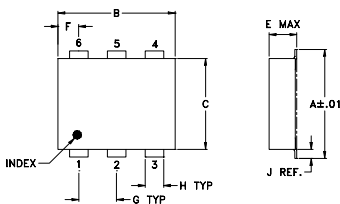
### Maximum Ratings

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.	

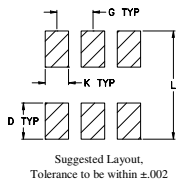
### Pin Connections

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

### Outline Drawing



### PCB Land Pattern

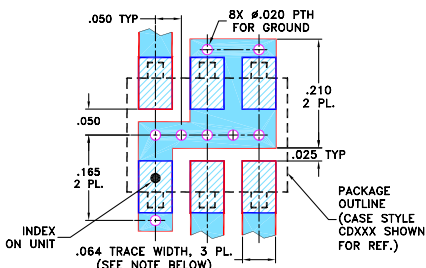


Suggested Layout,  
Tolerance to be within ±.002

### 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.
- 

### Notes

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- The parts covered by this specification document are subject to Mini-Circuit's 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-Circuit's website at [www.minicircuits.com/MCLStore/terms.jsp](http://www.minicircuits.com/MCLStore/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

### +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, 500
13"	500, 1000

### 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	50	40	33	50	40	20	15

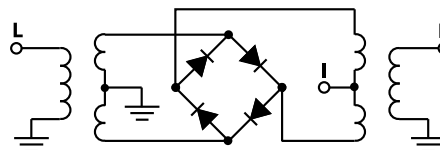
1 dB COMP.: +1 dBm typ.  
Phase detection, positive polarity

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  $f_U/2$ ]

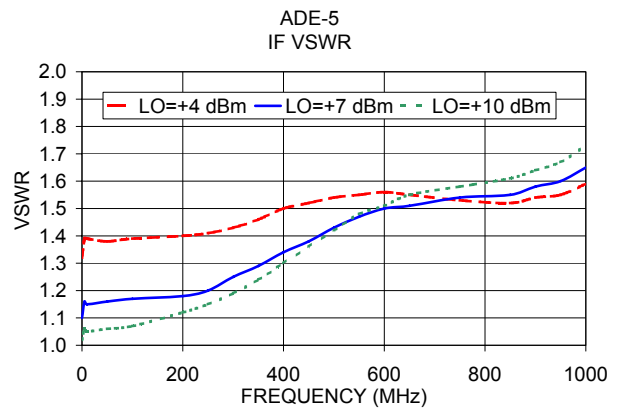
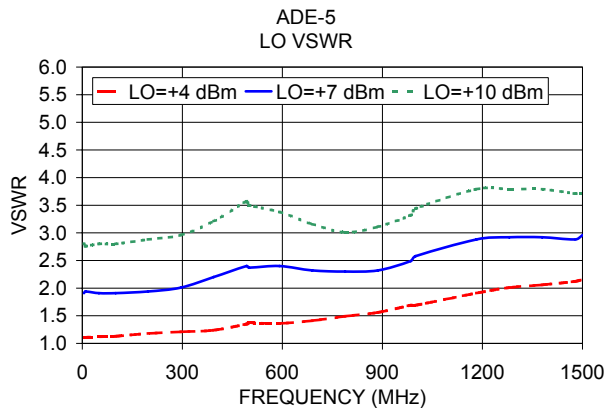
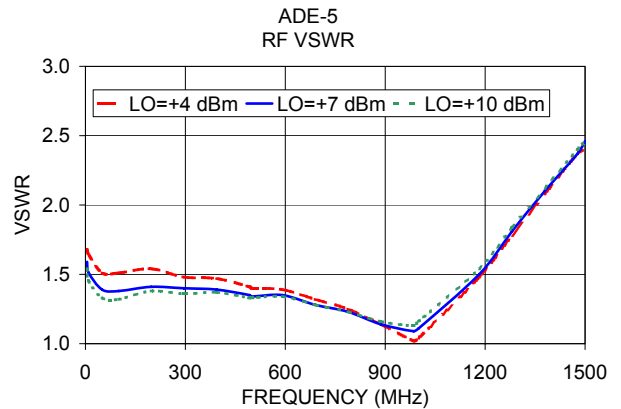
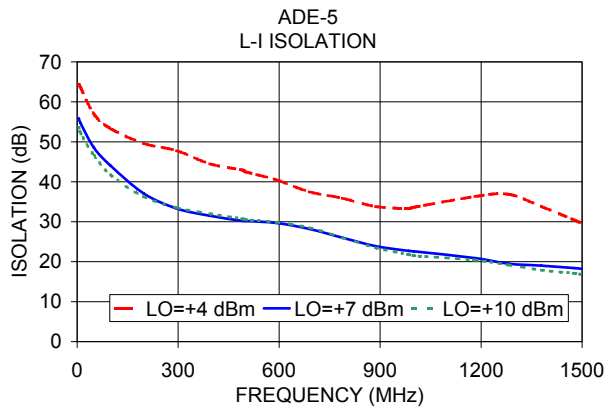
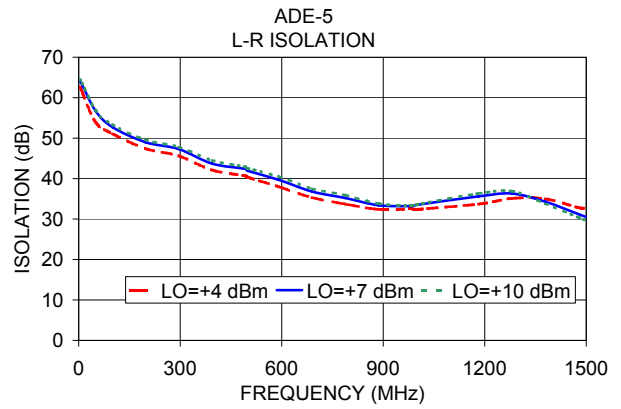
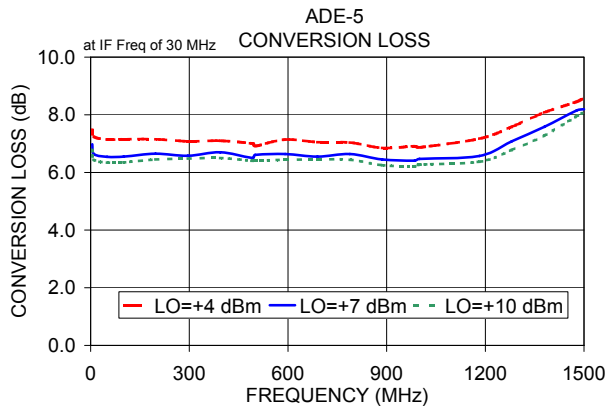
### Typical Performance Data

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



## Performance Charts



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