

Surface Mount Frequency Mixer

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

ADE-5+
ADE-5



Maximum Ratings

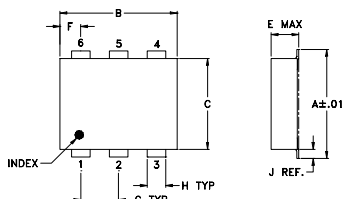
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power	50mW
IF Current	40mA

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

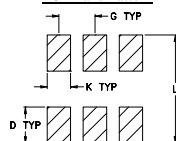
Pin Connections

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

Outline Drawing



PCB Land Pattern

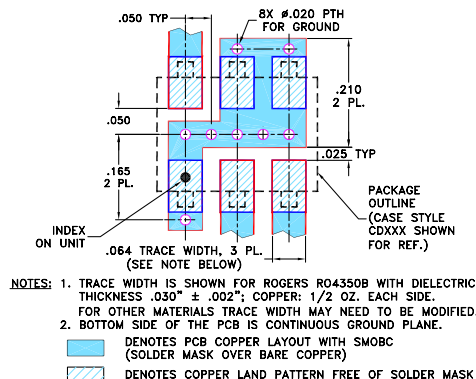


Suggested Layout,
Tolerance to be within ±.002

Outline Dimensions (inch)

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

- 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

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

CASE STYLE: CD542
PRICE: \$3.45 ea. QTY (20)

+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)
		Mid-Band m	Total Range Max.			L	M	U	L	M	U	
LO/RF	IF	$\bar{X}$	σ	Max.	Max.	Typ. Min.	Typ. Min.	Typ. Min.	Typ. Min.	Typ. Min.	Typ. Min.	Typ.
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 band [$2f_L$ to $f_U/2$]

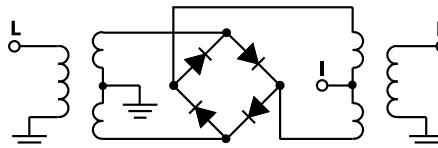
M = mid range [$10 f_L$ to $f_U/2$]

U = upper range [$f_U/2$ to f_U]

Typical Performance Data

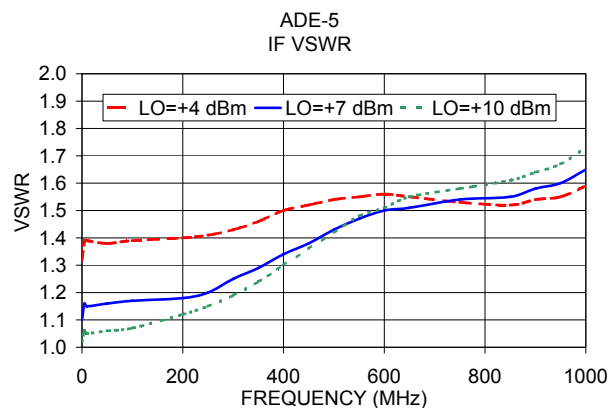
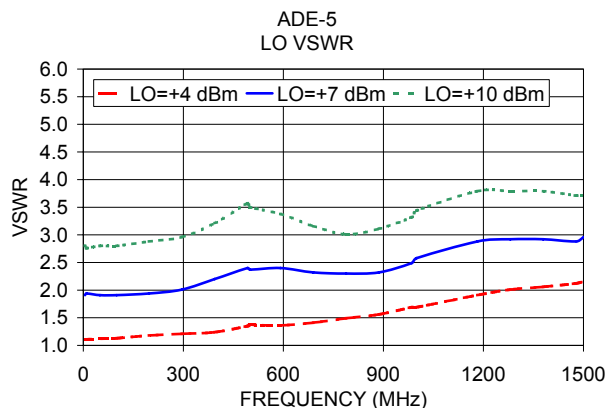
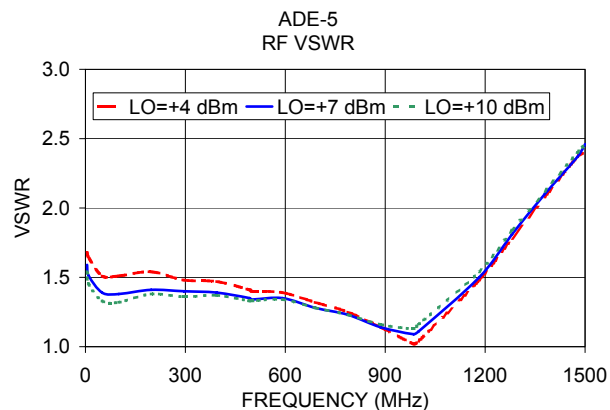
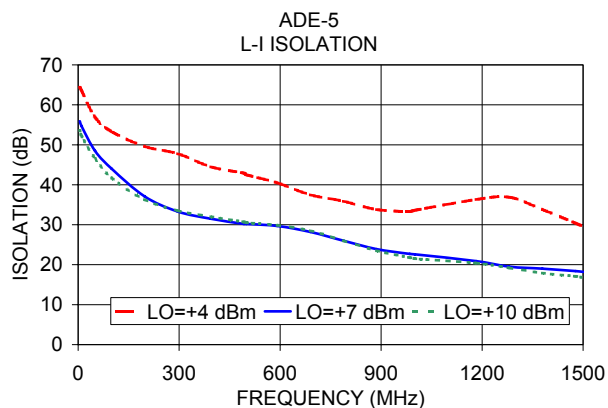
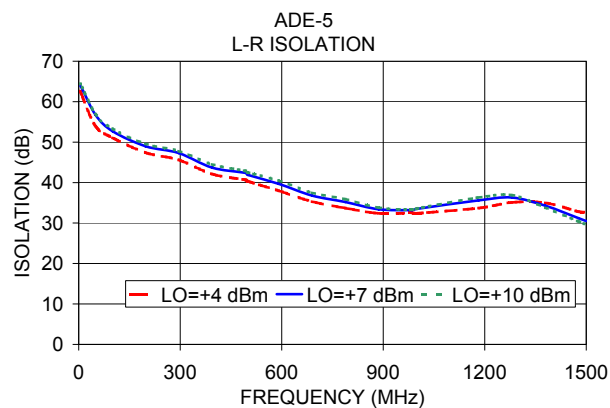
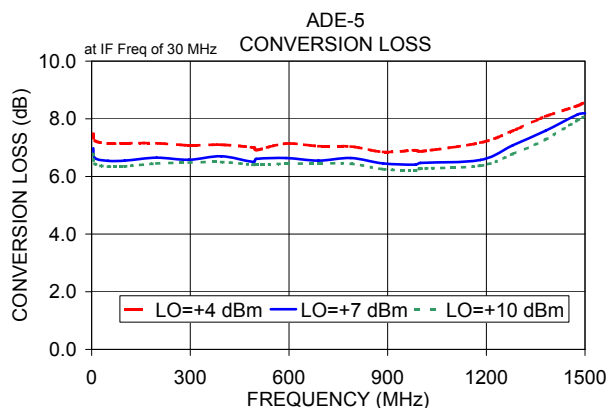
Frequency (MHz)		Conversion Loss (dB)	Isolation L-R (dB)	Isolation L-I (dB)	VSWR RF Port (:1)	VSWR LO Port (:1)
RF	LO	LO +7dBm	LO +7dBm	LO +7dBm	LO +7dBm	LO +7dBm
5.0	35.0	7.0	63.9	53.6	1.59	1.91
10.0	40.0	6.6	63.2	52.2	1.51	1.94
50.0	80.0	6.5	56.7	46.6	1.39	1.91
100.0	130.0	6.6	52.7	41.7	1.38	1.91
197.1	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

ADE-5+
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