

Surface Mount Frequency Mixer

ADE-2M+

Level 7 (LO Power +7 dBm) 5 to 1000 MHz



CASE STYLE: CD542

Maximum Ratings

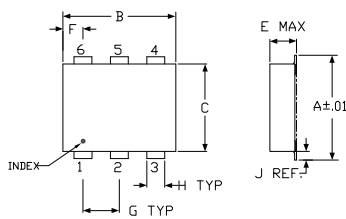
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power	200mW
IF Current	40mA

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

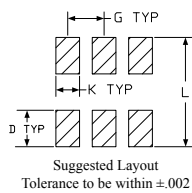
Pin Connections

	Config. 1	Config. 2
LO	6	3
RF	3	6
IF 1	2	2
IF 2	—	5
GROUND	1,4,5	1,4

Outline Drawing



PCB Land Pattern

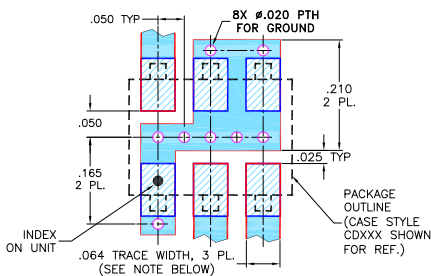


Outline Dimensions (inch/mm)

A	B	C	D	E	F	G
.272	.310	.220	.100	.112	.055	.100
6.91	7.87	5.58	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	.20

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



NOTES: 1. 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.
2. 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/MCLStore/terms.jsp

Features

- excellent L-R isolation, 40 dB typ.
- low profile package
- can be used as BI-PHASE MODULATOR for switching between 0° to 180°
- aqueous washable

Applications

- cellular
- GSM
- ISM

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 - 1000	DC - 1000	60	40	25	55	30	20	17

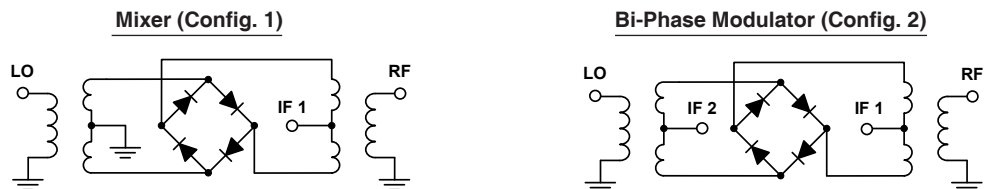
1 dB COMP.: +1 dBm typ.

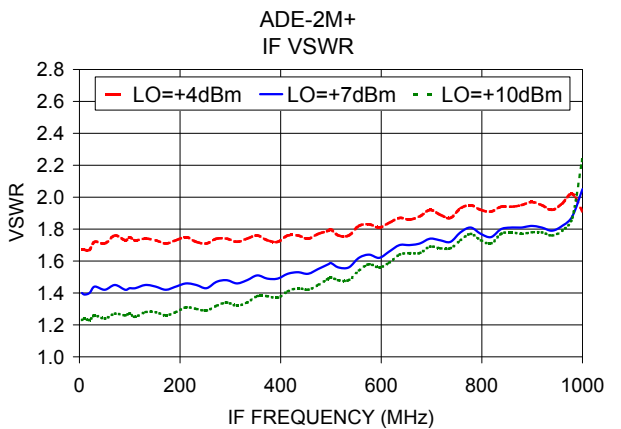
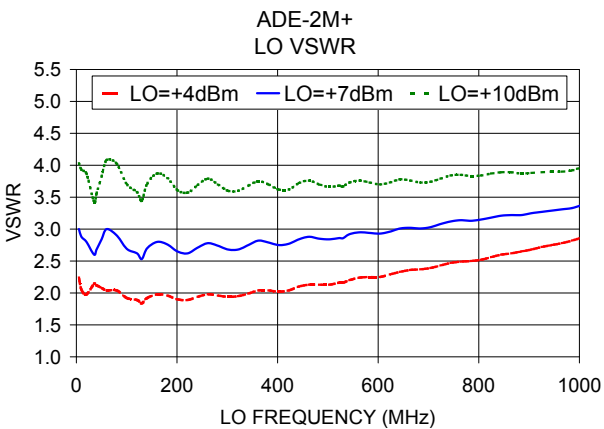
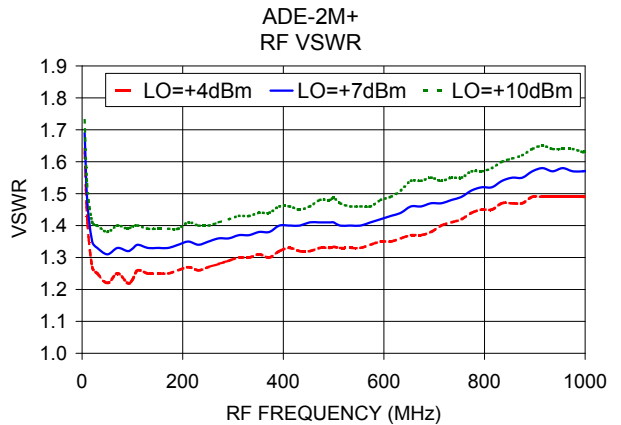
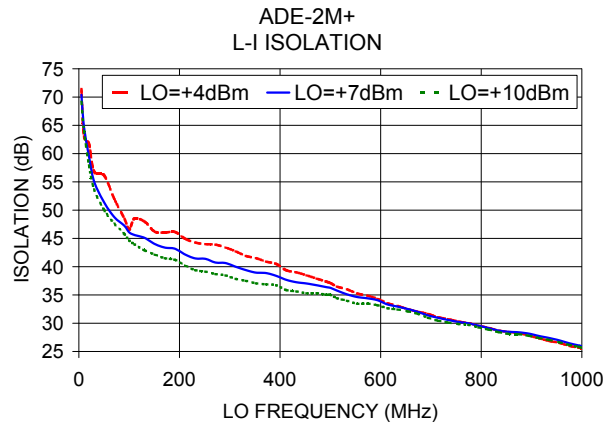
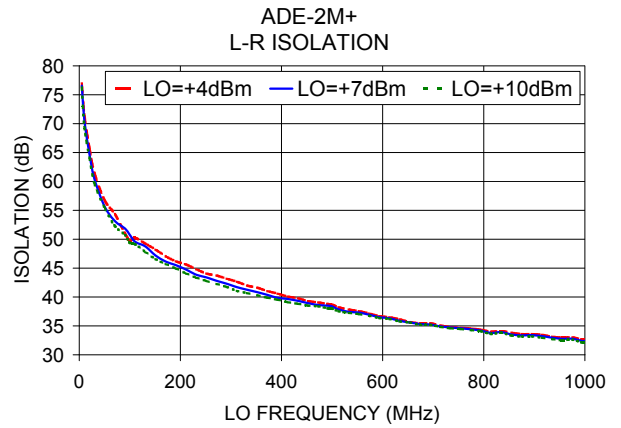
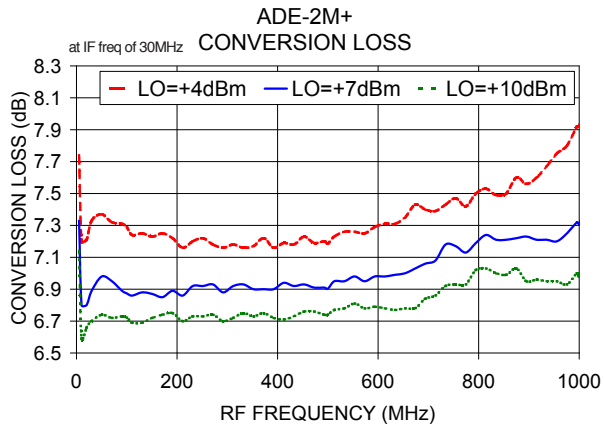
L = low range [f_L to $10 f_L$] M = mid range [$10 f_L$ to $f_U/2$] U = upper range [$f_U/2$ to f_U]
m = mid band [$2 f_L$ to $f_U/2$]

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
5.00	35.10	7.33	76.58	70.39	1.69	2.60
10.10	40.10	6.80	70.62	64.79	1.48	2.68
30.21	60.21	6.89	60.39	55.08	1.33	3.00
50.32	80.32	6.98	55.64	51.36	1.31	2.90
70.44	100.44	6.95	53.15	48.76	1.33	2.69
90.55	120.55	6.89	51.84	47.23	1.32	2.62
100.00	130.00	6.87	50.75	46.08	1.33	2.53
171.00	201.00	6.85	46.14	43.37	1.33	2.65
231.34	261.34	6.92	43.86	41.46	1.34	2.78
291.67	321.67	6.88	42.30	40.64	1.36	2.68
352.01	382.01	6.90	40.84	38.95	1.38	2.79
412.35	442.35	6.94	39.66	37.67	1.40	2.84
500.00	530.00	6.90	38.38	36.26	1.41	2.86
593.36	623.36	6.98	36.51	34.08	1.42	2.96
673.81	703.81	7.03	35.33	32.01	1.46	3.03
714.03	744.03	7.08	34.92	30.96	1.47	3.12
774.37	804.37	7.13	34.42	29.99	1.51	3.15
834.71	864.71	7.21	33.93	28.70	1.54	3.22
955.38	985.38	7.20	32.76	26.96	1.58	3.33
1000.00	1030.00	7.31	32.41	25.92	1.57	3.45

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

