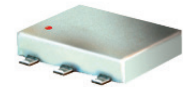


Surface Mount Frequency Mixer

ADE-2M+

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



CASE STYLE: CD542

Maximum Ratings

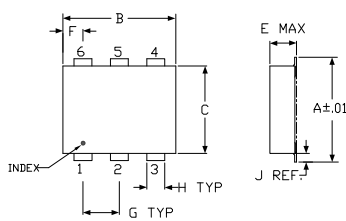
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power	200mW
IF Current	40mA

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

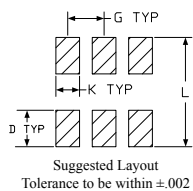
Pin Connections

	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

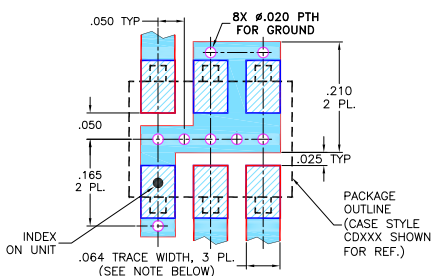


Outline Dimensions (inch/mm)

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

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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.

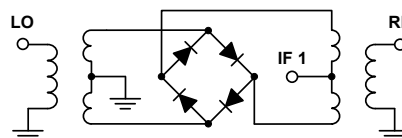
L = low range [f_L to $10 f_L$] M = mid range [$10 f_L$ to $f_U/2$] U = upper range [$f_U/2$ to f_U]
m = mid band [$2 f_L$ to $f_U/2$]

Typical Performance Data

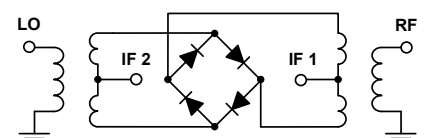
Frequency (MHz)		Conversion Loss (dB)	Isolation L-R (dB)	Isolation L-I (dB)	VSWR RF PORT (:1)	VSWR LO PORT (:1)
RF	LO	LO +7dBm	LO +7dBm	LO +7dBm	LO +7dBm	LO +7dBm
5.00	35.10	7.33	76.58	70.39	1.69	2.60
10.10	40.10	6.80	70.62	64.79	1.48	2.68
30.21	60.21	6.89	60.39	55.08	1.33	3.00
50.32	80.32	6.98	55.64	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

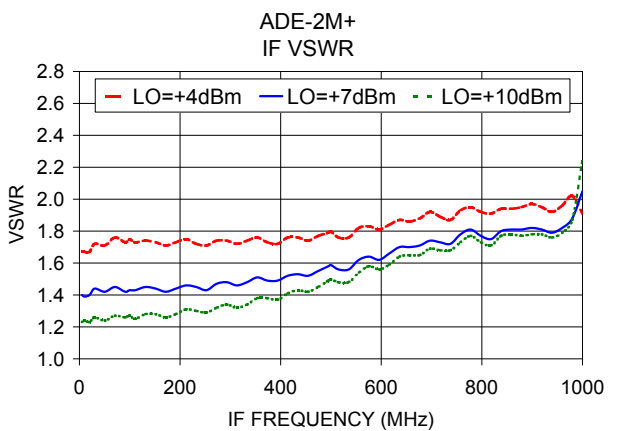
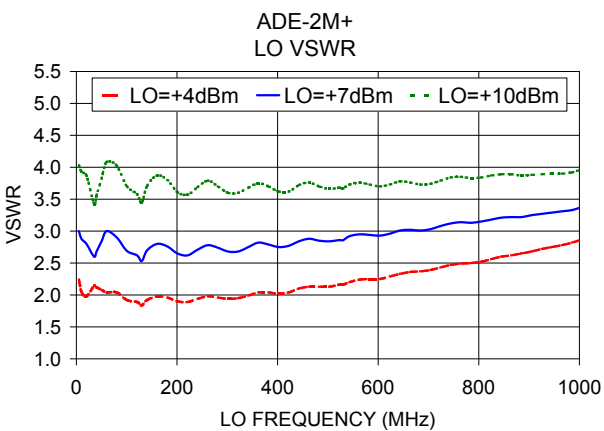
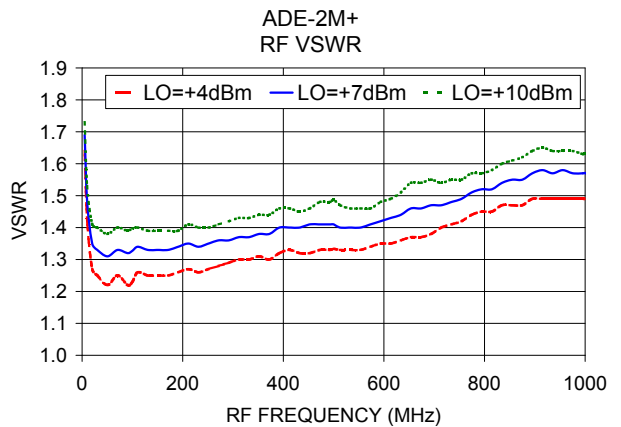
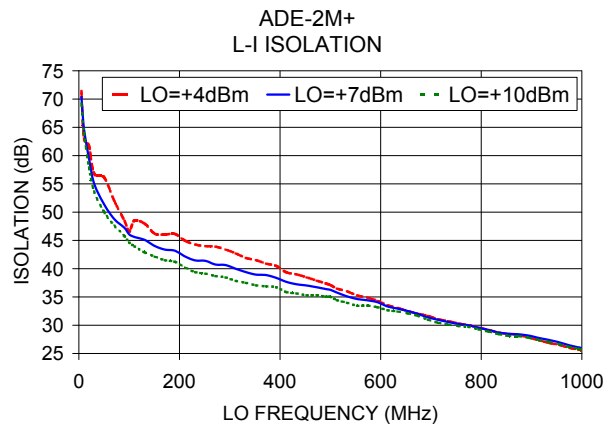
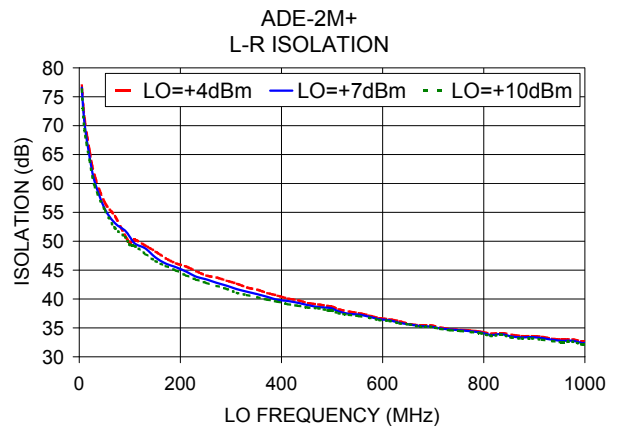
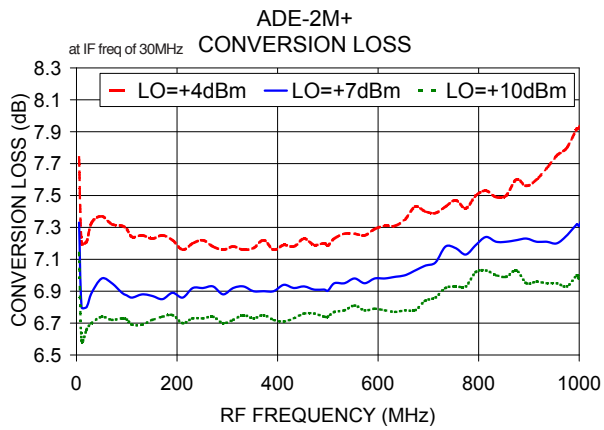
Electrical Schematic

Mixer (Config. 1)



Bi-Phase Modulator (Config. 2)





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