

# High Reliability Mixer

## ADE-R30WLH+

Level 10 (LO Power +10 dBm) 300 to 4000 MHz



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

### Features

- ultra wideband, 300 to 4000 MHz
- hermetically sealed ceramic quad
- low conversion loss, 7.5 dB typ.
- excellent L-R isolation, 40 dB typ.
- low profile package
- aqueous washable
- protected by US Patent 6,133,525

### Applications

- cellular
- PCN
- instrumentation
- ISM

### +RoHS Compliant

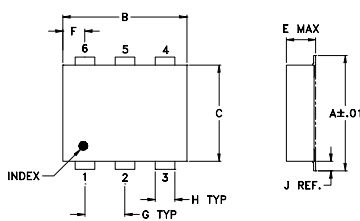
The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications



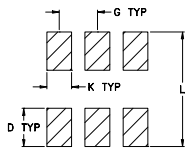
Available Tape and Reel at no extra cost

Reel Size	Devices/Reel
7"	10, 20, 50, 100, 200, 500
13"	500, 1000

### Outline Drawing



### PCB Land Pattern



Suggested Layout, Tolerance to be within ±0.02

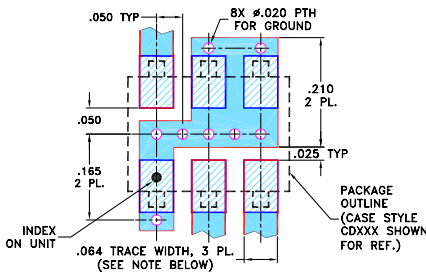
### Outline Dimensions (inch/mm)

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: 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

### Electrical Specifications

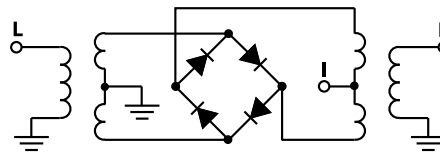
FREQUENCY (MHz)	CONVERSION LOSS (dB)	LO-RF ISOLATION (dB)		LO-IF ISOLATION (dB)		IP3 at center band (dBm)		
		LO	LO	LO	LO			
300-4000	DC-950	7.5	0.20	9.0	9.8	40 24	16 6	15

1 dB COMP.: +5 dBm typ.  
m= mid band [2f<sub>L</sub> to f<sub>U</sub>/2]

### Typical Performance Data

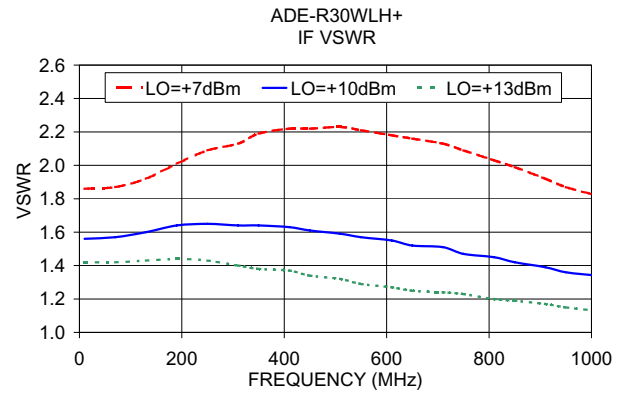
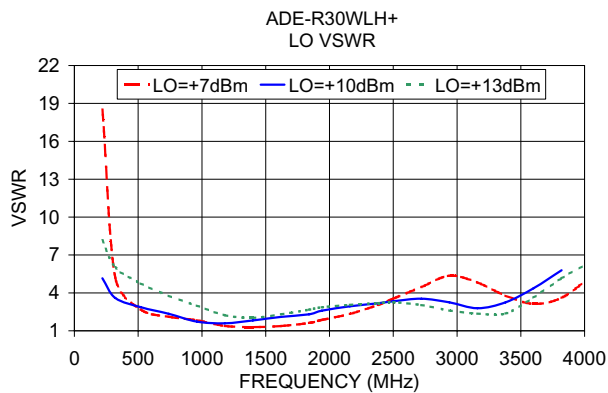
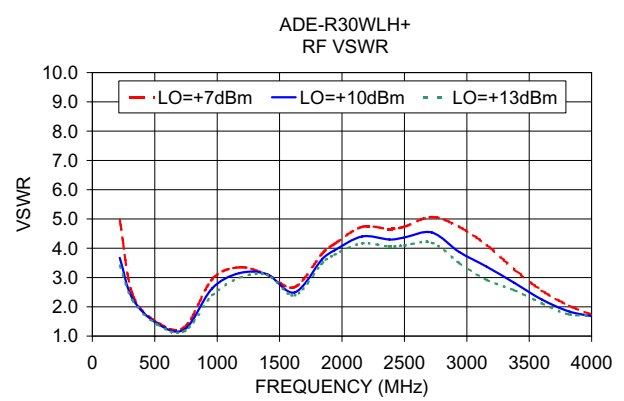
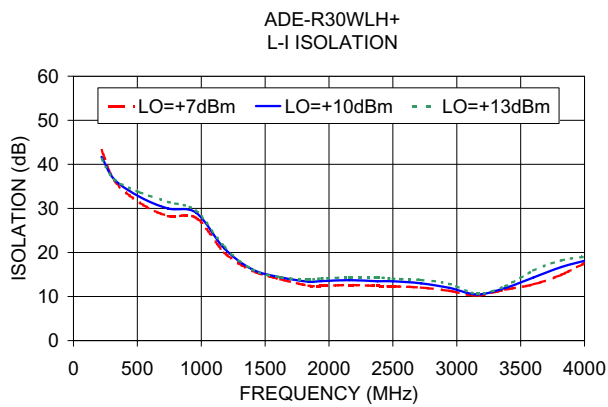
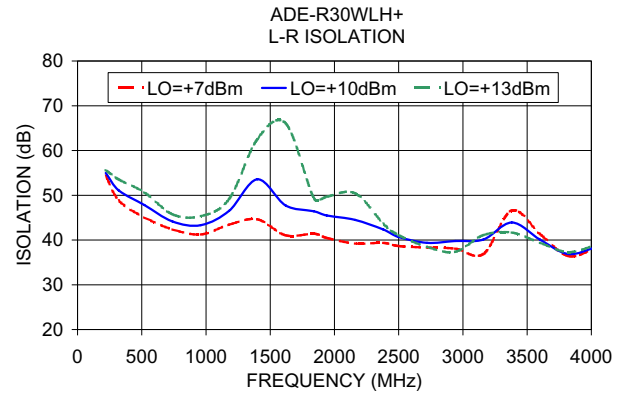
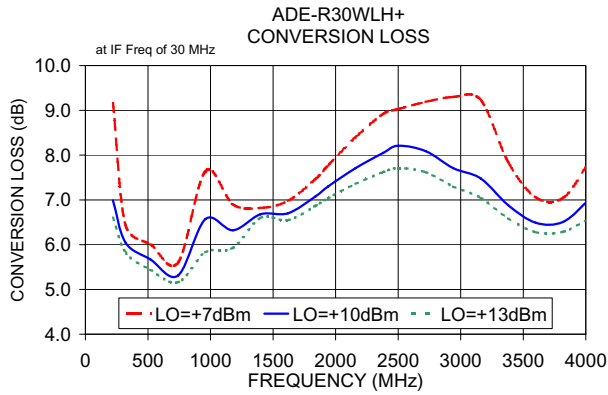
Frequency (MHz)	Conversion Loss (dB)		Isolation L-R (dB)		Isolation L-I (dB)		VSWR RF Port (:1)		VSWR LO Port (:1)	
	LO	LO	LO	LO	LO	LO	LO	LO	LO	LO
220.00	250.00	6.99	55.00	41.71	3.67	9.48				
320.00	350.00	6.05	51.10	36.54	2.29	5.16				
520.00	550.00	5.67	47.81	32.60	1.43	3.60				
740.00	770.00	5.31	44.14	29.98	1.23	2.87				
960.00	990.00	6.57	43.31	29.04	2.63	2.35				
1180.00	1210.00	6.32	46.52	20.93	3.15	1.73				
1400.00	1430.00	6.68	53.58	16.16	3.11	1.59				
1620.00	1650.00	6.70	47.73	14.37	2.49	1.82				
1840.00	1870.00	7.08	46.42	13.36	3.62	2.10				
1940.00	1970.00	7.30	45.49	13.49	3.93	2.30				
2160.00	2190.00	7.71	44.51	13.71	4.40	2.59				
2380.00	2410.00	8.05	42.37	13.46	4.30	2.94				
2500.00	2530.00	8.21	40.68	13.46	4.37	3.18				
2720.00	2750.00	8.09	39.37	13.00	4.54	3.34				
2940.00	2970.00	7.71	39.78	11.97	3.87	3.54				
3160.00	3190.00	7.48	40.13	10.49	3.37	3.25				
3380.00	3410.00	6.88	43.93	11.96	2.82	2.79				
3600.00	3630.00	6.49	40.09	14.32	2.25	3.25				
3820.00	3850.00	6.51	36.86	16.70	1.84	4.37				
4040.00	4070.00	7.04	38.40	18.41	1.65	5.79				

### 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.  
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