

# Surface Mount High Reliability Mixer

## ADE-R20LH+

Level 10 (LO Power +10 dBm) 1500 to 2800 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	4
IF	3
GROUND	1,2,5

### Features

- hermetically sealed ceramic quad
- low conversion loss, 6.0 dB typ.
- excellent isolation, 32 dB typ.
- low profile package
- aqueous washable
- protected by US Patent 6,133,525

### Applications

- digital cellular
- digital cordless phone
- PCN

**+RoHS Compliant**

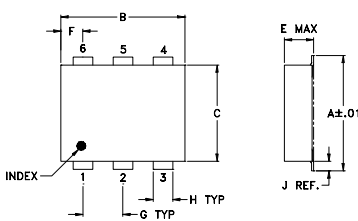
The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications



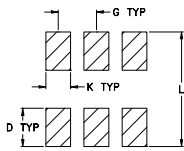
Available Tape and Reel at no extra cost

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

### Outline Drawing



### PCB Land Pattern

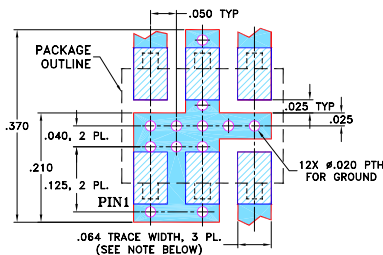


Suggested Layout,  
Tolerance to be within ±0.02

### Outline Dimensions (inch)

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-02 Suggested PCB Layout (PL-051)



- 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

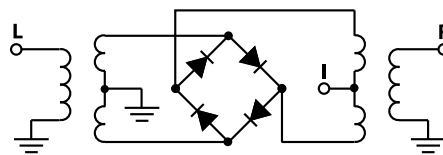
FREQUENCY (MHz)	CONVERSION LOSS (dB)		LO-RF ISOLATION (dB)		LO-IF ISOLATION (dB)		IP3 at center band (dBm)	
	LO/RF	IF	$\bar{X}$	$\sigma$	Max.	Typ. Min.		Typ. Min.
1500-2800	DC-500		6.0	0.10	8.2	32 23	26 15	14

1 dB COMP.: +5 dBm typ.

### 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	RF	LO	RF	LO	RF	LO	RF	LO	RF
1500.00	1530.00	6.61	41.83	20.90	1.53	2.03				
1600.00	1630.00	6.19	39.95	23.30	1.41	1.98				
1640.00	1670.00	6.15	38.57	24.41	1.46	1.96				
1700.00	1730.00	6.08	37.75	26.10	1.59	1.95				
1740.00	1770.00	6.15	37.07	27.16	1.68	1.94				
1800.00	1830.00	6.04	35.24	28.93	1.84	1.91				
1840.00	1870.00	6.09	34.13	30.08	1.88	1.92				
1900.00	1930.00	5.93	33.20	31.70	1.94	1.92				
1940.00	1970.00	5.99	32.91	32.55	1.94	1.94				
2000.00	2030.00	5.82	32.49	33.88	1.96	1.95				
2100.00	2130.00	5.73	31.75	36.38	1.93	2.00				
2140.00	2170.00	5.80	31.51	37.37	1.90	2.02				
2200.00	2230.00	5.69	31.12	38.41	1.84	2.03				
2300.00	2330.00	5.62	30.71	40.16	1.67	2.04				
2340.00	2370.00	5.56	30.69	40.86	1.59	2.07				
2400.00	2430.00	5.53	30.75	41.13	1.46	2.10				
2500.00	2530.00	5.48	30.46	41.96	1.31	2.15				
2540.00	2570.00	5.43	30.67	42.21	1.28	2.18				
2600.00	2630.00	5.52	30.87	42.39	1.24	2.19				
2800.00	2830.00	5.83	31.30	42.39	1.36	2.08				

### Electrical Schematic



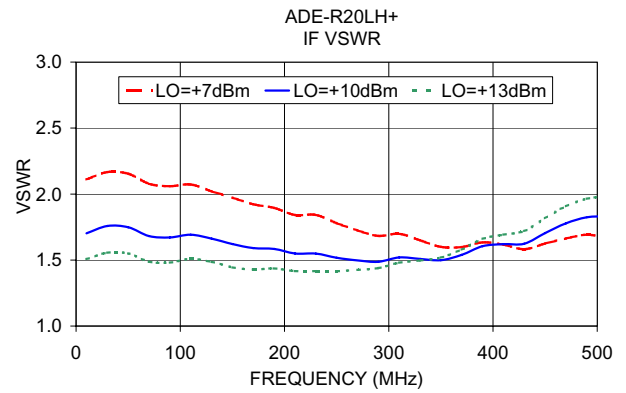
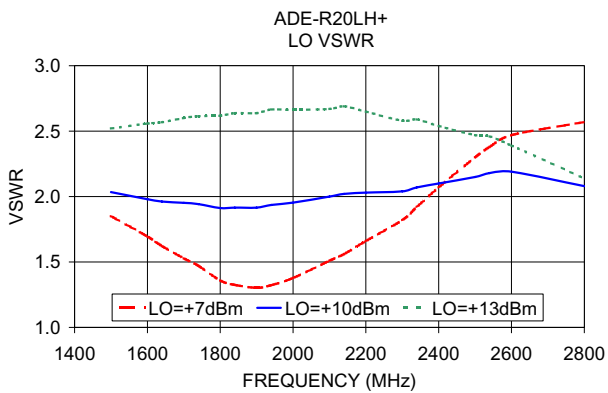
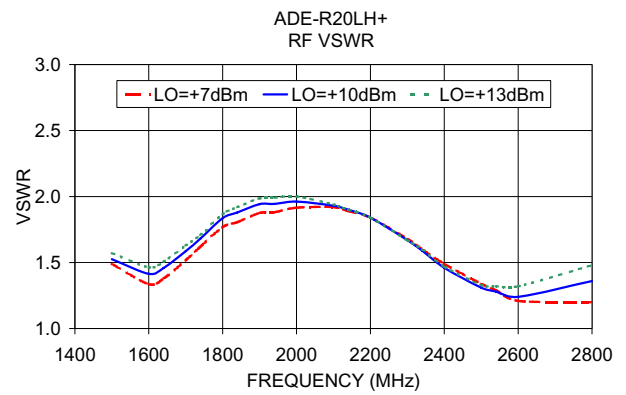
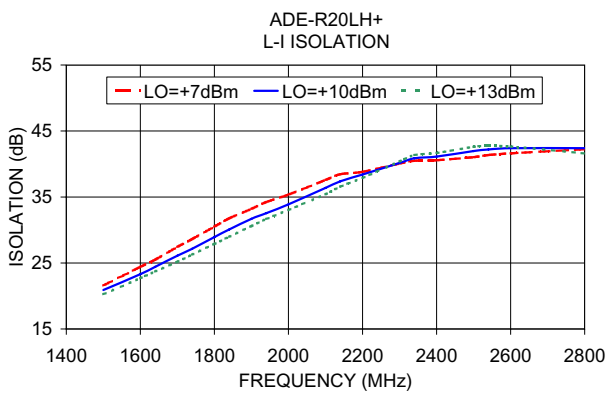
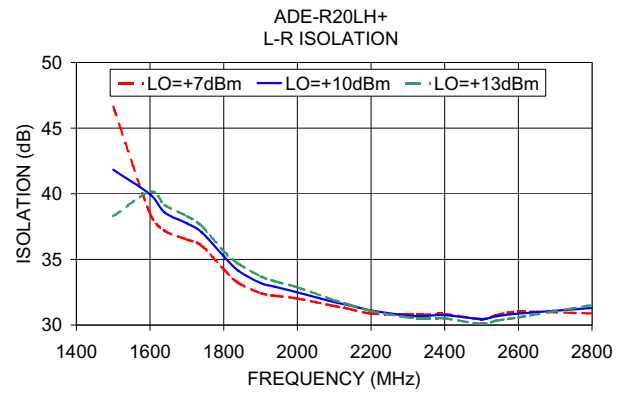
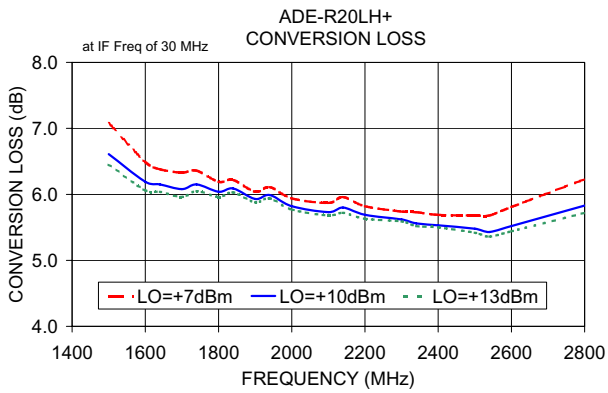
### Notes

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