

# High Reliability Mixer

## ADE-R1LH+

Level 10 (LO Power +10 dBm) 1 to 500 MHz



### Maximum Ratings

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

### Pin Connections

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

### Features

- hermetically sealed ceramic quad
- low conversion loss, 5.2 dB typ.
- excellent L-R isolation, 60 dB typ. and L-I isolation, 45 dB typ.
- good IP3, 15 dBm typ.
- low profile package
- aqueous washable
- protected by US Patent 6,133,525

### Applications

- VHF/UHF receivers

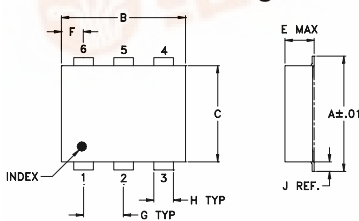
CASE STYLE: CD636

PRICE: \$3.39 ea. QTY. (10-49)

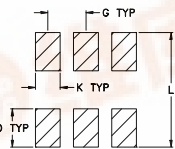
**+ RoHS compliant in accordance with EU Directive (2002/95/EC)**

The +Suffix has been added in order to identify RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications.

### Outline Drawing



### PCB Land Pattern

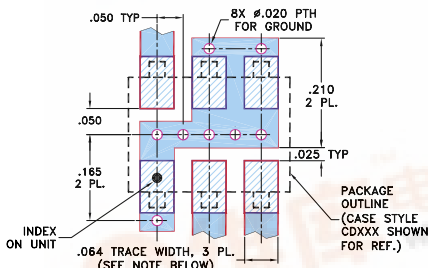


Suggested Layout, Tolerance to be within ±.002

### Outline Dimensions (inch/mm)

A	B	C	D	E	F	G
.272	.310	.220	.100	.162	.055	.100
6.91	7.87	5.59	2.54	4.11	1.40	2.54
H	J	K	L	wt		
.030	.026	.065	.300	grams		
0.76	0.66	1.65	7.62	0.25		

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)						
		L	M	U	L	M	U							
1-500	DC-500	70	55	60	45	47	32	65	45	45	28	34	20	15

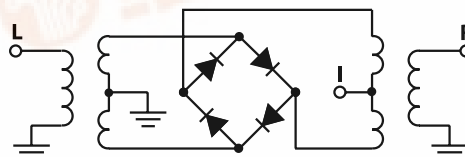
1 dB COMP.: +5 dBm typ.

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 [ $2f_L$  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)
	LO	+10dBm	LO +10dBm	LO +10dBm	LO +10dBm	LO +10dBm
1.00	31.00	5.74	67.64	54.38	1.43	2.25
2.80	32.80	5.29	67.42	53.90	1.24	2.25
6.40	36.40	5.07	66.61	53.33	1.19	2.25
8.20	38.20	5.01	65.84	52.86	1.18	2.25
10.00	40.00	4.86	65.97	52.56	1.18	2.25
12.00	42.00	4.98	66.11	52.18	1.18	2.24
37.00	67.00	5.01	63.03	47.76	1.15	2.24
62.00	92.00	5.02	61.12	44.77	1.14	2.22
87.00	117.00	5.05	59.81	42.86	1.12	2.21
112.00	142.00	5.07	58.70	41.66	1.11	2.26
120.00	150.00	5.08	58.36	41.21	1.11	2.27
210.00	180.00	5.16	58.09	40.10	1.08	2.26
250.00	220.00	5.20	55.11	38.90	1.06	2.31
300.00	270.00	5.30	54.56	38.23	1.05	2.34
350.00	320.00	5.47	49.49	36.88	1.03	2.47
400.00	370.00	5.58	45.89	35.18	1.05	2.41
425.00	395.00	5.56	44.38	33.02	1.09	2.43
450.00	420.00	5.61	43.62	30.95	1.11	2.56
475.00	445.00	5.63	43.19	29.44	1.09	2.52
500.00	470.00	5.73	42.63	28.27	1.06	2.53

### Electrical Schematic



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RF/IF MICROWAVE COMPONENTS

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070516  
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