

# Surface Mount High Reliability Mixer

## ADE-R1LH+

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



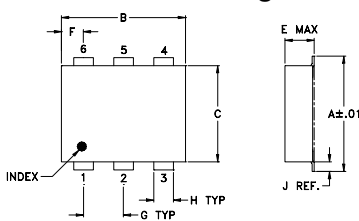
### Maximum Ratings

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

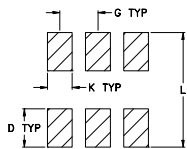
### Pin Connections

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

### Outline Drawing



### PCB Land Pattern

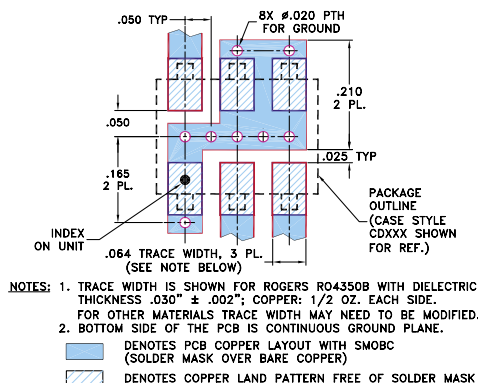


Suggested Layout,  
Tolerance to be within ±.002

### Outline Dimensions (inch/mm)

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

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



### 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

### 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	5.2	0.10	6.5	8.2	70	55	60	45	47	32	65	45	45	28	34	20	15

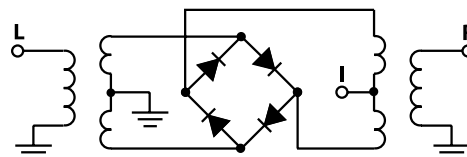
1 dB COMP.: +5 dBm typ.

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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