

# High Reliability Mixer

## ADEX-R10LH+

Level 10 (LO Power +10 dBm) 10 to 1000 MHz



### Maximum Ratings

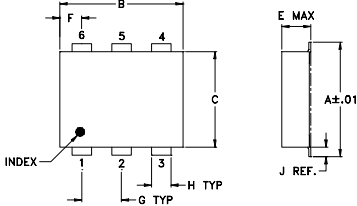
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power	50mW
IF Current	40mA

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

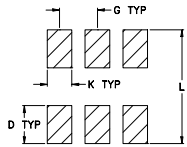
### Pin Connections

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

### Outline Drawing



### PCB Land Pattern

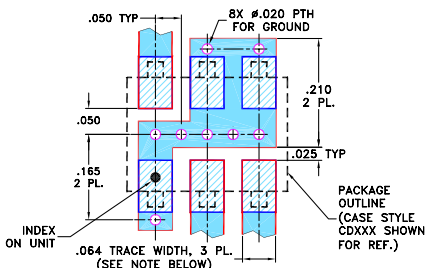


Suggested Layout,  
Tolerance to be within ±.002

### 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-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

### Features

- hermetically sealed ceramic quad
- low conversion loss, 7.0 dB typ.
- excellent L-R isolation, 60 dB typ.
- good VSWR, 1.8:1 typ. for LO, 1.5:1 typ. for RF, 1.5:1 typ. for IF
- good performance to 1500 MHz
- low profile package
- aqueous washable
- protected by US Patent 6,133,525 and 6,947,717

### Applications

- cellular
- instrumentation
- VHF/UHF receivers

CASE STYLE: CD542  
PRICE: \$3.35 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.

### Electrical Specifications

FREQUENCY (MHz)		CONVERSION LOSS (dB)				LO-RF ISOLATION (dB)			LO-IF ISOLATION (dB)			IP3 at center band (dBm)						
LO/RF	IF	Mid-Band		Total Range	L	M	U	L	M	U								
$f_L$ - $f_U$		$\bar{X}$	$\sigma$	Max.	Max.	Typ. Min.	Typ. Min.	Typ. Min.	Typ. Min.	Typ. Min.	Typ. Min.	Typ.						
10-1000	DC-800	7.0	0.10	7.8 <sup>1</sup>	8.3 <sup>1</sup>	70	55	60	43	47	37	45	32	35	25	26	17	16

1 dB COMP.: +5 dBm typ.

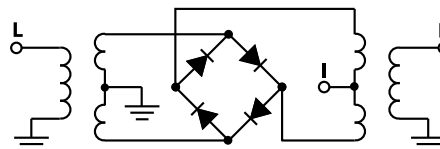
<sup>1</sup>Conversion loss increases 0.5 when IF is above 150 MHz

L = low range [ $f_L$  to  $10f_L$ ] M = mid range [ $10f_L$  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)
RF	LO	LO +10dBm	LO +10dBm	LO +10dBm	LO +10dBm	LO +10dBm
10.10	40.10	6.40	70.41	63.96	1.40	1.53
70.10	100.10	7.05	71.47	48.53	1.41	1.51
130.10	160.10	7.08	67.22	44.08	1.42	1.52
190.10	220.10	6.89	66.26	42.14	1.42	1.50
250.10	280.10	7.03	65.92	42.34	1.44	1.52
310.10	340.10	6.97	64.97	41.47	1.46	1.55
370.10	400.10	7.00	61.87	40.62	1.49	1.57
430.10	460.10	6.96	60.97	38.57	1.51	1.60
490.10	520.10	7.00	62.56	37.21	1.53	1.65
550.10	580.10	7.16	56.40	35.22	1.56	1.69
610.10	640.10	7.09	52.53	33.19	1.55	1.72
670.10	700.10	6.94	55.81	31.14	1.54	1.74
730.10	760.10	7.16	77.09	30.24	1.58	1.81
790.10	820.10	7.30	57.93	30.30	1.61	1.86
850.10	880.10	7.52	52.89	30.93	1.64	1.89
910.10	940.10	7.81	50.96	30.99	1.65	1.92
970.10	1000.10	7.81	55.37	29.61	1.62	1.94
1030.10	1060.10	7.66	61.99	27.44	1.54	1.96
1090.10	1120.10	7.44	62.69	25.31	1.43	1.99
1150.10	1180.10	7.17	51.89	23.66	1.32	2.06

### Electrical Schematic



**Mini-Circuits**  
ISO 9001 ISO 14001 AS 9100 CERTIFIED

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