

# Surface Mount Frequency Mixer

Level 7 (LO Power +7 dBm) 200 to 1000 MHz

## ADE-4+ ADE-4



### Maximum Ratings

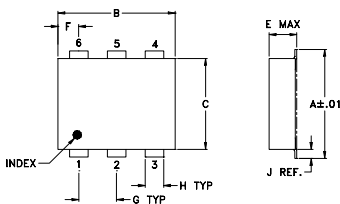
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power	50mW
IF Current	40mA

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

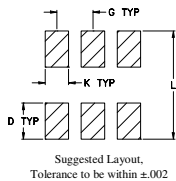
### Pin Connections

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

### Outline Drawing



### PCB Land Pattern



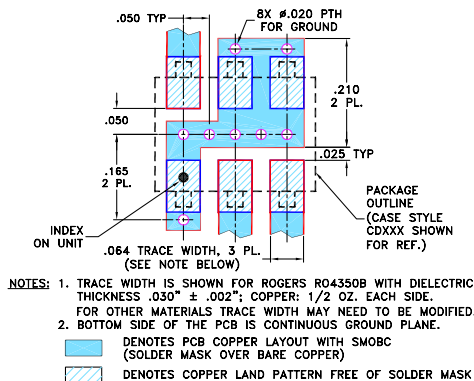
### Outline Dimensions (inch/mm)

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)



### Features

- low conversion loss, 6.8 dB typ.
- good L-R isolation, 53 dB typ.
- low profile package
- aqueous washable
- low cost
- protected by U.S. Patent 6,133,525

### Applications

- cellular
- VHF/UHF receivers

CASE STYLE: CD542  
PRICE: \$4.25 ea. QTY (20)

### +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"	20, 50, 100, 200, 500
13"	500, 1000

### Electrical Specifications

FREQUENCY (MHz)		CONVERSION LOSS (dB)			LO-RF ISOLATION (dB)			LO-IF ISOLATION (dB)			IP3 at center band (dBm)
LO/RF	IF	M	Total Range Max.	L	M	U	L	M	U	Typ.	
$f_c - f_u$		$\bar{X}$	$\sigma$	Typ. Min.	Typ. Min.	Typ. Min.	Typ. Min.	Typ. Min.	Typ. Min.		
200-1000	DC-800	6.8	0.10	8.5	60 45	53 40	45 30	45 30	40 22	35 20	15

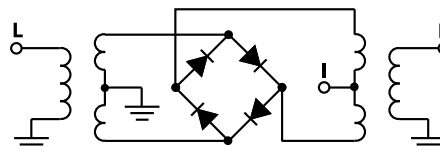
1 dB COMP.: +1 dBm typ.

L = 200-400 MHz M = 400-500 MHz U = 500-1000 MHz

### 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 +7dBm	LO +7dBm	LO +7dBm	LO +7dBm	LO +7dBm
200.00	230.00	7.14	60.34	44.99	1.41	2.56
250.00	280.00	6.82	59.00	43.67	1.38	2.28
300.00	330.00	6.87	57.00	43.34	1.39	2.20
350.00	380.00	7.02	59.50	42.50	1.40	2.10
375.00	405.00	6.89	59.01	42.17	1.40	2.10
400.00	430.00	6.97	59.17	41.33	1.39	2.17
450.00	480.00	6.72	56.50	40.17	1.37	2.04
475.00	505.00	6.82	56.67	39.67	1.36	2.10
500.00	530.00	6.85	57.32	39.17	1.37	2.10
550.00	580.00	6.93	56.67	38.50	1.39	2.10
600.00	630.00	7.03	55.83	37.84	1.39	2.10
650.00	680.00	6.90	54.33	37.00	1.34	2.10
675.00	705.00	6.94	53.34	36.67	1.34	2.13
700.00	730.00	6.90	52.84	36.17	1.34	2.07
750.00	780.00	6.96	51.50	35.33	1.32	2.20
800.00	830.00	7.00	49.83	34.50	1.28	2.10
850.00	880.00	6.83	48.00	32.99	1.24	2.28
900.00	930.00	6.70	47.00	31.66	1.22	2.20
950.00	980.00	6.81	45.83	30.83	1.18	2.41
1000.00	1030.00	6.82	44.33	30.33	1.11	2.46

### Electrical Schematic



**Mini-Circuits**  
ISO 9001 ISO 14001 AS 9100 CERTIFIED  
P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661 The Design Engineers Search Engine Provides ACTUAL Data Instantly at [minicircuits.com](http://minicircuits.com)  
IF/RF MICROWAVE COMPONENTS

For detailed performance specs & shopping online see web site

Notes: 1. Performance and quality attributes and conditions not expressly stated in this specification sheet are intended to be excluded and do not form a part of this specification sheet. 2. Electrical specifications and performance data contained herein are based on Mini-Circuit's applicable established test performance criteria and measurement instructions. 3. The parts covered by this specification sheet are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at [www.minicircuits.com/MCLStore/terms.jsp](http://www.minicircuits.com/MCLStore/terms.jsp).

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**Performance Charts**

