

# Surface Mount High Reliability Mixer

## ADE-R20+

Level 7 (LO Power +7 dBm) 1500 to 2800 MHz



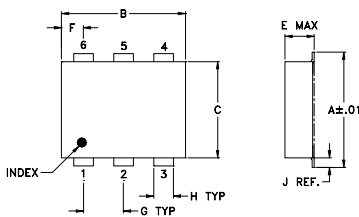
### Maximum Ratings

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

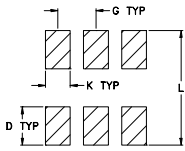
### Pin Connections

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

### Outline Drawing



### PCB Land Pattern



Suggested Layout,  
Tolerance to be within ±.002

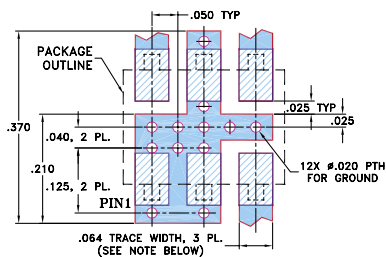
### Outline Dimensions (inch)

| 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-02 Suggested PCB Layout (PL-051)



- NOTES: 1. TRACE WIDTH IS SHOWN FOR ROGERS R04350B 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, 5.8 dB typ.
- excellent L-R isolation, 30 dB typ.
- low profile package
- aqueous washable
- protected by US Patent 6,133,525

### Applications

- digital cellular
- digital cordless phone
- PCN

CASE STYLE: CD542

PRICE: \$5.35 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

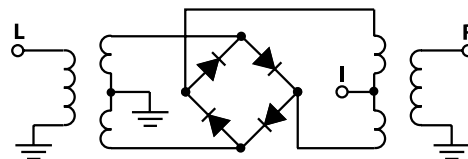
| FREQUENCY (MHz) | CONVERSION LOSS (dB) | LO-RF ISOLATION (dB) |      | LO-IF ISOLATION (dB) |      | IP3 at center band (dBm) |
|-----------------|----------------------|----------------------|------|----------------------|------|--------------------------|
|                 |                      | Typ.                 | Min. | Typ.                 | Min. |                          |
| 1500-2800       | 5.8                  | 30                   | 22   | 28                   | 15   | 12                       |

1 dB COMP.: +1 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) |
|-----------------|----------------------|--------------------|--------------------|-------------------|-------------------|
|                 |                      |                    |                    |                   |                   |
| 1460.00         | 6.21                 | 37.65              | 20.28              | 1.34              | 1.81              |
| 1560.00         | 5.95                 | 37.70              | 22.72              | 1.28              | 1.80              |
| 1660.00         | 5.94                 | 36.06              | 25.56              | 1.50              | 1.79              |
| 1740.00         | 5.91                 | 35.29              | 27.83              | 1.66              | 1.79              |
| 1840.00         | 5.80                 | 33.78              | 30.47              | 1.75              | 1.83              |
| 1920.00         | 5.79                 | 32.65              | 32.64              | 1.83              | 1.86              |
| 2020.00         | 5.79                 | 31.63              | 35.32              | 1.90              | 1.92              |
| 2100.00         | 5.81                 | 30.85              | 37.17              | 1.92              | 1.95              |
| 2200.00         | 5.78                 | 30.15              | 39.95              | 1.90              | 2.00              |
| 2280.00         | 5.80                 | 29.99              | 41.69              | 1.84              | 2.08              |
| 2380.00         | 5.74                 | 30.06              | 43.43              | 1.74              | 2.17              |
| 2460.00         | 5.72                 | 30.05              | 44.18              | 1.70              | 2.16              |
| 2560.00         | 5.75                 | 29.85              | 45.60              | 1.70              | 2.28              |
| 2640.00         | 5.90                 | 30.06              | 45.88              | 1.73              | 2.36              |
| 2740.00         | 6.08                 | 30.64              | 44.97              | 1.77              | 2.41              |
| 2820.00         | 6.35                 | 31.39              | 43.67              | 1.91              | 2.42              |

### Electrical Schematic



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