

# Surface Mount Frequency Mixer

## RMS-2H+ RMS-2H

Level 17 (LO Power +17 dBm) 5 to 1000 MHz



### Maximum Ratings

|                       |                |
|-----------------------|----------------|
| Operating Temperature | -40°C to 85°C  |
| Storage Temperature   | -55°C to 100°C |
| RF Power              | 200mW          |
| IF Current            | 40mA           |

### Pin Connections

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

### Features

- excellent L-R isolation, 40 dB typ.
- conversion loss, 6.98 dB typ.
- small size, 0.25"x0.31"x0.2"

### Applications

- UHF
- cellular/ISM/GSM

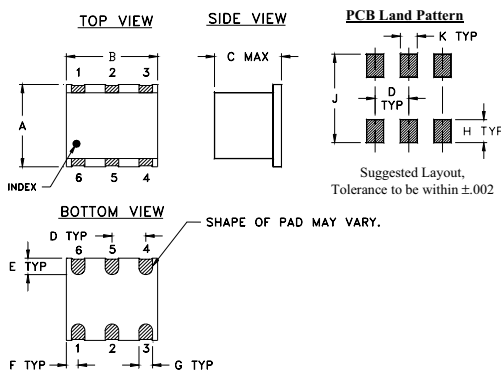
CASE STYLE: TT240

PRICE: \$11.95 ea. QTY (1-9)

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

The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications.

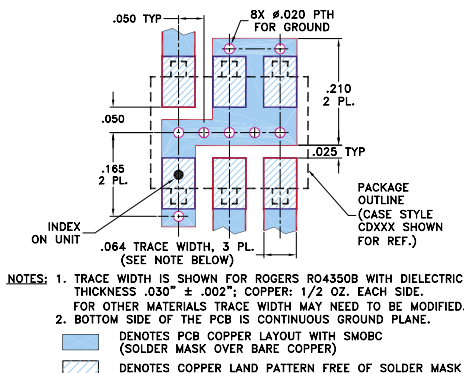
### Outline Drawing



### Outline Dimensions (inch/mm)

|      |      |      |      |      |       |
|------|------|------|------|------|-------|
| A    | B    | C    | D    | E    | F     |
| .250 | .31  | .20  | .100 | .050 | .055  |
| 6.35 | 7.87 | 5.08 | 2.54 | 1.27 | 1.40  |
| G    | H    | J    | K    |      | wt    |
| .040 | .070 | .270 | .050 |      | grams |
| 1.02 | 1.78 | 6.86 | 1.27 |      | 0.50  |

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



### 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    |      |                          |
| f <sub>L</sub> -f <sub>U</sub> | $\bar{X}$ σ Max.     | Typ.                 | Min. | Typ. | Min. | Typ. | Min. | Typ.                 | Min. | Typ. | Min. | Typ. | Min. | Typ.                     |
| 5-1000 DC-900                  | 6.98 .054 8.5 9.3    | 55                   | 40   | 39   | 22   | 33   | 20   | 52                   | 30   | 45   | 22   | 30   | 17   | 23                       |

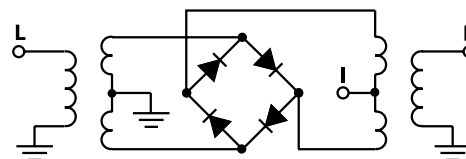
1 dB COMP.: +14 dBm typ.  
For phase detection, DC output positive with in-phase RF & LO.

L = low range [f<sub>L</sub> to 10 f<sub>L</sub>] M = mid range [10 f<sub>L</sub> to f<sub>U</sub>/2] U = upper range [f<sub>U</sub>/2 to f<sub>U</sub>]

### 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 +17dBm            | LO +17dBm          | LO +17dBm          | LO +17dBm         | LO +17dBm         |
| 5.00            | 35.00  | 7.85                 | 66.33              | 72.89              | 1.54              | 1.95              |
| 10.00           | 40.00  | 7.64                 | 63.63              | 68.70              | 1.49              | 1.85              |
| 20.00           | 50.00  | 7.69                 | 58.93              | 63.79              | 1.47              | 1.79              |
| 50.00           | 80.00  | 7.55                 | 52.00              | 56.89              | 1.45              | 1.91              |
| 95.45           | 65.45  | 7.54                 | 46.41              | 50.84              | 1.44              | 1.79              |
| 100.00          | 70.00  | 7.53                 | 46.04              | 50.67              | 1.43              | 1.79              |
| 185.91          | 155.91 | 7.51                 | 40.70              | 46.79              | 1.43              | 1.69              |
| 200.00          | 170.00 | 7.37                 | 40.02              | 46.99              | 1.42              | 1.68              |
| 276.36          | 246.36 | 7.35                 | 37.35              | 44.46              | 1.40              | 1.56              |
| 366.82          | 336.82 | 7.22                 | 35.28              | 42.69              | 1.34              | 1.47              |
| 457.27          | 427.27 | 7.11                 | 33.66              | 39.45              | 1.25              | 1.36              |
| 487.42          | 457.42 | 7.17                 | 33.17              | 37.61              | 1.24              | 1.34              |
| 500.00          | 470.00 | 7.07                 | 33.04              | 37.36              | 1.21              | 1.34              |
| 547.73          | 517.73 | 7.11                 | 32.95              | 35.68              | 1.11              | 1.28              |
| 638.18          | 608.18 | 7.46                 | 32.78              | 31.60              | 1.06              | 1.29              |
| 728.64          | 698.64 | 7.45                 | 31.90              | 30.61              | 1.27              | 1.46              |
| 819.09          | 789.09 | 7.76                 | 30.74              | 28.78              | 1.54              | 1.81              |
| 909.55          | 879.55 | 8.28                 | 29.67              | 27.10              | 1.90              | 2.21              |
| 969.85          | 939.85 | 8.54                 | 29.46              | 25.48              | 2.06              | 2.34              |
| 1000.00         | 970.00 | 8.75                 | 29.31              | 24.84              | 2.10              | 2.40              |

### Electrical Schematic



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RF/IF MICROWAVE COMPONENTS

REV. B  
M102713  
RMS-2H  
061228  
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## Performance Charts

