*Surface Mount*

# Frequency Mixer

## RMS-2U+
## RMS-2U

Level 7 (LO Power +7 dBm) 10 to 1000 MHz

CASE STYLE: TT240
PRICE: $11.45 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.*

### 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 |

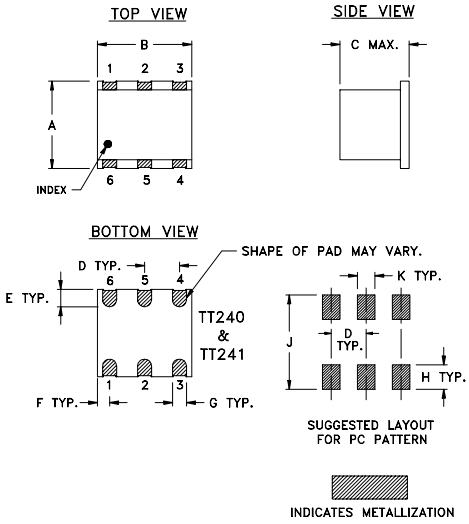
### Features

- excellent L-R isolation, 40 dB typ.
- conversion loss, 6.79 dB typ.
- small size, 0.25”x0.31”x0.2”

### Applications

- cellular
- ISM/GSM

### Outline Drawing

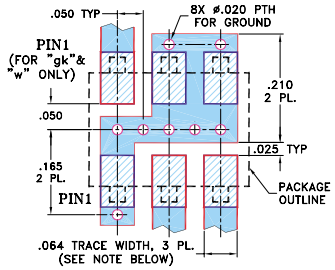



### Outline Dimensions ( inch / mm )

| 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)***
***“w” loc. of pin 1 applies.***




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

### Electrical Specifications

| FREQUENCY (MHz) | | CONVERSION LOSS (dB) | | | | LO-RF ISOLATION (dB) | | | | | | LO-IF ISOLATION (dB) | | | | | | IP3 at center band (dBm) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LO/RF | IF | | | | | L | | M | | U | | L | | M | | U | | |
| $f_L$-$f_U$ | | $\overline{X}$ | σ | Max. | Total Range Max. | Typ. | Min. | Typ. | Min. | Typ. | Min. | Typ. | Min. | Typ. | Min. | Typ. | Min. | Typ. |
| 10-1000 | 10-750 | 6.79 | .16 | 8.0 | 9.5 | 55 | 40 | 40 | 30 | 30 | 25 | 55 | 30 | 35 | 25 | 30 | 22 | 10 |

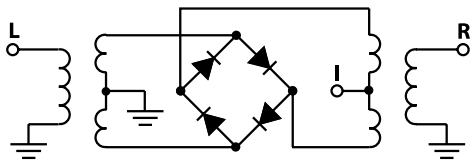
1 dB COMP.: +1 dBm typ.
For phase detection, DC output positive with in-phase RF & LO.

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 [2$f_L$ 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 +7dBm | LO +7dBm | LO +7dBm | LO +7dBm | LO +7dBm |
| 10.00 | 40.00 | 5.69 | 55.08 | 57.44 | 1.73 | 2.45 |
| 20.00 | 50.00 | 5.78 | 53.83 | 52.73 | 1.63 | 2.59 |
| 39.12 | 69.12 | 5.90 | 51.99 | 47.22 | 1.61 | 2.49 |
| 50.00 | 80.00 | 5.88 | 51.27 | 45.11 | 1.63 | 2.47 |
| 68.24 | 98.24 | 5.83 | 49.27 | 42.51 | 1.67 | 2.44 |
| 100.00 | 70.00 | 5.82 | 46.22 | 39.55 | 1.72 | 2.43 |
| 126.47 | 96.47 | 5.90 | 44.61 | 37.77 | 1.81 | 2.44 |
| 155.59 | 125.59 | 6.04 | 43.33 | 35.95 | 1.87 | 2.40 |
| 230.00 | 170.00 | 6.28 | 42.36 | 34.23 | 1.89 | 2.35 |
| 242.94 | 212.94 | 6.39 | 42.52 | 32.47 | 1.97 | 2.33 |
| 301.18 | 271.18 | 6.60 | 42.44 | 31.27 | 2.12 | 2.29 |
| 330.29 | 300.29 | 6.58 | 42.50 | 30.71 | 2.25 | 2.25 |
| 388.53 | 358.53 | 6.70 | 42.62 | 29.23 | 2.31 | 2.23 |
| 446.77 | 416.77 | 6.58 | 38.36 | 28.68 | 2.47 | 2.21 |
| 500.00 | 470.00 | 6.61 | 35.52 | 27.43 | 2.20 | 2.29 |
| 592.35 | 562.35 | 6.89 | 34.35 | 28.33 | 2.43 | 2.28 |
| 708.82 | 678.82 | 7.34 | 34.65 | 29.18 | 2.57 | 2.29 |
| 796.18 | 766.18 | 7.61 | 30.87 | 28.03 | 2.83 | 2.31 |
| 912.65 | 882.65 | 7.98 | 29.10 | 26.37 | 3.03 | 2.30 |
| 1000.00 | 970.00 | 8.28 | 28.18 | 24.07 | 3.42 | 2.32 |

### Electrical Schematic



# Performance Charts