*Surface Mount*

# Frequency Mixer

## RMS-25MH+

Level 13 (LO Power +13 dBm) 5 to 2500 MHz

CASE STYLE: TT240

### Maximum Ratings

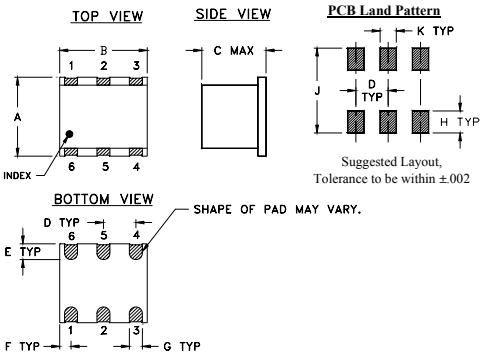
| | |
|---|---|
| Operating Temperature | -40°C to 85°C |
| Storage Temperature | -55°C to 100°C |
| RF Power | 200mW |
| IF Current | 40mA |

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

### Pin Connections

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

### Outline Drawing

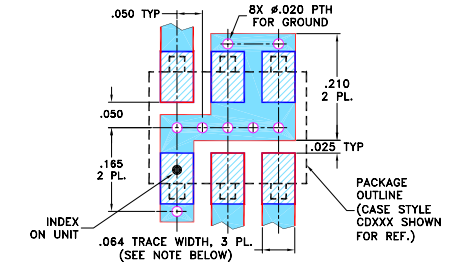



### Outline Dimensions ( inch / mm )

| 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)***




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

- excellent L-R isolation, 32 dB typ.
- conversion loss, 7.0 dB typ.
- small size, 0.25"x0.31"x0.2"

### Applications

- cellular
- satellite distribution
- GPS

***+RoHS Compliant***
*The +Suffix identifies 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 | | | | | 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. |
| 5-2500 | 5-1500 | 7.0 | .20 | 8.5 | 9.8 | 54 | 28 | 32 | 23 | 32 | 20 | 34 | 23 | 32 | 25 | 28 | 17 | 17 |

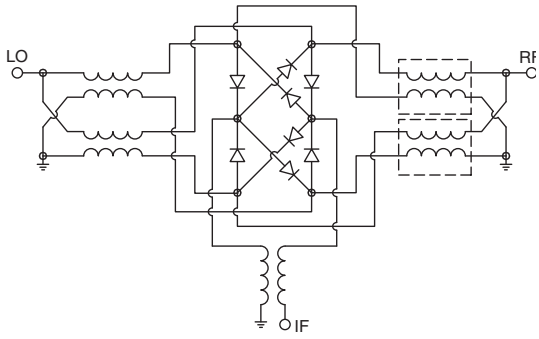
1 dB COMP.: +9 dBm typ.

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 +13 dBm | LO +13 dBm | LO +13 dBm | LO +13 dBm | LO +13 dBm |
| 5.00 | 35.00 | 6.60 | 43.66 | 31.16 | 1.43 | 2.14 |
| 10.10 | 40.10 | 6.47 | 48.02 | 33.66 | 1.42 | 2.07 |
| 20.18 | 50.18 | 6.42 | 53.20 | 34.80 | 1.42 | 2.09 |
| 33.51 | 63.51 | 6.47 | 56.82 | 34.60 | 1.42 | 2.09 |
| 49.03 | 79.03 | 6.46 | 59.20 | 34.63 | 1.42 | 2.08 |
| 81.42 | 111.42 | 6.50 | 57.10 | 34.59 | 1.42 | 2.06 |
| 135.23 | 165.23 | 6.58 | 52.43 | 34.78 | 1.45 | 2.08 |
| 224.60 | 194.60 | 6.60 | 46.08 | 35.72 | 1.52 | 2.08 |
| 373.01 | 343.01 | 6.77 | 40.43 | 37.11 | 1.71 | 1.95 |
| 480.71 | 450.71 | 6.88 | 38.16 | 36.46 | 1.86 | 1.92 |
| 545.72 | 515.72 | 6.82 | 37.54 | 35.91 | 1.95 | 1.80 |
| 798.38 | 768.38 | 6.92 | 36.87 | 32.89 | 2.23 | 1.71 |
| 906.34 | 876.34 | 6.92 | 37.27 | 31.38 | 2.32 | 1.62 |
| 1168.03 | 1138.03 | 7.19 | 36.90 | 30.53 | 2.35 | 1.61 |
| 1250.00 | 1220.00 | 7.10 | 38.52 | 31.35 | 2.37 | 1.62 |
| 1505.28 | 1475.28 | 6.78 | 39.76 | 30.96 | 2.27 | 1.65 |
| 1800.00 | 1770.00 | 6.85 | 31.84 | 27.67 | 2.24 | 1.57 |
| 2000.00 | 1970.00 | 7.07 | 28.62 | 28.09 | 2.19 | 1.62 |
| 2200.00 | 2170.00 | 7.09 | 25.62 | 28.13 | 2.18 | 1.77 |
| 2500.00 | 2470.00 | 7.52 | 22.96 | 26.44 | 1.95 | 1.99 |

### Electrical Schematic




Notes
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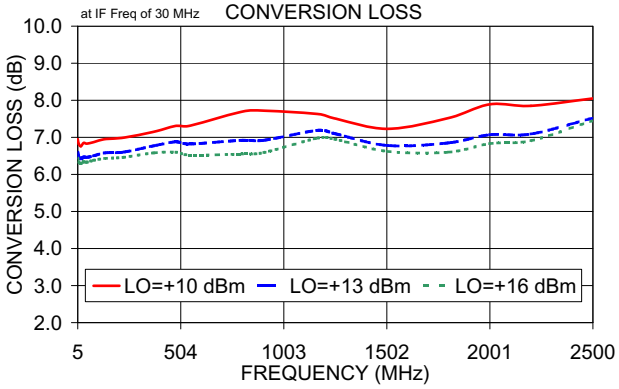
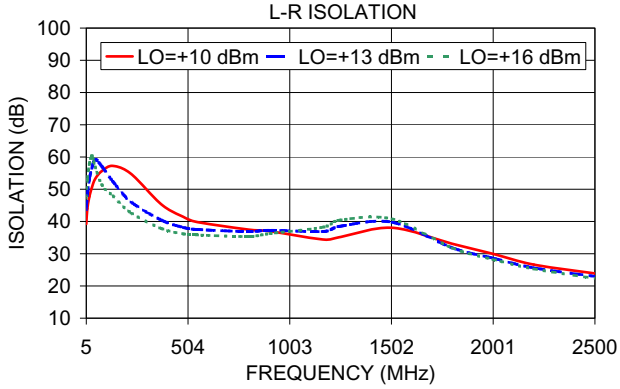
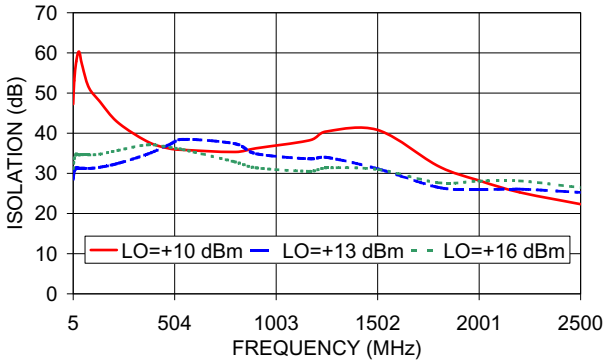
RMS-25MH+
at IF Freq of 30 MHz CONVERSION LOSS



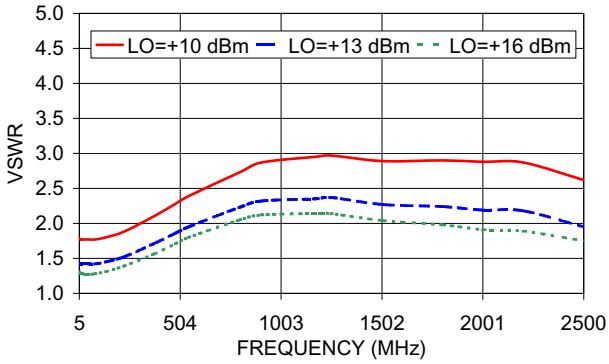

RMS-25MH+
L-R ISOLATION



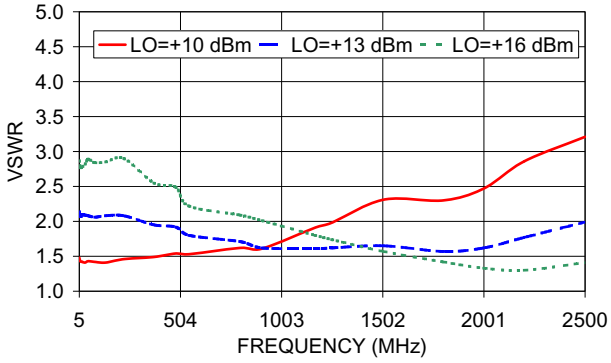

RMS-25MH+
L-I ISOLATION



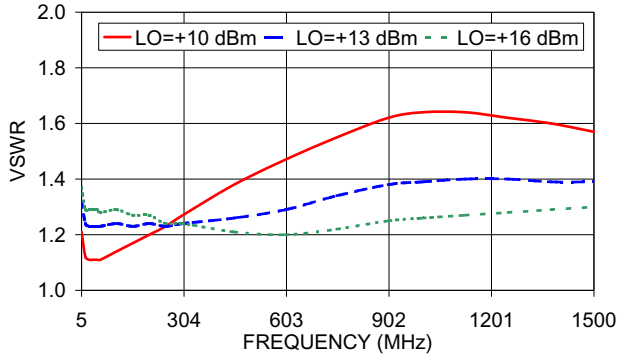

RMS-25MH+
RF VSWR




RMS-25MH+
LO VSWR




RMS-25MH+
IF VSWR

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