

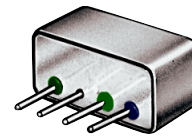
# Frequency Mixer

TUF-1

Level 7 (LO Power +7dBm) 2 to 600 MHz

## Features

- low conversion loss, 5.85 dB typ.
- non-hermetic, rugged welded construction
- excellent isolation, 42 dB typ. L-R, 47 dB typ. L-I



CASE STYLE: B02  
PRICE: \$5.25 ea. QTY (1-9)

## Applications

- VHF/UHF
- defense & federal communications

## Mixer Electrical Specifications

| MODEL NO. | FREQUENCY (MHz)                          |        | CONVERSION LOSS (dB) |     |                        |           | LO-RF ISOLATION (dB) |           |           |           |           |           | LO-IF ISOLATION (dB) |           |           |           |           |    |
|-----------|------------------------------------------|--------|----------------------|-----|------------------------|-----------|----------------------|-----------|-----------|-----------|-----------|-----------|----------------------|-----------|-----------|-----------|-----------|----|
|           |                                          |        |                      |     |                        |           |                      |           |           |           |           |           |                      |           |           |           |           |    |
|           | LO/RF<br>f <sub>L</sub> - f <sub>U</sub> | IF     | Mid-Band<br>x̄<br>σ  |     | Total<br>Range<br>Max. | L<br>Typ. | M<br>Typ.            | U<br>Typ. | L<br>Min. | M<br>Min. | U<br>Min. | L<br>Typ. | M<br>Typ.            | U<br>Typ. | L<br>Min. | M<br>Min. | U<br>Min. |    |
| TUF-1     | 2-600                                    | DC-600 | 5.85                 | .04 | 7.0                    | 8.0       | 60                   | 50        | 42        | 30        | 37        | 25        | 60                   | 45        | 47        | 30        | 36        | 22 |

1 dB COMP.: +1 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 [ $2f_L$  to  $f_U/2$ ]

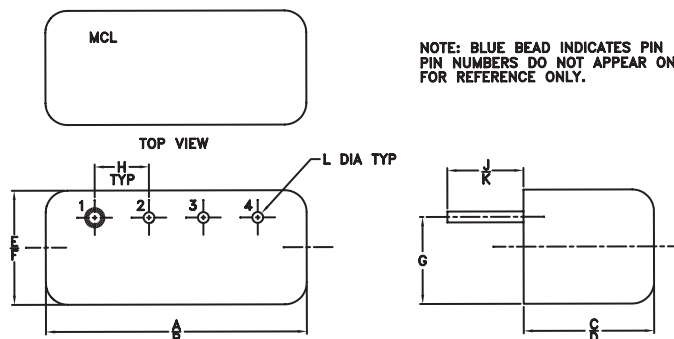
## Pin Connections

|             |   |
|-------------|---|
| PORT        | Z |
| LO          | 4 |
| RF          | 1 |
| IF          | 2 |
| GROUND EXT. | 3 |
| CASE GROUND | 3 |

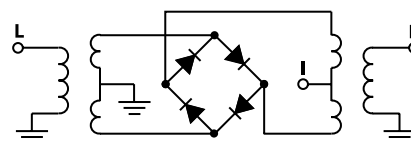
## Maximum Ratings

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

## Outline Drawing



## electrical schematic



## Outline Dimensions (inch)

| A     | B     | C    | D    | E    | F    | G    | H    | J    | K    | L    | wt.   |
|-------|-------|------|------|------|------|------|------|------|------|------|-------|
| .480  | .500  | .240 | .255 | .210 | .230 | .16  | .100 | .14  | .20  | .020 | grams |
| 12.19 | 12.70 | 6.10 | 6.48 | 5.33 | 5.84 | 4.06 | 2.54 | 3.56 | 5.08 | .51  | 1.9   |

## Typical Performance Data

| Frequency |           | Conversion Loss<br>(dB) | Isolation L-R<br>(dB) | Isolation L-I<br>(dB) | VSWR RF port<br>(:1) | VSWR LO port<br>(:1) |
|-----------|-----------|-------------------------|-----------------------|-----------------------|----------------------|----------------------|
| RF<br>MHz | LO<br>MHz | LO<br>+7dBm             | LO<br>+7dBm           | LO<br>+7dBm           | LO<br>+7dBm          | LO<br>+7dBm          |
| 2.00      | 32.00     | 6.81                    | 81.85                 | 72.15                 | 1.56                 | 2.71                 |
| 4.00      | 34.00     | 6.40                    | 76.35                 | 68.25                 | 1.31                 | 2.64                 |
| 5.00      | 35.00     | 6.34                    | 74.35                 | 66.65                 | 1.25                 | 2.62                 |
| 10.00     | 40.00     | 6.25                    | 69.58                 | 62.18                 | 1.15                 | 2.47                 |
| 20.00     | 50.00     | 6.21                    | 64.25                 | 57.65                 | 1.11                 | 2.51                 |
| 50.00     | 80.00     | 6.13                    | 57.73                 | 50.60                 | 1.10                 | 2.46                 |
| 81.73     | 51.73     | 6.16                    | 53.89                 | 46.89                 | 1.13                 | 2.41                 |
| 100.00    | 70.00     | 6.18                    | 52.31                 | 45.35                 | 1.14                 | 2.37                 |
| 161.47    | 131.47    | 6.08                    | 49.28                 | 42.03                 | 1.20                 | 2.31                 |
| 200.00    | 170.00    | 6.03                    | 47.46                 | 40.24                 | 1.27                 | 2.29                 |
| 241.20    | 211.20    | 6.04                    | 46.41                 | 38.76                 | 1.33                 | 2.26                 |
| 281.07    | 251.07    | 6.04                    | 45.16                 | 37.18                 | 1.38                 | 2.28                 |
| 300.00    | 270.00    | 6.09                    | 44.55                 | 36.84                 | 1.42                 | 2.30                 |
| 320.93    | 290.93    | 6.08                    | 44.04                 | 35.94                 | 1.50                 | 2.31                 |
| 400.00    | 370.67    | 5.99                    | 42.93                 | 33.45                 | 1.58                 | 2.32                 |
| 480.40    | 450.40    | 6.06                    | 40.46                 | 30.91                 | 1.66                 | 2.33                 |
| 500.00    | 470.00    | 6.11                    | 40.16                 | 30.63                 | 1.71                 | 2.33                 |
| 560.13    | 530.13    | 6.15                    | 39.99                 | 29.30                 | 1.77                 | 2.35                 |
| 580.07    | 550.07    | 6.19                    | 40.02                 | 29.24                 | 1.86                 | 2.36                 |
| 600.00    | 570.00    | 6.26                    | 39.76                 | 28.69                 | 1.88                 | 2.38                 |

## Performance Charts

