

## Frequency Mixer

## ADE-ED14942/1A

Level 13 (LO Power +13 dBm)

### Important Note

This model has been designed, built and tested in our engineering department. Performance data represents model capability.

At present it is a non-catalog model. On request, we can supply a final specification sheet, part number and price/delivery information.



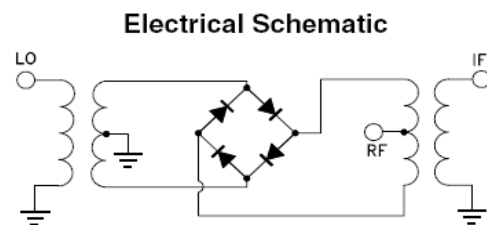
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**CASE STYLE : CD541**

| ELECTRICAL SPECIFICATIONS 50Ω @ +25°C |                    |      |      |      |       |
|---------------------------------------|--------------------|------|------|------|-------|
| Parameter                             |                    | Min. | Typ. | Max. | Units |
| <b>Frequency</b>                      | LO (fL to fu)      | 20   |      | 750  | MHz   |
|                                       | RF (fL to fu)      | 20   |      | 780  | MHz   |
|                                       | IF                 | DC   |      | 250  | MHz   |
| <b>Conversion Loss</b>                | <b>Total Range</b> |      | 6.6  |      | dB    |
| <b>LO-RF Isolation</b>                |                    |      | 42   |      | dB    |
| <b>LO-IF Isolation</b>                |                    |      | 40   |      | dB    |
| <b>Input IP3</b>                      |                    |      | +26  |      | dBm   |
| <b>1 dB Compression</b>               |                    |      | +9   |      | dBm   |

| MAXIMUM RATINGS              |                 |
|------------------------------|-----------------|
| <b>Operating Temperature</b> | -40°C to +85°C  |
| <b>Storage Temperature</b>   | -55°C to +100°C |

| PIN CONNECTIONS |       |
|-----------------|-------|
| <b>LO</b>       | 6     |
| <b>RF</b>       | 4     |
| <b>IF</b>       | 3     |
| <b>GROUND</b>   | 1,2,5 |



# Frequency Mixer

# ADE-ED14942/1A

## Typical Performance Data

| RF (IN)<br>(MHz) | LO<br>(MHz) | CONVERSION LOSS<br>IF FIXED<br>@IF(OUT)=30MHz<br>(dB) |      |      |
|------------------|-------------|---|------|------|
|                  |             | @LO (dBm)   |      |      |
|                  |             | +10   | +13  | +16  |
| 10.1             | 40.1        | 7.69  | 7.06 | 6.78 |
| 30.1             | 60.1        | 7.54  | 6.90 | 6.64 |
| 60.1             | 90.1        | 7.68  | 6.97 | 6.67 |
| 80.1             | 110.1       | 7.51  | 6.81 | 6.56 |
| 110.1            | 140.1       | 7.60  | 6.85 | 6.60 |
| 130.1            | 160.1       | 7.51  | 6.75 | 6.55 |
| 160.1            | 190.1       | 7.43  | 6.72 | 6.56 |
| 180.1            | 210.1       | 7.15  | 6.60 | 6.46 |
| 210.1            | 240.1       | 7.11  | 6.66 | 6.53 |
| 230.1            | 260.1       | 6.93  | 6.52 | 6.39 |
| 260.1            | 290.1       | 7.01  | 6.62 | 6.48 |
| 280.1            | 310.1       | 6.82  | 6.49 | 6.37 |
| 310.1            | 340.1       | 6.82  | 6.51 | 6.38 |
| 340.1            | 370.1       | 6.76  | 6.47 | 6.33 |
| 360.1            | 390.1       | 6.73  | 6.46 | 6.33 |
| 390.1            | 420.1       | 6.71  | 6.40 | 6.29 |
| 410.1            | 440.1       | 6.70  | 6.40 | 6.24 |
| 440.1            | 470.1       | 6.63  | 6.36 | 6.20 |
| 460.1            | 490.1       | 6.65  | 6.39 | 6.23 |
| 490.1            | 520.1       | 6.68  | 6.35 | 6.22 |
| 510.1            | 540.1       | 6.74  | 6.38 | 6.22 |
| 540.1            | 570.1       | 6.72  | 6.33 | 6.15 |
| 560.1            | 590.1       | 6.72  | 6.29 | 6.10 |
| 590.1            | 620.1       | 6.74  | 6.37 | 6.14 |
| 610.1            | 640.1       | 6.78  | 6.40 | 6.16 |
| 640.1            | 670.1       | 6.71  | 6.40 | 6.20 |
| 670.1            | 700.1       | 6.65  | 6.37 | 6.18 |
| 690.1            | 720.1       | 6.73  | 6.47 | 6.29 |
| 720.1            | 750.1       | 6.68  | 6.41 | 6.23 |
| 740.1            | 770.1       | 6.71  | 6.44 | 6.25 |
| 770.1            | 800.1       | 6.66  | 6.34 | 6.12 |
| 790.1            | 820.1       | 6.73  | 6.34 | 6.11 |
| 820.1            | 850.1       | 6.66  | 6.21 | 6.01 |
| 840.1            | 870.1       | 6.77  | 6.25 | 6.04 |
| 870.1            | 900.1       | 6.89  | 6.32 | 6.06 |
| 890.1            | 920.1       | 7.04  | 6.42 | 6.10 |
| 920.1            | 950.1       | 7.08  | 6.48 | 6.13 |
| 940.1            | 970.1       | 7.19  | 6.58 | 6.17 |
| 970.1            | 1000.1      | 7.20  | 6.62 | 6.19 |
| 1000.1           | 1030.1      | 7.45  | 6.85 | 6.36 |

| RF (IN)<br>(MHz) | LO<br>(MHz) | IP-3 INPUT<br>(dBm) |       |       |
|------------------|-------------|---------------------|-------|-------|
|                  |             | @LO (dBm)           |       |       |
|                  |             | +10                 | +13   | +16   |
| 10.1             | 40.1        | 22.74               | 25.63 | 28.31 |
| 30.1             | 60.1        | 21.98               | 25.78 | 26.33 |
| 60.1             | 90.1        | 22.64               | 26.19 | 29.12 |
| 80.1             | 110.1       | 25.57               | 26.55 | 39.62 |
| 110.1            | 140.1       | 23.91               | 30.26 | 33.26 |
| 130.1            | 160.1       | 24.06               | 32.27 | 35.41 |
| 160.1            | 190.1       | 23.59               | 35.60 | 31.76 |
| 180.1            | 210.1       | 35.01               | 32.88 | 33.25 |
| 210.1            | 240.1       | 30.41               | 34.30 | 29.68 |
| 230.1            | 260.1       | 27.89               | 31.37 | 27.69 |
| 260.1            | 290.1       | 32.20               | 30.62 | 28.22 |
| 280.1            | 310.1       | 27.78               | 29.87 | 27.38 |
| 310.1            | 340.1       | 31.09               | 26.92 | 27.58 |
| 340.1            | 370.1       | 28.82               | 29.99 | 26.71 |
| 360.1            | 390.1       | 28.34               | 28.92 | 28.93 |
| 390.1            | 420.1       | 29.09               | 26.67 | 28.32 |
| 410.1            | 440.1       | 30.73               | 24.72 | 25.27 |
| 440.1            | 470.1       | 28.92               | 31.35 | 25.42 |
| 460.1            | 490.1       | 32.49               | 31.92 | 30.02 |
| 490.1            | 520.1       | 26.56               | 36.27 | 38.11 |
| 510.1            | 540.1       | 25.10               | 28.47 | 28.93 |
| 540.1            | 570.1       | 25.47               | 24.75 | 26.93 |
| 560.1            | 590.1       | 26.39               | 23.02 | 24.62 |
| 590.1            | 620.1       | 28.59               | 25.65 | 23.22 |
| 610.1            | 640.1       | 29.24               | 28.53 | 23.24 |
| 640.1            | 670.1       | 31.00               | 30.04 | 26.39 |
| 670.1            | 700.1       | 27.84               | 30.28 | 32.51 |
| 690.1            | 720.1       | 28.30               | 27.31 | 27.39 |
| 720.1            | 750.1       | 24.03               | 28.39 | 29.07 |
| 740.1            | 770.1       | 23.33               | 27.54 | 26.99 |
| 770.1            | 800.1       | 20.33               | 23.53 | 24.56 |
| 790.1            | 820.1       | 19.69               | 22.74 | 23.50 |
| 820.1            | 850.1       | 18.47               | 20.20 | 21.03 |
| 840.1            | 870.1       | 19.75               | 19.60 | 20.40 |
| 870.1            | 900.1       | 22.86               | 18.66 | 19.20 |
| 890.1            | 920.1       | 21.55               | 17.94 | 17.80 |
| 920.1            | 950.1       | 22.18               | 18.26 | 17.51 |
| 940.1            | 970.1       | 25.12               | 20.10 | 18.06 |
| 970.1            | 1000.1      | 21.69               | 19.09 | 17.84 |
| 1000.1           | 1030.1      | 24.20               | 21.48 | 18.81 |

| RF (IN)<br>(MHz) | LO<br>(MHz) | COMPRESSION<br>@RF IN=+9dBm<br>(dB) |      |      |
|------------------|-------------|-------------------------------------|------|------|
|                  |             | @LO (dBm)                           |      |      |
|                  |             | +10                                 | +13  | +16  |
| 10.1             | 40.1        | 0.10                                | 0.04 | 0.01 |
| 30.1             | 60.1        | 0.10                                | 0.06 | 0.03 |
| 60.1             | 90.1        | 0.08                                | 0.03 | 0.02 |
| 80.1             | 110.1       | 0.20                                | 0.10 | 0.06 |
| 110.1            | 140.1       | 0.16                                | 0.11 | 0.04 |
| 130.1            | 160.1       | 0.20                                | 0.15 | 0.06 |
| 160.1            | 190.1       | 0.34                                | 0.21 | 0.09 |
| 180.1            | 210.1       | 0.42                                | 0.20 | 0.10 |
| 210.1            | 240.1       | 0.31                                | 0.12 | 0.04 |
| 230.1            | 260.1       | 0.34                                | 0.14 | 0.08 |
| 260.1            | 290.1       | 0.23                                | 0.07 | 0.02 |
| 280.1            | 310.1       | 0.27                                | 0.11 | 0.07 |
| 310.1            | 340.1       | 0.24                                | 0.09 | 0.04 |
| 340.1            | 370.1       | 0.28                                | 0.13 | 0.08 |
| 360.1            | 390.1       | 0.32                                | 0.15 | 0.10 |
| 390.1            | 420.1       | 0.31                                | 0.17 | 0.10 |
| 410.1            | 440.1       | 0.24                                | 0.17 | 0.09 |
| 440.1            | 470.1       | 0.19                                | 0.13 | 0.08 |
| 460.1            | 490.1       | 0.15                                | 0.09 | 0.06 |
| 490.1            | 520.1       | 0.27                                | 0.13 | 0.09 |
| 510.1            | 540.1       | 0.29                                | 0.14 | 0.09 |
| 540.1            | 570.1       | 0.37                                | 0.24 | 0.17 |
| 560.1            | 590.1       | 0.41                                | 0.30 | 0.21 |
| 590.1            | 620.1       | 0.37                                | 0.26 | 0.19 |
| 610.1            | 640.1       | 0.30                                | 0.20 | 0.16 |
| 640.1            | 670.1       | 0.29                                | 0.19 | 0.14 |
| 670.1            | 700.1       | 0.27                                | 0.17 | 0.12 |
| 690.1            | 720.1       | 0.27                                | 0.17 | 0.11 |
| 720.1            | 750.1       | 0.36                                | 0.23 | 0.16 |
| 740.1            | 770.1       | 0.41                                | 0.28 | 0.21 |
| 770.1            | 800.1       | 0.55                                | 0.38 | 0.31 |
| 790.1            | 820.1       | 0.62                                | 0.43 | 0.34 |
| 820.1            | 850.1       | 0.63                                | 0.45 | 0.32 |
| 840.1            | 870.1       | 0.60                                | 0.47 | 0.34 |
| 870.1            | 900.1       | 0.55                                | 0.52 | 0.39 |
| 890.1            | 920.1       | 0.52                                | 0.54 | 0.43 |
| 920.1            | 950.1       | 0.53                                | 0.54 | 0.45 |
| 940.1            | 970.1       | 0.53                                | 0.56 | 0.49 |
| 970.1            | 1000.1      | 0.48                                | 0.50 | 0.46 |
| 1000.1           | 1030.1      | 0.49                                | 0.50 | 0.49 |

# Frequency Mixer

# ADE-ED14942/1A

## Typical Performance Data

| IF (OUT) (MHz) | LO (MHz) | CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=445MHz (dB) |
|----------------|----------|--|
|                |          | @LO (dBm)  |
|                |          | +13  |
| 434.9          | 10.1     | 6.62   |
| 414.9          | 30.1     | 6.61   |
| 394.9          | 50.1     | 6.49   |
| 369.9          | 75.1     | 6.47   |
| 349.9          | 95.1     | 6.44   |
| 329.9          | 115.1    | 6.35   |
| 304.9          | 140.1    | 6.21   |
| 284.9          | 160.1    | 6.16   |
| 264.9          | 180.1    | 6.17   |
| 239.9          | 205.1    | 6.20   |
| 219.9          | 225.1    | 6.11   |
| 199.9          | 245.1    | 6.10   |
| 174.9          | 270.1    | 6.19   |
| 154.9          | 290.1    | 6.25   |
| 129.9          | 315.1    | 6.24   |
| 109.9          | 335.1    | 6.18   |
| 89.9           | 355.1    | 6.17   |
| 64.9           | 380.1    | 6.31   |
| 44.9           | 400.1    | 6.31   |
| 24.9           | 420.1    | 6.27   |
| 10.1           | 455.1    | 6.31   |
| 35.1           | 480.1    | 6.42   |
| 65.1           | 510.1    | 6.47   |
| 90.1           | 535.1    | 6.41   |
| 120.1          | 565.1    | 6.43   |
| 145.1          | 590.1    | 6.49   |
| 175.1          | 620.1    | 6.61   |
| 205.1          | 650.1    | 6.66   |
| 230.1          | 675.1    | 6.77   |
| 260.1          | 705.1    | 6.92   |
| 285.1          | 730.1    | 6.94   |
| 315.1          | 760.1    | 7.00   |
| 345.1          | 790.1    | 7.03   |
| 370.1          | 815.1    | 7.08   |
| 400.1          | 845.1    | 6.99   |
| 425.1          | 870.1    | 7.05   |
| 455.1          | 900.1    | 7.28   |
| 485.1          | 930.1    | 7.28   |
| 510.1          | 955.1    | 7.24   |
| 540.1          | 985.1    | 7.25   |

| IF (OUT) (MHz) | LO (MHz) | CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=380MHz (dB) |
|----------------|----------|--|
|                |          | @LO (dBm)  |
|                |          | +13  |
| 10.1           | 390.1    | 6.34   |
| 25.1           | 405.1    | 6.32   |
| 40.1           | 420.1    | 6.40   |
| 55.1           | 435.1    | 6.41   |
| 70.1           | 450.1    | 6.49   |
| 85.1           | 465.1    | 6.48   |
| 100.1          | 480.1    | 6.48   |
| 115.1          | 495.1    | 6.44   |
| 135.1          | 515.1    | 6.54   |
| 150.1          | 530.1    | 6.48   |
| 165.1          | 545.1    | 6.61   |
| 180.1          | 560.1    | 6.59   |
| 195.1          | 575.1    | 6.61   |
| 210.1          | 590.1    | 6.56   |
| 225.1          | 605.1    | 6.58   |
| 240.1          | 620.1    | 6.69   |
| 260.1          | 640.1    | 6.85   |
| 275.1          | 655.1    | 6.91   |
| 290.1          | 670.1    | 6.95   |
| 305.1          | 685.1    | 6.98   |
| 320.1          | 700.1    | 6.92   |
| 335.1          | 715.1    | 6.99   |
| 350.1          | 730.1    | 7.06   |
| 365.1          | 745.1    | 7.18   |
| 385.1          | 765.1    | 7.29   |
| 400.1          | 780.1    | 7.26   |
| 415.1          | 795.1    | 7.13   |
| 430.1          | 810.1    | 7.11   |
| 445.1          | 825.1    | 7.17   |
| 460.1          | 840.1    | 7.23   |
| 475.1          | 855.1    | 7.26   |
| 490.1          | 870.1    | 7.27   |
| 510.1          | 890.1    | 7.23   |
| 525.1          | 905.1    | 7.21   |
| 540.1          | 920.1    | 7.26   |
| 555.1          | 935.1    | 7.32   |
| 570.1          | 950.1    | 7.38   |
| 585.1          | 965.1    | 7.38   |
| 600.1          | 980.1    | 7.28   |
| 620.1          | 1000.1   | 7.16   |

| IF (OUT) (MHz) | LO (MHz) | CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=510.1MHz (dB) |
|----------------|----------|--|
|                |          | @LO (dBm)  |
|                |          | +13  |
| 500.0          | 10.1     | 6.54   |
| 488.0          | 22.1     | 6.58   |
| 476.0          | 34.1     | 6.58   |
| 464.0          | 46.1     | 6.50   |
| 450.0          | 60.1     | 6.43   |
| 438.0          | 72.1     | 6.36   |
| 426.0          | 84.1     | 6.28   |
| 414.0          | 96.1     | 6.29   |
| 400.0          | 110.1    | 6.25   |
| 388.0          | 122.1    | 6.21   |
| 376.0          | 134.1    | 6.22   |
| 362.0          | 148.1    | 6.13   |
| 350.0          | 160.1    | 6.09   |
| 338.0          | 172.1    | 6.09   |
| 326.0          | 184.1    | 6.03   |
| 312.0          | 198.1    | 6.04   |
| 300.0          | 210.1    | 6.05   |
| 288.0          | 222.1    | 6.05   |
| 274.0          | 236.1    | 6.09   |
| 262.0          | 248.1    | 6.06   |
| 250.0          | 260.1    | 6.06   |
| 238.0          | 272.1    | 6.05   |
| 224.0          | 286.1    | 6.03   |
| 212.0          | 298.1    | 6.11   |
| 200.0          | 310.1    | 6.12   |
| 186.0          | 324.1    | 6.12   |
| 174.0          | 336.1    | 6.18   |
| 162.0          | 348.1    | 6.14   |
| 150.0          | 360.1    | 6.11   |
| 136.0          | 374.1    | 6.16   |
| 124.0          | 386.1    | 6.13   |
| 112.0          | 398.1    | 6.18   |
| 98.0           | 412.1    | 6.21   |
| 86.0           | 424.1    | 6.24   |
| 74.0           | 436.1    | 6.28   |
| 62.0           | 448.1    | 6.24   |
| 48.0           | 462.1    | 6.23   |
| 36.0           | 474.1    | 6.23   |
| 24.0           | 486.1    | 6.22   |
| 10.0           | 500.1    | 6.30   |

# Frequency Mixer

# ADE-ED14942/1A

## Typical Performance Data

| LO<br>(MHz) | LO-RF ISOLATION<br>(dB) |       |       | LO-IF ISOLATION<br>(dB) |       |       |
|-------------|-------------------------|-------|-------|-------------------------|-------|-------|
|             | @LO (dBm)               |       |       | @LO (dBm)               |       |       |
|             | +10                     | +13   | +16   | +10                     | +13   | +16   |
| 40.1        | 61.29                   | 62.73 | 63.41 | 56.65                   | 55.41 | 55.03 |
| 60.1        | 57.71                   | 59.27 | 60.18 | 56.52                   | 55.44 | 55.08 |
| 90.1        | 54.19                   | 55.48 | 56.04 | 56.40                   | 54.91 | 54.19 |
| 110.1       | 52.29                   | 53.64 | 54.26 | 56.19                   | 54.72 | 54.03 |
| 140.1       | 50.16                   | 51.30 | 52.52 | 55.81                   | 54.19 | 54.56 |
| 160.1       | 49.01                   | 49.98 | 51.35 | 55.42                   | 53.71 | 54.36 |
| 190.1       | 47.27                   | 48.34 | 49.65 | 53.94                   | 53.13 | 53.82 |
| 210.1       | 46.24                   | 47.80 | 49.23 | 52.60                   | 52.83 | 53.51 |
| 240.1       | 44.89                   | 46.67 | 48.12 | 51.49                   | 52.31 | 52.86 |
| 260.1       | 44.26                   | 46.08 | 47.47 | 51.12                   | 51.64 | 51.99 |
| 290.1       | 43.37                   | 45.09 | 46.34 | 50.94                   | 50.87 | 51.22 |
| 310.1       | 42.89                   | 44.81 | 46.18 | 50.63                   | 50.39 | 50.13 |
| 340.1       | 42.30                   | 44.14 | 45.50 | 50.06                   | 50.18 | 50.17 |
| 370.1       | 41.72                   | 43.56 | 44.82 | 50.13                   | 48.59 | 48.18 |
| 390.1       | 41.25                   | 43.12 | 44.46 | 49.73                   | 48.55 | 47.28 |
| 420.1       | 40.89                   | 42.80 | 44.19 | 48.71                   | 48.79 | 48.20 |
| 440.1       | 40.66                   | 42.38 | 43.69 | 47.73                   | 47.45 | 47.56 |
| 470.1       | 40.33                   | 42.25 | 43.60 | 47.55                   | 45.15 | 44.77 |
| 490.1       | 40.01                   | 41.88 | 43.25 | 47.69                   | 45.61 | 44.08 |
| 520.1       | 39.31                   | 41.57 | 43.18 | 45.75                   | 46.14 | 44.94 |
| 540.1       | 39.42                   | 41.47 | 43.03 | 44.57                   | 45.65 | 44.75 |
| 570.1       | 39.09                   | 40.87 | 42.17 | 41.80                   | 43.20 | 42.79 |
| 590.1       | 38.96                   | 40.81 | 42.07 | 41.20                   | 42.26 | 42.25 |
| 620.1       | 38.84                   | 41.11 | 42.36 | 41.91                   | 40.31 | 40.87 |
| 640.1       | 38.48                   | 40.88 | 42.19 | 42.65                   | 40.08 | 39.78 |
| 670.1       | 38.39                   | 40.76 | 42.20 | 42.25                   | 39.97 | 38.84 |
| 700.1       | 38.21                   | 40.45 | 42.02 | 41.99                   | 40.15 | 38.73 |
| 720.1       | 38.10                   | 40.21 | 41.80 | 41.79                   | 40.22 | 38.77 |
| 750.1       | 37.84                   | 39.86 | 41.29 | 41.33                   | 40.01 | 38.57 |
| 770.1       | 37.66                   | 39.52 | 40.84 | 40.52                   | 39.59 | 38.42 |
| 800.1       | 37.40                   | 39.22 | 40.71 | 39.25                   | 38.64 | 38.54 |
| 820.1       | 37.53                   | 39.38 | 40.89 | 38.64                   | 37.82 | 37.81 |
| 850.1       | 37.92                   | 39.91 | 41.24 | 38.06                   | 36.92 | 36.48 |
| 870.1       | 38.26                   | 40.30 | 41.53 | 37.48                   | 36.66 | 36.08 |
| 900.1       | 38.28                   | 40.47 | 41.66 | 35.88                   | 36.28 | 35.58 |
| 920.1       | 38.13                   | 40.64 | 41.72 | 35.28                   | 36.11 | 35.35 |
| 950.1       | 38.02                   | 40.74 | 41.61 | 34.44                   | 35.67 | 34.91 |
| 970.1       | 37.55                   | 40.42 | 41.12 | 33.92                   | 35.10 | 34.61 |
| 1000.1      | 37.17                   | 40.38 | 41.48 | 33.63                   | 34.25 | 34.19 |
| 1030.1      | 36.49                   | 39.75 | 41.12 | 33.88                   | 33.94 | 34.06 |

| RF<br>(IN)<br>(MHz) | LO<br>(MHz) | RF-IF ISOLATION<br>(dB) |       |       |
|---------------------|-------------|-------------------------|-------|-------|
|                     |             | @LO (dBm)               |       |       |
|                     |             | +10                     | +13   | +16   |
| 10.1                | 40.1        | 55.53                   | 56.16 | 53.69 |
| 30.1                | 60.1        | 45.40                   | 47.34 | 47.48 |
| 60.1                | 90.1        | 39.35                   | 40.71 | 41.79 |
| 80.1                | 110.1       | 37.19                   | 38.86 | 39.91 |
| 110.1               | 140.1       | 34.21                   | 35.72 | 36.57 |
| 130.1               | 160.1       | 32.96                   | 34.86 | 35.62 |
| 160.1               | 190.1       | 31.16                   | 32.80 | 33.34 |
| 180.1               | 210.1       | 30.67                   | 32.27 | 32.71 |
| 210.1               | 240.1       | 29.29                   | 30.49 | 30.88 |
| 230.1               | 260.1       | 28.78                   | 30.15 | 30.64 |
| 260.1               | 290.1       | 27.62                   | 28.77 | 29.23 |
| 280.1               | 310.1       | 27.39                   | 28.47 | 28.99 |
| 310.1               | 340.1       | 26.34                   | 27.24 | 27.68 |
| 340.1               | 370.1       | 25.92                   | 26.77 | 27.37 |
| 360.1               | 390.1       | 25.41                   | 26.27 | 26.79 |
| 390.1               | 420.1       | 24.82                   | 25.77 | 26.29 |
| 410.1               | 440.1       | 24.28                   | 25.11 | 25.81 |
| 440.1               | 470.1       | 23.82                   | 24.62 | 25.40 |
| 460.1               | 490.1       | 23.62                   | 24.36 | 25.06 |
| 490.1               | 520.1       | 22.86                   | 23.80 | 24.34 |
| 510.1               | 540.1       | 22.44                   | 23.42 | 23.97 |
| 540.1               | 570.1       | 22.14                   | 23.29 | 24.04 |
| 560.1               | 590.1       | 22.04                   | 23.33 | 24.22 |
| 590.1               | 620.1       | 21.72                   | 22.82 | 23.69 |
| 610.1               | 640.1       | 21.39                   | 22.45 | 23.38 |
| 640.1               | 670.1       | 21.27                   | 22.18 | 23.10 |
| 670.1               | 700.1       | 21.46                   | 22.22 | 22.98 |
| 690.1               | 720.1       | 21.39                   | 22.06 | 22.71 |
| 720.1               | 750.1       | 21.48                   | 22.28 | 22.97 |
| 740.1               | 770.1       | 21.48                   | 22.30 | 23.08 |
| 770.1               | 800.1       | 21.96                   | 23.17 | 24.26 |
| 790.1               | 820.1       | 22.03                   | 23.47 | 24.66 |
| 820.1               | 850.1       | 22.52                   | 24.29 | 25.38 |
| 840.1               | 870.1       | 22.68                   | 24.58 | 25.75 |
| 870.1               | 900.1       | 23.03                   | 25.10 | 26.61 |
| 890.1               | 920.1       | 23.03                   | 25.31 | 27.24 |
| 920.1               | 950.1       | 23.50                   | 25.95 | 28.32 |
| 940.1               | 970.1       | 23.69                   | 26.15 | 28.86 |
| 970.1               | 1000.1      | 24.41                   | 26.78 | 29.71 |
| 1000.1              | 1030.1      | 24.97                   | 27.45 | 30.83 |

# Frequency Mixer

# ADE-ED14942/1A

## Typical Performance Data

| RF<br>(IN)<br>(MHz) | LO<br>(MHz) | RF VSWR<br>(:1) |      |      | LO<br>(MHz) | LO VSWR<br>(:1) |      |      | IF<br>(OUT)<br>(MHz) | IF VSWR<br>@LO=510MHz<br>(:1) |      |      |
|---------------------|-------------|-----------------|------|------|-------------|-----------------|------|------|----------------------|-------------------------------|------|------|
|                     |             | @LO (dBm)       |      |      |             | @LO (dBm)       |      |      |                      | @LO (dBm)                     |      |      |
|                     |             | +10             | +13  | +16  |             | +10             | +13  | +16  |                      | +10                           | +13  | +16  |
| 10.1                | 40.1        | 1.49            | 1.37 | 1.31 | 40.1        | 1.08            | 1.67 | 2.51 | 10.1                 | 1.07                          | 1.09 | 1.16 |
| 30.1                | 60.1        | 1.46            | 1.33 | 1.26 | 60.1        | 1.07            | 1.66 | 2.47 | 15.1                 | 1.07                          | 1.09 | 1.17 |
| 60.1                | 90.1        | 1.48            | 1.34 | 1.27 | 90.1        | 1.07            | 1.71 | 2.56 | 20.1                 | 1.06                          | 1.10 | 1.17 |
| 80.1                | 110.1       | 1.44            | 1.30 | 1.23 | 110.1       | 1.10            | 1.67 | 2.48 | 25.1                 | 1.06                          | 1.10 | 1.18 |
| 110.1               | 140.1       | 1.46            | 1.31 | 1.24 | 140.1       | 1.12            | 1.60 | 2.37 | 30.1                 | 1.05                          | 1.11 | 1.18 |
| 130.1               | 160.1       | 1.45            | 1.29 | 1.23 | 160.1       | 1.11            | 1.62 | 2.39 | 40.1                 | 1.05                          | 1.10 | 1.18 |
| 160.1               | 190.1       | 1.46            | 1.30 | 1.24 | 190.1       | 1.11            | 1.67 | 2.48 | 45.1                 | 1.06                          | 1.09 | 1.17 |
| 180.1               | 210.1       | 1.41            | 1.27 | 1.22 | 210.1       | 1.10            | 1.64 | 2.42 | 50.1                 | 1.07                          | 1.09 | 1.16 |
| 210.1               | 240.1       | 1.40            | 1.28 | 1.23 | 240.1       | 1.09            | 1.60 | 2.34 | 55.1                 | 1.07                          | 1.08 | 1.15 |
| 230.1               | 260.1       | 1.37            | 1.26 | 1.21 | 260.1       | 1.08            | 1.65 | 2.43 | 65.1                 | 1.08                          | 1.07 | 1.14 |
| 260.1               | 290.1       | 1.39            | 1.28 | 1.23 | 290.1       | 1.07            | 1.69 | 2.47 | 70.1                 | 1.09                          | 1.06 | 1.14 |
| 280.1               | 310.1       | 1.35            | 1.25 | 1.21 | 310.1       | 1.06            | 1.68 | 2.43 | 75.1                 | 1.09                          | 1.07 | 1.14 |
| 310.1               | 340.1       | 1.35            | 1.26 | 1.22 | 340.1       | 1.07            | 1.69 | 2.42 | 80.1                 | 1.08                          | 1.07 | 1.14 |
| 340.1               | 370.1       | 1.32            | 1.24 | 1.20 | 370.1       | 1.10            | 1.75 | 2.50 | 90.1                 | 1.07                          | 1.08 | 1.16 |
| 360.1               | 390.1       | 1.32            | 1.24 | 1.20 | 390.1       | 1.12            | 1.79 | 2.55 | 95.1                 | 1.07                          | 1.09 | 1.16 |
| 390.1               | 420.1       | 1.32            | 1.23 | 1.19 | 420.1       | 1.12            | 1.74 | 2.45 | 100.1                | 1.06                          | 1.09 | 1.16 |
| 410.1               | 440.1       | 1.32            | 1.24 | 1.19 | 440.1       | 1.16            | 1.75 | 2.44 | 105.1                | 1.06                          | 1.09 | 1.16 |
| 440.1               | 470.1       | 1.29            | 1.22 | 1.18 | 470.1       | 1.21            | 1.85 | 2.59 | 110.1                | 1.07                          | 1.08 | 1.16 |
| 460.1               | 490.1       | 1.28            | 1.22 | 1.18 | 490.1       | 1.23            | 1.86 | 2.57 | 120.1                | 1.08                          | 1.07 | 1.14 |
| 490.1               | 520.1       | 1.30            | 1.22 | 1.19 | 520.1       | 1.15            | 1.78 | 2.46 | 125.1                | 1.08                          | 1.06 | 1.13 |
| 510.1               | 540.1       | 1.30            | 1.22 | 1.19 | 540.1       | 1.18            | 1.81 | 2.48 | 130.1                | 1.09                          | 1.05 | 1.12 |
| 540.1               | 570.1       | 1.27            | 1.19 | 1.15 | 570.1       | 1.23            | 1.86 | 2.53 | 135.1                | 1.09                          | 1.05 | 1.12 |
| 560.1               | 590.1       | 1.26            | 1.17 | 1.13 | 590.1       | 1.26            | 1.89 | 2.57 | 145.1                | 1.09                          | 1.06 | 1.12 |
| 590.1               | 620.1       | 1.23            | 1.16 | 1.12 | 620.1       | 1.29            | 1.89 | 2.55 | 150.1                | 1.09                          | 1.06 | 1.13 |
| 610.1               | 640.1       | 1.24            | 1.16 | 1.11 | 640.1       | 1.30            | 1.91 | 2.57 | 155.1                | 1.08                          | 1.07 | 1.14 |
| 640.1               | 670.1       | 1.22            | 1.16 | 1.13 | 670.1       | 1.38            | 2.02 | 2.74 | 160.1                | 1.08                          | 1.07 | 1.14 |
| 670.1               | 700.1       | 1.19            | 1.14 | 1.11 | 700.1       | 1.42            | 2.01 | 2.68 | 170.1                | 1.08                          | 1.07 | 1.14 |
| 690.1               | 720.1       | 1.19            | 1.15 | 1.13 | 720.1       | 1.44            | 2.02 | 2.68 | 175.1                | 1.08                          | 1.06 | 1.13 |
| 720.1               | 750.1       | 1.16            | 1.12 | 1.10 | 750.1       | 1.47            | 2.07 | 2.74 | 180.1                | 1.09                          | 1.06 | 1.13 |
| 740.1               | 770.1       | 1.15            | 1.11 | 1.09 | 770.1       | 1.51            | 2.09 | 2.76 | 185.1                | 1.09                          | 1.05 | 1.12 |
| 770.1               | 800.1       | 1.14            | 1.09 | 1.07 | 800.1       | 1.52            | 2.06 | 2.68 | 190.1                | 1.10                          | 1.04 | 1.11 |
| 790.1               | 820.1       | 1.14            | 1.09 | 1.09 | 820.1       | 1.54            | 2.05 | 2.66 | 200.1                | 1.11                          | 1.03 | 1.10 |
| 820.1               | 850.1       | 1.10            | 1.05 | 1.07 | 850.1       | 1.61            | 2.15 | 2.80 | 205.1                | 1.12                          | 1.04 | 1.10 |
| 840.1               | 870.1       | 1.11            | 1.05 | 1.07 | 870.1       | 1.68            | 2.25 | 2.91 | 210.1                | 1.12                          | 1.04 | 1.10 |
| 870.1               | 900.1       | 1.11            | 1.03 | 1.06 | 900.1       | 1.71            | 2.24 | 2.85 | 215.1                | 1.12                          | 1.05 | 1.11 |
| 890.1               | 920.1       | 1.12            | 1.03 | 1.05 | 920.1       | 1.74            | 2.29 | 2.89 | 225.1                | 1.11                          | 1.06 | 1.12 |
| 920.1               | 950.1       | 1.12            | 1.03 | 1.04 | 950.1       | 1.81            | 2.41 | 3.04 | 230.1                | 1.10                          | 1.06 | 1.12 |
| 940.1               | 970.1       | 1.13            | 1.05 | 1.03 | 970.1       | 1.84            | 2.43 | 3.04 | 235.1                | 1.10                          | 1.05 | 1.12 |
| 970.1               | 1000.1      | 1.14            | 1.07 | 1.06 | 1000.1      | 1.88            | 2.45 | 3.06 | 240.1                | 1.10                          | 1.05 | 1.12 |
| 1000.1              | 1030.1      | 1.19            | 1.13 | 1.11 | 1030.1      | 1.89            | 2.46 | 3.07 | 250.1                | 1.11                          | 1.03 | 1.10 |

## Harmonics Tables

RF HARMONICS ORDER

|    | (-dBm) | (-dBc) |        |        |        |        |        |        |        |        |        |        |
|----|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0  | ---    | ---    | 23.84  | 30.36  | 31.22  | 33.53  | 23.81  | 41.51  | 26.71  | 50.72  | 40.88  | 43.23  |
| 1  | ---    | 15.93  | ---    | 30.18  | 12.68  | 40.97  | 17.82  | 29.64  | 40.45  | 45.15  | 45.14  | 42.82  |
| 2  | 92.41  | 66.77  | 52.34  | 60.55  | 52.49  | 63.52  | 50.61  | 57.23  | 46.73  | 60.56  | 45.11  | 54.60  |
| 3  | 109.87 | 50.97  | 45.84  | 53.52  | 51.69  | 69.15  | 42.72  | 64.80  | 49.21  | 57.89  | 60.13  | 75.25  |
| 4  | 114.01 | 77.05  | 70.23  | 78.20  | 77.58  | 87.78  | 76.51  | 76.83  | 77.26  | 81.95  | 73.84  | 79.10  |
| 5  | 125.15 | 80.55  | 79.42  | 78.11  | 81.10  | 74.61  | 70.99  | 72.86  | 68.70  | 75.29  | 63.92  | 73.64  |
| 6  | 113.76 | 97.11  | 81.35  | 88.33  | 82.23  | 90.97  | 85.08  | 93.29  | 92.34  | 97.26  | 84.60  | 89.56  |
| 7  | 119.20 | 101.07 | 92.26  | 87.70  | 89.32  | 86.87  | 83.40  | 85.95  | 90.18  | 87.98  | 83.32  | 87.44  |
| 8  | 123.82 | 107.49 | 108.77 | 104.51 | 96.36  | 101.01 | 99.30  | 99.71  | 99.90  | 100.83 | 112.24 | 106.01 |
| 9  | 118.59 | 110.14 | 106.53 | 138.09 | 104.27 | 108.72 | 102.31 | 110.65 | 99.47  | 103.25 | 134.66 | 107.94 |
| 10 | 123.09 | 113.03 | 115.22 | 113.34 | 121.92 | 121.92 | 113.28 | 117.01 | 111.56 | 115.04 | 105.52 | 117.57 |
|    | RF CAL | 0      | 1      | 2      | 3      | 4      | 5      | 6      | 7      | 8      | 9      | 10     |

### LO HARMONICS ORDER

Test conditions: RF IN: 445 MHz; 0 dBm.  
 LO IN: 475 MHz; +13.00 dBm  
 IF OUT: 30 MHz; -6.01 dBm

RF HARMONICS ORDER

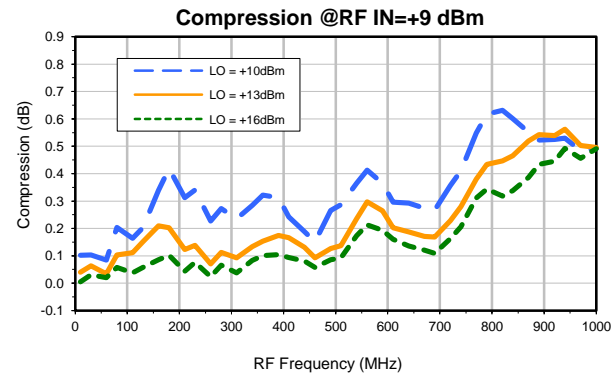
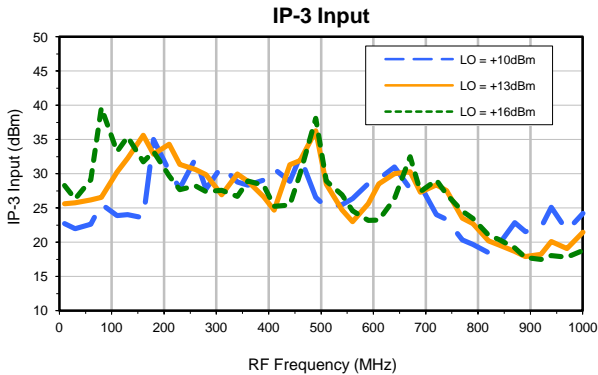
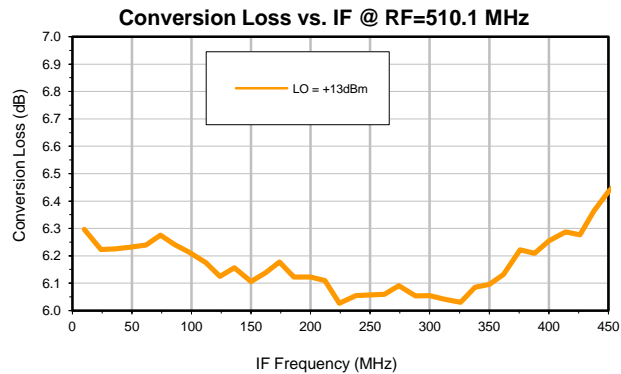
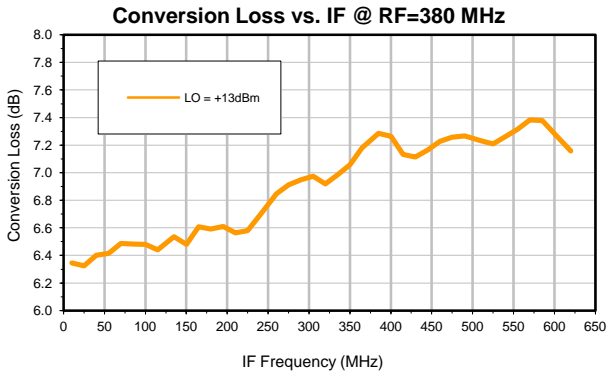
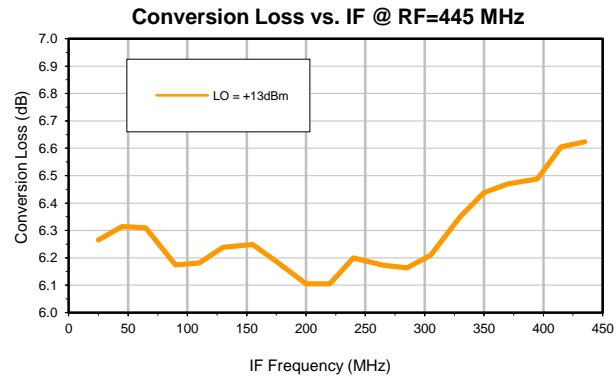
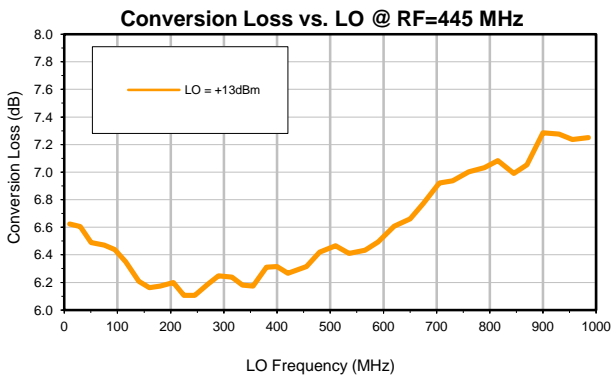
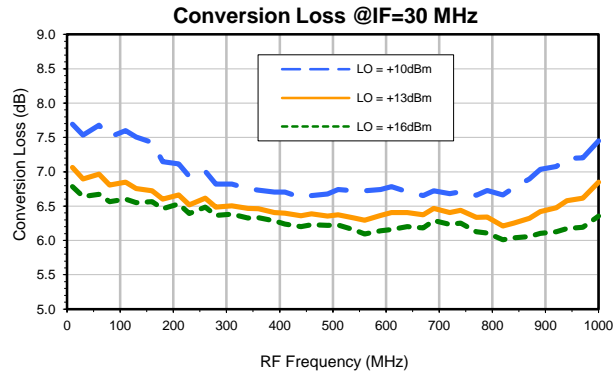
|    | (-dBm) | (-dBc) |       |       |       |       |       |       |       |       |       |       |
|----|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0  | ---    | ---    | 32.68 | 43.84 | 39.43 | 54.41 | 37.33 | 59.57 | 44.84 | 72.48 | 53.33 | 64.52 |
| 1  | ---    | 19.58  | ---   | 34.03 | 13.73 | 41.41 | 25.13 | 46.67 | 54.93 | 58.89 | 51.92 | 66.81 |
| 2  | 89.14  | 61.01  | 61.27 | 48.31 | 61.91 | 56.45 | 48.03 | 56.98 | 51.41 | 65.14 | 51.58 | 57.12 |
| 3  | 96.95  | 24.08  | 17.12 | 48.72 | 28.85 | 58.45 | 34.14 | 52.19 | 43.06 | 50.29 | 66.23 | 63.06 |
| 4  | 104.43 | 57.15  | 56.33 | 62.25 | 60.04 | 64.55 | 66.54 | 65.33 | 59.23 | 78.64 | 58.50 | 74.55 |
| 5  | 105.35 | 37.45  | 50.85 | 42.14 | 35.98 | 44.33 | 43.67 | 50.59 | 50.50 | 52.33 | 75.83 | 58.36 |
| 6  | 93.51  | 74.38  | 63.95 | 60.03 | 65.03 | 63.87 | 62.40 | 65.23 | 62.72 | 70.03 | 72.38 | 74.05 |
| 7  | 104.21 | 47.85  | 44.69 | 44.14 | 49.18 | 49.44 | 66.98 | 51.06 | 49.08 | 55.60 | 56.55 | 63.43 |
| 8  | 106.60 | 79.69  | 74.23 | 65.94 | 69.27 | 67.43 | 76.86 | 76.49 | 67.15 | 80.08 | 76.80 | 77.88 |
| 9  | 95.54  | 62.43  | 59.71 | 56.70 | 54.97 | 60.45 | 57.32 | 60.80 | 52.23 | 54.46 | 57.07 | 61.44 |
| 10 | 104.03 | 85.24  | 74.74 | 75.71 | 75.94 | 74.45 | 75.67 | 64.70 | 69.73 | 95.45 | 72.74 | 76.26 |
|    | RF CAL | 0      | 1     | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    |

### LO HARMONICS ORDER

Test conditions: RF IN: 445 MHz; 10 dBm.  
 LO IN: 475 MHz; +13.00 dBm  
 IF OUT: 30 MHz; 2.62 dBm

- Notes: 1. All Harmonics are in (dBc) relative to IF OUTPUT  
 2. + entry denotes harmonics are in (dBc) above IF OUTPUT  
 3. RF Cal represents the Harmonics level of the RF Input Signal to the mixer

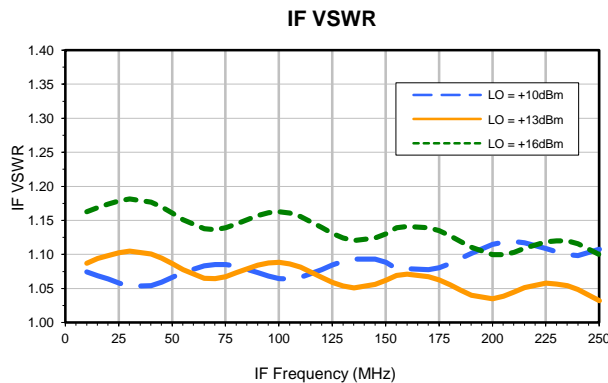
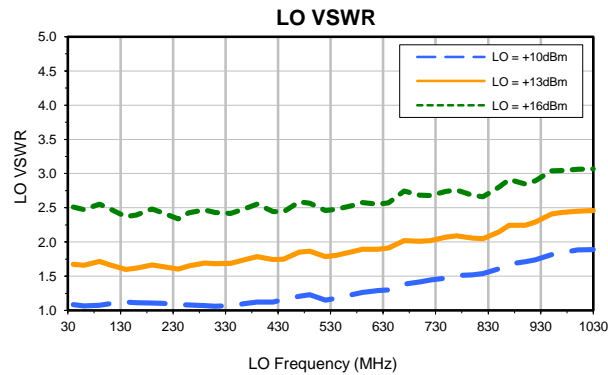
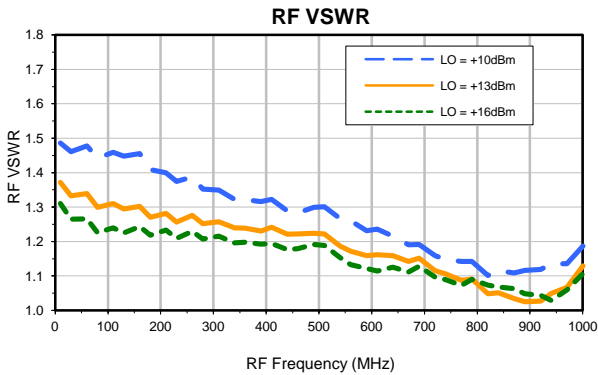
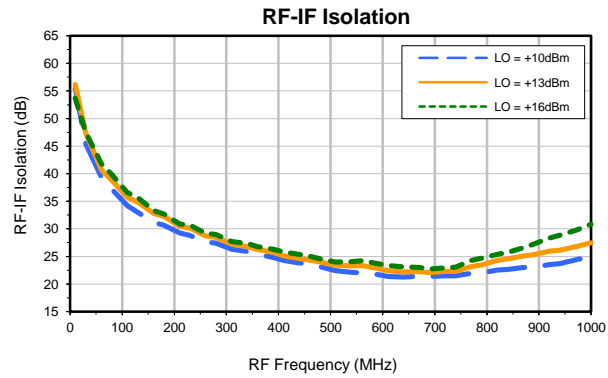
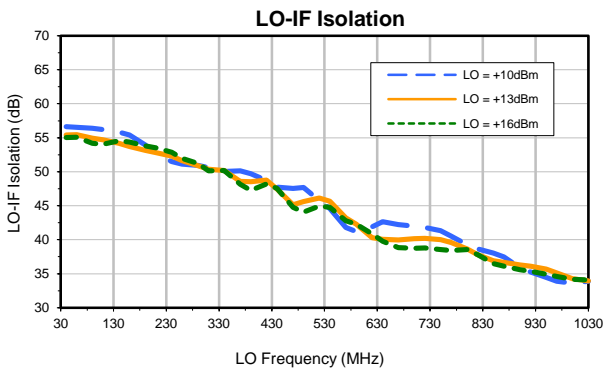
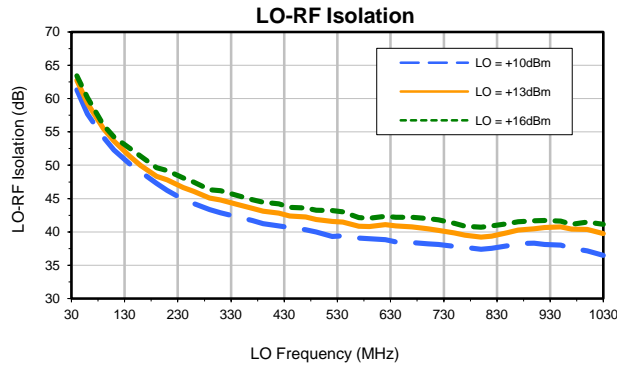
## Typical Performance Curves



# Frequency Mixer

# ADE-ED14942/1A

## Typical Performance Curves



## Harmonics Tables

RF HARMONICS ORDER

|    | (-dBm) | (-dBc) |        |        |        |        |        |        |        |        |        |        |
|----|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0  | ---    | ---    | 23.84  | 30.36  | 31.22  | 33.53  | 23.81  | 41.51  | 26.71  | 50.72  | 40.88  | 43.23  |
| 1  | ---    | 15.93  | ---    | 30.18  | 12.68  | 40.97  | 17.82  | 29.64  | 40.45  | 45.15  | 45.14  | 42.82  |
| 2  | 92.41  | 66.77  | 52.34  | 60.55  | 52.49  | 63.52  | 50.61  | 57.23  | 46.73  | 60.56  | 45.11  | 54.60  |
| 3  | 109.87 | 50.97  | 45.84  | 53.52  | 51.69  | 69.15  | 42.72  | 64.80  | 49.21  | 57.89  | 60.13  | 75.25  |
| 4  | 114.01 | 77.05  | 70.23  | 78.20  | 77.58  | 87.78  | 76.51  | 76.83  | 77.26  | 81.95  | 73.84  | 79.10  |
| 5  | 125.15 | 80.55  | 79.42  | 78.11  | 81.10  | 74.61  | 70.99  | 72.86  | 68.70  | 75.29  | 63.92  | 73.64  |
| 6  | 113.76 | 97.11  | 81.35  | 88.33  | 82.23  | 90.97  | 85.08  | 93.29  | 92.34  | 97.26  | 84.60  | 89.56  |
| 7  | 119.20 | 101.07 | 92.26  | 87.70  | 89.32  | 86.87  | 83.40  | 85.95  | 90.18  | 87.98  | 83.32  | 87.44  |
| 8  | 123.82 | 107.49 | 108.77 | 104.51 | 96.36  | 101.01 | 99.30  | 99.71  | 99.90  | 100.83 | 112.24 | 106.01 |
| 9  | 118.59 | 110.14 | 106.53 | 138.09 | 104.27 | 108.72 | 102.31 | 110.65 | 99.47  | 103.25 | 134.66 | 107.94 |
| 10 | 123.09 | 113.03 | 115.22 | 113.34 | 121.92 | 121.92 | 113.28 | 117.01 | 111.56 | 115.04 | 105.52 | 117.57 |
|    | RF CAL | 0      | 1      | 2      | 3      | 4      | 5      | 6      | 7      | 8      | 9      | 10     |

### LO HARMONICS ORDER

Test conditions: RF IN: 445 MHz; 0 dBm.  
 LO IN: 475 MHz; +13.00 dBm  
 IF OUT: 30 MHz; -6.01 dBm

RF HARMONICS ORDER

|    | (-dBm) | (-dBc) |       |       |       |       |       |       |       |       |       |       |
|----|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0  | ---    | ---    | 32.68 | 43.84 | 39.43 | 54.41 | 37.33 | 59.57 | 44.84 | 72.48 | 53.33 | 64.52 |
| 1  | ---    | 19.58  | ---   | 34.03 | 13.73 | 41.41 | 25.13 | 46.67 | 54.93 | 58.89 | 51.92 | 66.81 |
| 2  | 89.14  | 61.01  | 61.27 | 48.31 | 61.91 | 56.45 | 48.03 | 56.98 | 51.41 | 65.14 | 51.58 | 57.12 |
| 3  | 96.95  | 24.08  | 17.12 | 48.72 | 28.85 | 58.45 | 34.14 | 52.19 | 43.06 | 50.29 | 66.23 | 63.06 |
| 4  | 104.43 | 57.15  | 56.33 | 62.25 | 60.04 | 64.55 | 66.54 | 65.33 | 59.23 | 78.64 | 58.50 | 74.55 |
| 5  | 105.35 | 37.45  | 50.85 | 42.14 | 35.98 | 44.33 | 43.67 | 50.59 | 50.50 | 52.33 | 75.83 | 58.36 |
| 6  | 93.51  | 74.38  | 63.95 | 60.03 | 65.03 | 63.87 | 62.40 | 65.23 | 62.72 | 70.03 | 72.38 | 74.05 |
| 7  | 104.21 | 47.85  | 44.69 | 44.14 | 49.18 | 49.44 | 66.98 | 51.06 | 49.08 | 55.60 | 56.55 | 63.43 |
| 8  | 106.60 | 79.69  | 74.23 | 65.94 | 69.27 | 67.43 | 76.86 | 76.49 | 67.15 | 80.08 | 76.80 | 77.88 |
| 9  | 95.54  | 62.43  | 59.71 | 56.70 | 54.97 | 60.45 | 57.32 | 60.80 | 52.23 | 54.46 | 57.07 | 61.44 |
| 10 | 104.03 | 85.24  | 74.74 | 75.71 | 75.94 | 74.45 | 75.67 | 64.70 | 69.73 | 95.45 | 72.74 | 76.26 |
|    | RF CAL | 0      | 1     | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    |

### LO HARMONICS ORDER

Test conditions: RF IN: 445 MHz; 10 dBm.  
 LO IN: 475 MHz; +13.00 dBm  
 IF OUT: 30 MHz; 2.62 dBm

- Notes:
1. All Harmonics are in (dBc) relative to IF OUTPUT
  2. + entry denotes harmonics are in (dBc) above IF OUTPUT
  3. RF Cal represents the Harmonics level of the RF Input Signal to the mixer

# Case Style

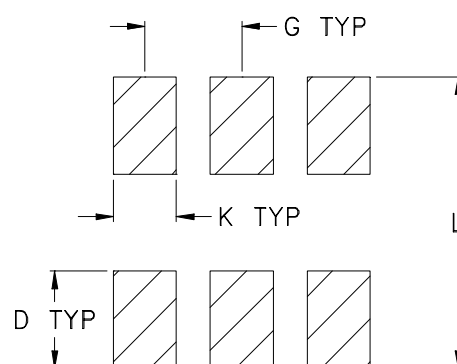
# CD

CD541  
CD542  
CD636  
CD637

## Outline Dimensions



## PCB Land Pattern



Suggested Layout,  
Tolerance to be within  $\pm .002$

| CASE# | A              | B              | C              | D              | E              | F              | G              | H              | J              | K              | L              | WT, GRAM |
|-------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------|
| CD541 |                |                |                |                | .082<br>(2.08) |                |                |                |                |                |                | .15      |
| CD542 | .272<br>(6.91) | .310<br>(7.87) | .220<br>(5.58) | .100<br>(2.54) | .112<br>(2.84) | .055<br>(1.40) | .100<br>(2.54) | .030<br>(0.76) | .026<br>(0.66) | .065<br>(1.65) | .300<br>(7.62) | .20      |
| CD636 |                |                |                |                | .162<br>(4.11) |                |                |                |                |                |                | .25      |
| CD637 |                |                |                |                | .206<br>(5.23) |                |                |                |                |                |                | .40      |

Dimensions are in inches (mm). Tolerances: 2 Pl.  $\pm .01$ ; 3 Pl.  $\pm .005$

### Notes:

- Case material: Plastic.
- Termination finish:  
For RoHS Case Styles: Tin plate over Nickel plate. All models, (+) suffix.  
For RoHS-5 Case Styles: Tin-Lead plate. All models, no (+) suffix.

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# Tape & Reel Packaging TR-F34



| Tape Width, mm | Device Cavity Pitch, mm | Reel Size, inches | Devices per Reel see note          |      |
|----------------|-------------------------|-------------------|------------------------------------|------|
| 16             | 12                      | 7                 | Small quantity standard (see note) | 20   |
|                |                         |                   |                                    | 50   |
|                |                         |                   | Standard                           | 100  |
|                |                         |                   |                                    | 200  |
|                |                         | 13                | Standard                           | 500  |
|                |                         |                   |                                    | 1000 |

Note: Availability of small reel quantity varies by model.  
Refer to pricing and availability on individual model dashboard.

Mini-Circuits carrier tape materials provide protection from ESD (Electro-Static Discharge) during handling and transportation. Tapes are static dissipative and comply with industry standards EIA-481/EIA-541.

Go to: [www.minicircuits.com/pages/pdfs/tape.pdf](http://www.minicircuits.com/pages/pdfs/tape.pdf)



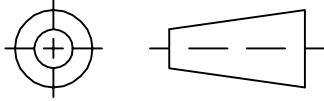
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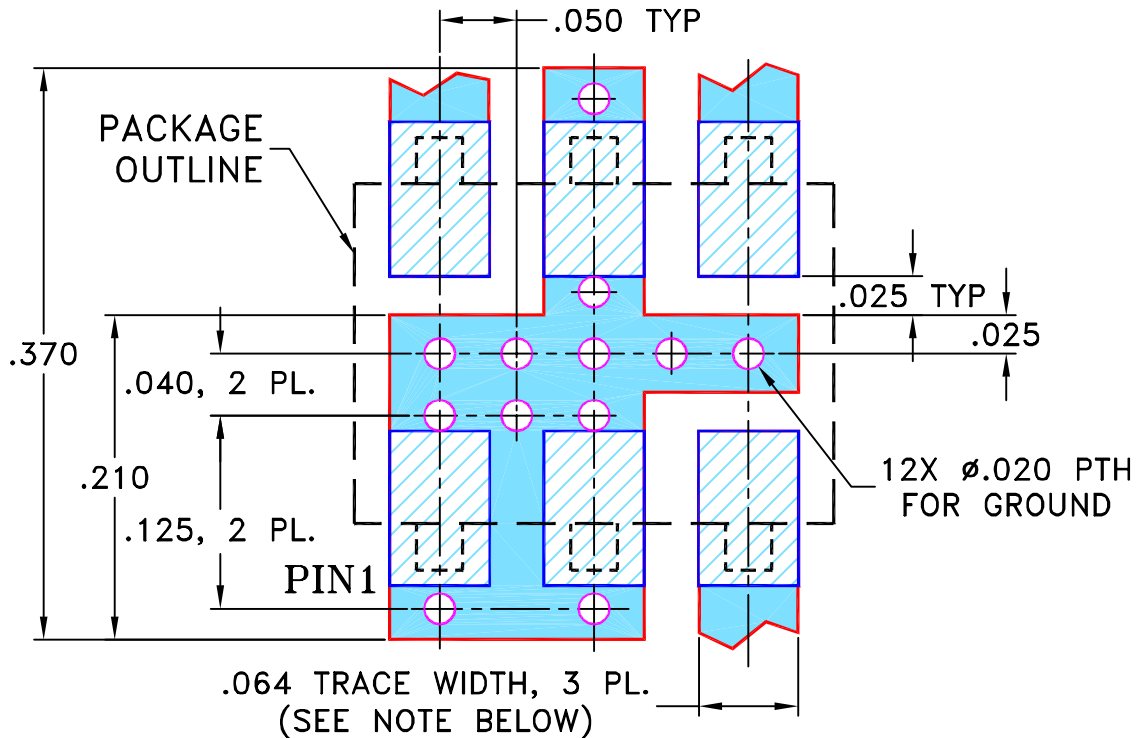
THIRD ANGLE PROJECTION



REVISIONS

| REV | ECN No. | DESCRIPTION                    | DATE     | DR  | AUTH |
|-----|---------|--------------------------------|----------|-----|------|
| OR  | M82272  | NEW RELEASE                    | 08/05/02 | MMG | DJ   |
| A   | M102713 | ADDED NOTE 2 & "...WITH SMOBC" | 01/17/06 | MMG | IL   |
|     |         |                                |          |     |      |

**SUGGESTED MOUNTING CONFIGURATION  
FOR CD541/542/636/637 CASE STYLES,  
"jv", "ju", "jw" PIN CONNECTIONS**



- 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

UNLESS OTHERWISE SPECIFIED

DIMENSIONS ARE IN INCHES  
TOLERANCES ON:  
2 PL DECIMALS ±  
3 PL DECIMALS ± .005  
ANGLES ±  
FRACTIONS ±

|          | INITIALS | DATE     |
|----------|----------|----------|
| DRAWN    | MMG      | 07/17/02 |
| CHECKED  | WL       | 08/02/02 |
| APPROVED | DJ       | 08/05/02 |



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PL, jv/ju/jw, CD541/542/636/637, ADE, TB-02

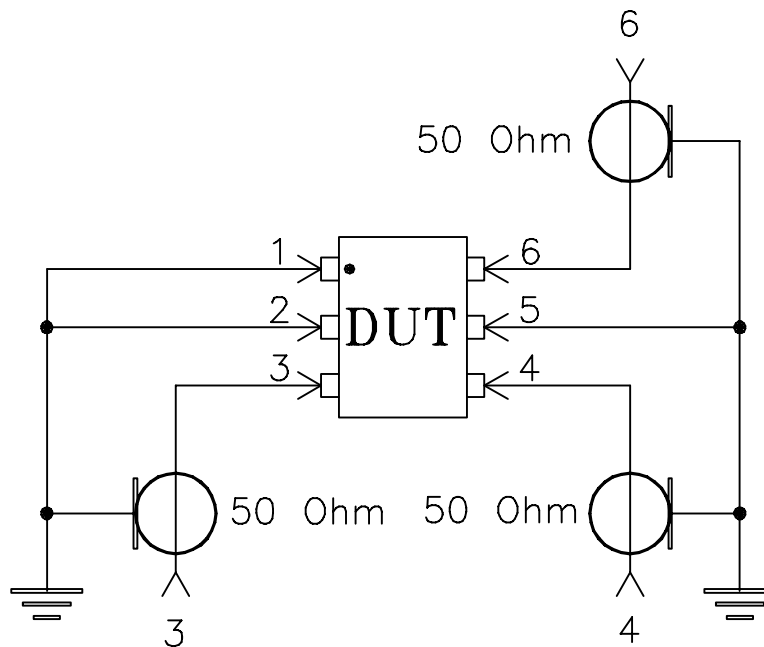
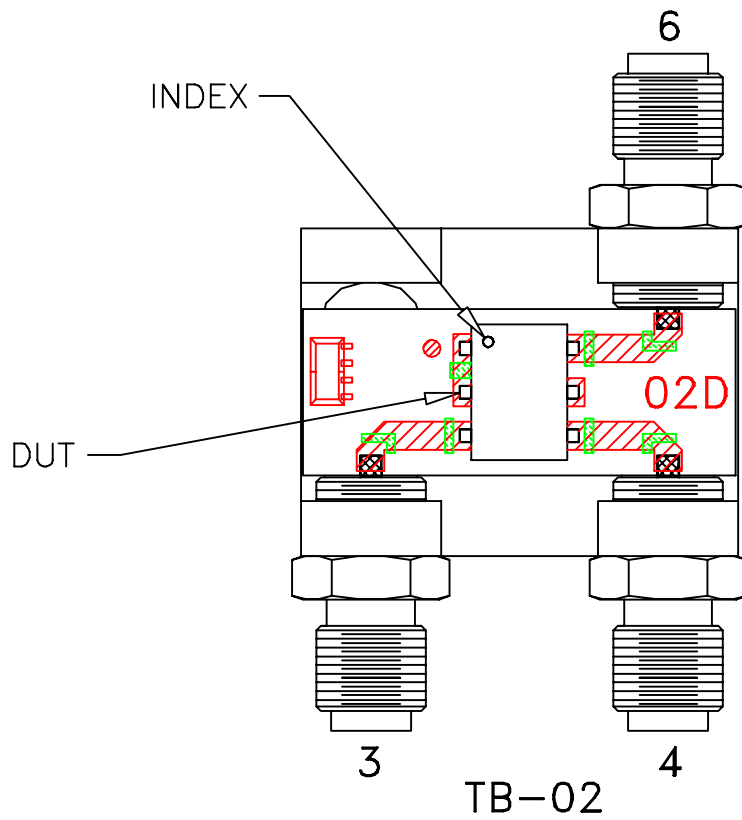
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ASHEETA1.DWG REV:A DATE:01/12/95

| SIZE  | CODE IDENT | DRAWING NO: | REV:          |
|-------|------------|-------------|---------------|
| A     | 15542      | 98-PL-051   | A             |
| FILE: | 98PL051    | SCALE: 8:1  | SHEET: 1 OF 1 |

# Evaluation Board and Circuit

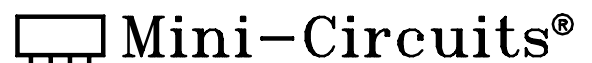
For Pin Connections refer to Data Sheet of the DUT



Schematic Diagram

## Notes:

1. SMA Female connectors.
2. PCB Material: Rogers R04350 or equivalent,  
Dielectric Constant=3.5, Thickness=.030 inch.





All Mini-Circuits products are manufactured under exacting quality assurance and control standards, and are capable of meeting published specifications after being subjected to any or all of the following physical and environmental test.

| Specification                  | Test/Inspection Condition   | Reference/Spec   |
|--------------------------------|---|--|
| Operating Temperature          | -40° to 85°C<br>Ambient Environment   | Individual Model Data Sheet  |
| Storage Temperature            | -55° to 100° C<br>Ambient Environment   | Individual Model Data Sheet  |
| Humidity                       | 90 to 95% RH, 240 hours, 50°C   | MIL-STD-202, Method 103, Condition A, Except 50°C and end-point electrical test done within 12 hours |
| Thermal Shock                  | -55° to 100°C, 100 cycles   | MIL-STD-202, Method 107, Condition A-3, except +100°C  |
| Solder Reflow Heat             | Sn-Pb Eutetic Process: 225°C peak<br>Pb-Free Process 245° - 250°C peak  | J-STD-020, Table 4-1, 4-2 and 5-2, Figure 5-1  |
| Solderability                  | 10X Magnification   | J-STD-002, 95% Coverage  |
| Vibration (High Frequency)     | 20g peak, 10-2000 Hz, 12 times in each of three perpendicular directions (total 36)   | MIL-STD-202, Method 204, Condition D   |
| Mechanical Shock               | 50g, 11 ms, 1/2-sine, 18 shocks: 3 each direction, each of 3 axes   | MIL-STD-202, Method 213, Condition A   |
| Marking Resistance to Solvents | Isopropyl alcohol + mineral spirits at 25°C; terpene defluxer at 25°C;<br>distilled water + proylene glycol monomethyl ether + monoethanolamine at 63°C to 70°C | MIL-STD-202, Method 215  |