

APPLICATION NOTE



RF POWER SEMICONDUCTORS

Document NO. AN-UHF-085-A

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SUBJECT: RD01MUS2 & RD07MVS1B RF characteristic data at $V_{ds}=7.2V$, 400-470 MHz.

SUMMARY:

This application note shows the RF Broad band characteristic data (Po vs. Frequency Characteristics) at $V_{ds}=7.2V$, 400-470 MHz.

- Sample history :
 - RD01MUS2: Lot number "634"
 - RD07MVS1B: Lot number "068YD"

- Evaluating nominal conditions :
 - $f=400-470MHz$: $V_{ds1}=V_{ds2}=7.2V$, $V_{gs1}=V_{gs2}=3.5V$

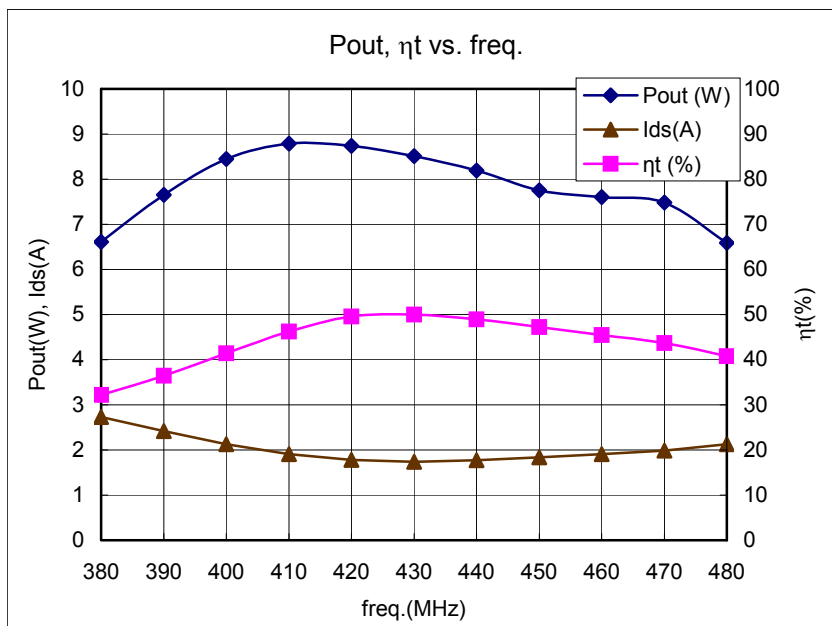
- Results :
 - Page 2 shows the P_{out} , η_t , R.L. 2fo, 3fo vs. frequency characteristics.
 - Page 3 shows the P_{out} , η_t , R.L. 2fo, 3fo vs. Pin characteristics.
 - Page 4 shows the P_{out} , η_t , R.L. 2fo, 3fo vs. Vgs characteristics.
 - Page 5 shows the P_{out} , η_t , R.L. 2fo, 3fo vs. Vds characteristics.
 - Page 6 shows the Test Circuit.
 - Page 7 shows the Test board view.

1) Pout, η_t , R.L. 2fo, 3fo vs. frequency characteristics (@ f=400-470MHz)

Conditions: Vds=7.2V, Vgs=3.5V, Pin=15dBm at Pout measure.

Adjusted to 6.3W by varying Vgs at Ids, ht, R.L., 2fo, 3fo measure.

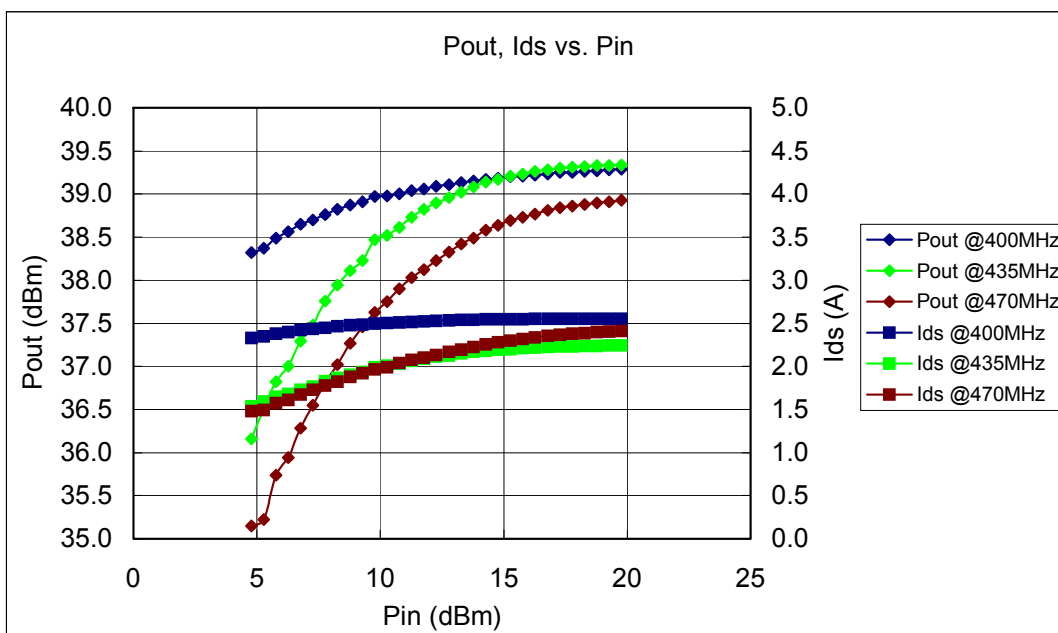
| f (MHz) | Pout (W) | Vgs1=Vgs2 (V) | Ids= Ids1+Ids2 (A) | t (%) | R.L. (-) | 2fo (dBc) | 3fo (dBc) |
|------------|-------------|------------------|--------------------------|----------|-------------|--------------|--------------|
| 380 | 6.61 | 3.50 | 2.73 | 32.2 | 5.60 | -47.54 | -73.54 |
| 390 | 7.65 | 3.20 | 2.42 | 36.5 | 6.97 | -49.97 | -70.47 |
| 400 | 8.45 | 2.93 | 2.13 | 41.4 | 9.06 | -52.08 | -69.24 |
| 410 | 8.79 | 2.76 | 1.91 | 46.3 | 12.94 | -52.34 | -67.34 |
| 420 | 8.74 | 2.70 | 1.78 | 49.6 | 11.93 | -53.49 | -69.99 |
| 430 | 8.51 | 2.82 | 1.74 | 50.0 | 9.38 | -54.75 | -71.41 |
| 440 | 8.19 | 2.98 | 1.77 | 48.9 | 8.93 | -56.24 | -68.24 |
| 450 | 7.75 | 3.13 | 1.84 | 47.3 | 9.37 | -58.55 | -64.38 |
| 460 | 7.60 | 3.15 | 1.91 | 45.5 | 10.41 | -60.93 | -60.59 |
| 470 | 7.48 | 3.17 | 1.99 | 43.7 | 11.92 | -60.03 | -58.20 |
| 480 | 6.59 | 3.45 | 2.13 | 40.8 | 8.79 | -60.27 | -57.27 |



2) Pout, η , R.L. 2fo, 3fo vs. Pin characteristics (@ f=400/ 435/ 470MHz)

Conditions: Vds=7.2V, Vgs=3.5V, Pin=4 to 20dBm

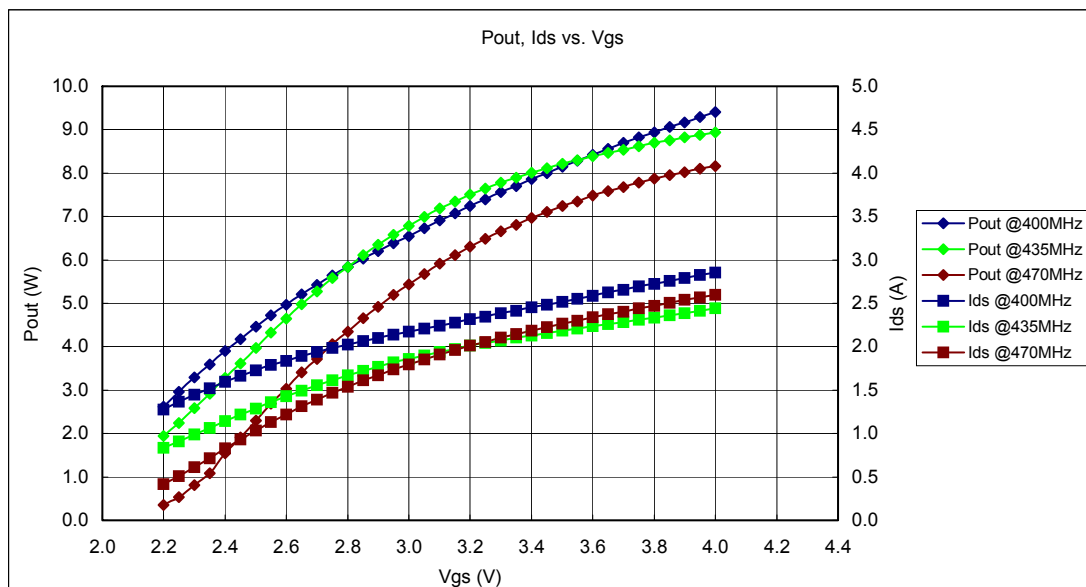
| Pin (dBm) | freq.=400MHz | | | | | freq.=435MHz | | | | | freq.=470MHz | | | | |
|--------------|---------------|-------------|---|--------------|--------------|---------------|-------------|---|--------------|--------------|---------------|-------------|---|--------------|--------------|
| | Pout (dBm) | Pout (W) | I _{ds1} +I _{ds2} (A) | 2fo (dBc) | 3fo (dBc) | Pout (dBm) | Pout (W) | I _{ds1} +I _{ds2} (A) | 2fo (dBc) | 3fo (dBc) | Pout (dBm) | Pout (W) | I _{ds1} +I _{ds2} (A) | 2fo (dBc) | 3fo (dBc) |
| 4.77 | 38.32 | 6.79 | 2.33 | -52.9 | -65.2 | 36.16 | 4.13 | 1.53 | -54.9 | -56.1 | 35.15 | 3.27 | 1.48 | -61.0 | -63.3 |
| 5.27 | 38.37 | 6.87 | 2.35 | -53.1 | -65.6 | 36.50 | 4.47 | 1.59 | -55.1 | -56.3 | 35.22 | 3.33 | 1.49 | -61.0 | -63.8 |
| 5.77 | 38.49 | 7.06 | 2.38 | -53.4 | -64.9 | 36.82 | 4.81 | 1.65 | -54.6 | -55.8 | 35.74 | 3.75 | 1.57 | -60.5 | -62.0 |
| 6.27 | 38.56 | 7.18 | 2.40 | -53.6 | -65.1 | 37.00 | 5.01 | 1.68 | -54.9 | -55.9 | 35.94 | 3.93 | 1.61 | -60.0 | -61.3 |
| 6.77 | 38.65 | 7.33 | 2.42 | -53.7 | -64.9 | 37.29 | 5.36 | 1.73 | -54.6 | -70.8 | 36.28 | 4.25 | 1.68 | -60.0 | -60.7 |
| 7.27 | 38.70 | 7.41 | 2.44 | -53.7 | -64.6 | 37.48 | 5.60 | 1.77 | -54.4 | -69.8 | 36.55 | 4.52 | 1.73 | -59.5 | -60.2 |
| 7.77 | 38.76 | 7.52 | 2.45 | -54.1 | -64.7 | 37.76 | 5.97 | 1.83 | -54.8 | -70.6 | 36.80 | 4.79 | 1.78 | -58.9 | -60.0 |
| 8.27 | 38.82 | 7.62 | 2.46 | -54.1 | -64.7 | 37.94 | 6.22 | 1.87 | -54.8 | -70.4 | 37.02 | 5.04 | 1.82 | -59.2 | -60.0 |
| 8.77 | 38.87 | 7.71 | 2.48 | -54.2 | -64.6 | 38.11 | 6.47 | 1.90 | -54.8 | -69.1 | 37.27 | 5.33 | 1.88 | -58.0 | -59.7 |
| 9.27 | 38.91 | 7.78 | 2.49 | -54.2 | -64.4 | 38.23 | 6.65 | 1.93 | -54.9 | -70.1 | 37.46 | 5.57 | 1.92 | -57.9 | -59.7 |
| 9.77 | 38.97 | 7.89 | 2.50 | -54.2 | -64.7 | 38.47 | 7.03 | 1.99 | -54.8 | -69.9 | 37.63 | 5.79 | 1.96 | -57.5 | -59.5 |
| 10.27 | 38.98 | 7.91 | 2.50 | -54.6 | -64.4 | 38.52 | 7.11 | 2.01 | -54.9 | -69.8 | 37.75 | 5.96 | 1.99 | -57.5 | -59.3 |
| 10.77 | 39.00 | 7.94 | 2.51 | -54.7 | -64.4 | 38.61 | 7.26 | 2.03 | -54.8 | -69.9 | 37.90 | 6.17 | 2.04 | -57.4 | -59.3 |
| 11.27 | 39.04 | 8.02 | 2.52 | -54.9 | -64.6 | 38.73 | 7.46 | 2.06 | -54.8 | -70.1 | 38.03 | 6.35 | 2.08 | -57.2 | -59.3 |
| 11.77 | 39.06 | 8.05 | 2.52 | -54.7 | -64.4 | 38.82 | 7.62 | 2.09 | -54.9 | -69.8 | 38.12 | 6.49 | 2.10 | -56.9 | -59.0 |
| 12.27 | 39.09 | 8.11 | 2.53 | -54.9 | -64.7 | 38.90 | 7.76 | 2.11 | -54.9 | -69.8 | 38.23 | 6.65 | 2.13 | -56.7 | -58.8 |
| 12.77 | 39.11 | 8.15 | 2.53 | -54.9 | -64.9 | 38.96 | 7.87 | 2.13 | -54.9 | -69.1 | 38.33 | 6.81 | 2.17 | -56.7 | -59.0 |
| 13.27 | 39.13 | 8.18 | 2.54 | -55.1 | -64.6 | 39.02 | 7.98 | 2.15 | -54.8 | -69.8 | 38.42 | 6.95 | 2.20 | -56.5 | -58.7 |
| 13.77 | 39.15 | 8.22 | 2.54 | -55.1 | -63.9 | 39.08 | 8.09 | 2.17 | -54.9 | -69.8 | 38.49 | 7.06 | 2.22 | -56.5 | -58.7 |
| 14.27 | 39.17 | 8.26 | 2.54 | -55.1 | -64.1 | 39.14 | 8.20 | 2.18 | -54.9 | -69.4 | 38.58 | 7.21 | 2.26 | -56.2 | -58.8 |
| 14.77 | 39.18 | 8.28 | 2.55 | -55.1 | -64.4 | 39.17 | 8.26 | 2.19 | -55.1 | -70.1 | 38.64 | 7.31 | 2.28 | -56.4 | -58.7 |
| 15.27 | 39.20 | 8.32 | 2.55 | -55.1 | -64.4 | 39.21 | 8.34 | 2.20 | -55.1 | -70.3 | 38.69 | 7.40 | 2.30 | -56.2 | -58.5 |
| 15.77 | 39.21 | 8.34 | 2.55 | -55.2 | -64.1 | 39.23 | 8.38 | 2.21 | -55.1 | -69.3 | 38.73 | 7.46 | 2.32 | -56.4 | -58.8 |
| 16.27 | 39.22 | 8.36 | 2.55 | -55.2 | -64.7 | 39.26 | 8.43 | 2.22 | -55.3 | -69.9 | 38.77 | 7.53 | 2.34 | -56.2 | -58.5 |
| 16.77 | 39.23 | 8.38 | 2.55 | -55.2 | -64.1 | 39.28 | 8.47 | 2.22 | -55.1 | -70.4 | 38.81 | 7.60 | 2.35 | -56.4 | -58.7 |
| 17.27 | 39.25 | 8.41 | 2.55 | -55.2 | -64.2 | 39.30 | 8.51 | 2.23 | -54.9 | -69.8 | 38.84 | 7.66 | 2.37 | -56.4 | -58.5 |
| 17.77 | 39.25 | 8.41 | 2.55 | -55.4 | -64.2 | 39.31 | 8.53 | 2.23 | -55.1 | -70.1 | 38.86 | 7.69 | 2.38 | -56.2 | -58.5 |
| 18.27 | 39.26 | 8.43 | 2.55 | -55.2 | -63.7 | 39.32 | 8.55 | 2.24 | -55.3 | -70.1 | 38.88 | 7.73 | 2.39 | -56.2 | -58.5 |
| 18.77 | 39.27 | 8.45 | 2.55 | -55.4 | -64.6 | 39.33 | 8.57 | 2.24 | -55.1 | -70.8 | 38.90 | 7.76 | 2.40 | -56.2 | -58.3 |
| 19.27 | 39.28 | 8.47 | 2.55 | -55.4 | -64.9 | 39.33 | 8.57 | 2.24 | -55.3 | -70.4 | 38.91 | 7.78 | 2.40 | -56.0 | -58.3 |
| 19.77 | 39.29 | 8.49 | 2.55 | -55.6 | -64.9 | 39.34 | 8.59 | 2.24 | -55.1 | -70.6 | 38.93 | 7.82 | 2.41 | -56.2 | -58.3 |



3) Pout, ηt, R.L. 2fo, 3fo vs. Vgs characteristics (@ f=400/ 435/ 470MHz)

Conditions: Vds=7.2V, Vgs=2.2 to 4.0V, Pin=15dBm

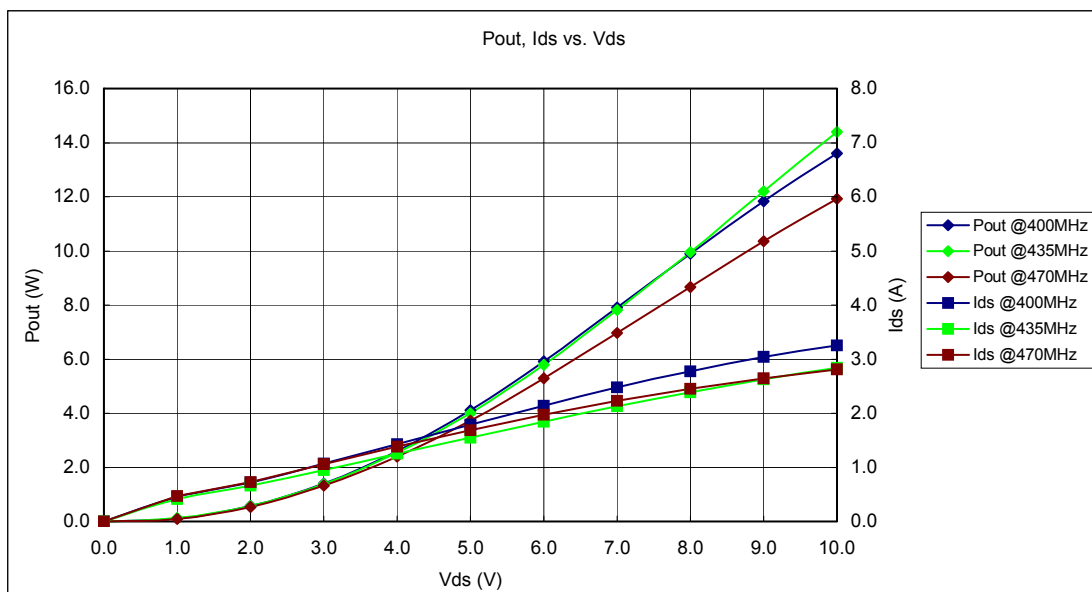
| Vgs (V) | freq.=400MHz | | | | | freq.=435MHz | | | | | freq.=470MHz | | | | |
|------------|--------------|------------------|--------------|--------------|--------------|--------------|------------------|--------------|--------------|--------------|--------------|------------------|--------------|--------------|--------------|
| | Pout (W) | Ids1+Ids2 (A) | R.L. (dB) | 2fo (dBc) | 3fo (dBc) | Pout (W) | Ids1+Ids2 (A) | R.L. (dB) | 2fo (dBc) | 3fo (dBc) | Pout (W) | Ids1+Ids2 (A) | R.L. (dB) | 2fo (dBc) | 3fo (dBc) |
| 2.20 | 2.62 | 1.28 | 5.39 | -43.5 | <-70 | 1.94 | 0.84 | 8.13 | -52.8 | <-70 | 0.36 | 0.42 | 9.18 | <-70 | -59.3 |
| 2.25 | 2.96 | 1.37 | 5.60 | -44.3 | <-70 | 2.24 | 0.91 | 8.21 | -53.3 | <-70 | 0.54 | 0.51 | 9.27 | <-70 | -62.3 |
| 2.30 | 3.29 | 1.45 | 5.82 | -44.7 | <-70 | 2.59 | 0.99 | 8.23 | -53.7 | <-70 | 0.81 | 0.61 | 9.43 | <-70 | -63.5 |
| 2.35 | 3.59 | 1.52 | 6.04 | -45.5 | <-70 | 2.92 | 1.07 | 8.30 | -54.0 | <-70 | 1.08 | 0.71 | 9.59 | <-70 | -63.0 |
| 2.40 | 3.90 | 1.60 | 6.28 | -46.0 | <-70 | 3.28 | 1.15 | 8.34 | -54.3 | <-70 | 1.54 | 0.83 | 9.78 | <-70 | -62.2 |
| 2.45 | 4.18 | 1.66 | 6.46 | -46.5 | -69.3 | 3.61 | 1.22 | 8.40 | -54.2 | <-70 | 1.91 | 0.93 | 10.00 | <-70 | -67.2 |
| 2.50 | 4.46 | 1.73 | 6.74 | -47.0 | -69.2 | 3.97 | 1.29 | 8.48 | -54.2 | <-70 | 2.30 | 1.04 | 10.16 | <-70 | -67.3 |
| 2.55 | 4.73 | 1.79 | 6.99 | -47.3 | -68.3 | 4.32 | 1.36 | 8.55 | -54.3 | -69.5 | 2.69 | 1.13 | 10.43 | <-70 | -64.8 |
| 2.60 | 4.96 | 1.84 | 7.19 | -47.8 | -68.3 | 4.64 | 1.43 | 8.66 | -54.8 | -71.2 | 3.03 | 1.22 | 10.57 | <-70 | -64.0 |
| 2.65 | 5.21 | 1.89 | 7.49 | -48.5 | -68.0 | 4.98 | 1.50 | 8.73 | -55.0 | -70.0 | 3.41 | 1.31 | 10.80 | <-70 | -62.5 |
| 2.70 | 5.42 | 1.94 | 7.75 | -48.8 | -68.0 | 5.27 | 1.56 | 8.80 | -55.3 | -70.8 | 3.72 | 1.39 | 10.97 | <-70 | -61.7 |
| 2.75 | 5.64 | 1.98 | 8.04 | -49.2 | -67.3 | 5.58 | 1.62 | 8.88 | -55.2 | -69.7 | 4.06 | 1.47 | 11.17 | <-70 | -61.8 |
| 2.80 | 5.83 | 2.02 | 8.28 | -49.3 | -67.3 | 5.84 | 1.67 | 8.99 | -55.5 | -69.7 | 4.35 | 1.54 | 11.31 | <-70 | -61.2 |
| 2.85 | 6.03 | 2.06 | 8.64 | -49.8 | -67.7 | 6.11 | 1.72 | 9.06 | -55.7 | -70.5 | 4.66 | 1.61 | 11.49 | <-70 | -59.8 |
| 2.90 | 6.20 | 2.10 | 8.94 | -50.3 | -66.8 | 6.35 | 1.77 | 9.14 | -55.8 | -68.7 | 4.92 | 1.67 | 11.62 | <-70 | -59.3 |
| 2.95 | 6.39 | 2.14 | 9.26 | -50.7 | -67.2 | 6.58 | 1.82 | 9.25 | -55.8 | -69.7 | 5.20 | 1.74 | 11.75 | <-70 | -59.0 |
| 3.00 | 6.55 | 2.17 | 9.57 | -51.0 | -65.8 | 6.79 | 1.86 | 9.39 | -55.8 | -68.8 | 5.44 | 1.80 | 11.86 | <-70 | -58.7 |
| 3.05 | 6.73 | 2.21 | 9.95 | -51.3 | -67.2 | 6.99 | 1.90 | 9.48 | -56.0 | -69.0 | 5.68 | 1.86 | 11.95 | <-70 | -58.5 |
| 3.10 | 6.91 | 2.25 | 10.28 | -51.8 | -66.3 | 7.18 | 1.94 | 9.56 | -56.2 | -69.7 | 5.92 | 1.91 | 12.02 | <-70 | -58.2 |
| 3.15 | 7.07 | 2.28 | 10.59 | -52.3 | -66.5 | 7.34 | 1.98 | 9.66 | -56.5 | -70.3 | 6.11 | 1.96 | 12.08 | <-70 | -58.3 |
| 3.20 | 7.24 | 2.32 | 10.90 | -52.7 | -66.5 | 7.51 | 2.01 | 9.74 | -56.3 | -69.0 | 6.31 | 2.01 | 12.09 | <-70 | -58.2 |
| 3.25 | 7.39 | 2.35 | 11.17 | -53.2 | -66.2 | 7.64 | 2.04 | 9.88 | -56.5 | -70.3 | 6.49 | 2.06 | 12.12 | <-70 | -57.8 |
| 3.30 | 7.56 | 2.38 | 11.44 | -53.3 | -66.7 | 7.78 | 2.07 | 9.96 | -56.7 | -70.0 | 6.66 | 2.10 | 12.12 | <-70 | -58.0 |
| 3.35 | 7.70 | 2.42 | 11.68 | -53.8 | -66.0 | 7.90 | 2.10 | 10.07 | -56.5 | -70.0 | 6.81 | 2.14 | 12.11 | <-70 | -58.0 |
| 3.40 | 7.86 | 2.45 | 11.91 | -54.2 | -66.0 | 8.01 | 2.13 | 10.16 | -56.7 | -70.3 | 6.97 | 2.19 | 12.01 | <-70 | -57.7 |
| 3.45 | 8.00 | 2.49 | 12.13 | -54.5 | -65.7 | 8.11 | 2.16 | 10.20 | -56.8 | -70.7 | 7.10 | 2.22 | 11.95 | <-70 | -58.0 |
| 3.50 | 8.15 | 2.52 | 12.35 | -55.2 | -66.3 | 8.22 | 2.18 | 10.32 | -56.8 | -70.5 | 7.24 | 2.27 | 11.87 | <-70 | -58.0 |
| 3.55 | 8.28 | 2.55 | 12.54 | -55.3 | -65.7 | 8.30 | 2.21 | 10.41 | -56.8 | -70.3 | 7.35 | 2.30 | 11.78 | <-70 | -57.7 |
| 3.60 | 8.42 | 2.59 | 12.68 | -56.0 | -65.8 | 8.39 | 2.24 | 10.49 | -56.8 | -70.7 | 7.48 | 2.34 | 11.63 | <-70 | -57.7 |
| 3.65 | 8.56 | 2.63 | 12.90 | -56.3 | -65.3 | 8.47 | 2.26 | 10.55 | -57.0 | -71.7 | 7.59 | 2.38 | 11.53 | <-70 | -57.8 |
| 3.70 | 8.69 | 2.66 | 13.04 | -56.7 | -65.8 | 8.54 | 2.29 | 10.55 | -57.0 | -71.0 | 7.68 | 2.41 | 11.42 | <-70 | -58.0 |
| 3.75 | 8.82 | 2.69 | 13.23 | -57.2 | -65.3 | 8.62 | 2.31 | 10.65 | -57.0 | -71.0 | 7.78 | 2.44 | 11.31 | <-70 | -58.0 |
| 3.80 | 8.94 | 2.72 | 13.33 | -57.8 | -65.2 | 8.69 | 2.34 | 10.71 | -57.0 | -71.5 | 7.87 | 2.47 | 11.15 | <-70 | -58.2 |
| 3.85 | 9.06 | 2.76 | 13.50 | -58.2 | -65.7 | 8.75 | 2.36 | 10.76 | -57.0 | -72.3 | 7.95 | 2.51 | 11.09 | <-70 | -58.2 |
| 3.90 | 9.17 | 2.79 | 13.63 | -58.7 | -65.5 | 8.82 | 2.39 | 10.75 | -57.3 | -71.8 | 8.02 | 2.54 | 11.01 | <-70 | -58.2 |
| 3.95 | 9.29 | 2.83 | 13.77 | -59.2 | -65.3 | 8.88 | 2.42 | 10.84 | -57.2 | -71.5 | 8.10 | 2.57 | 10.91 | <-70 | -58.2 |
| 4.00 | 9.40 | 2.86 | 13.87 | -59.7 | -65.7 | 8.94 | 2.44 | 10.87 | -57.3 | -71.7 | 8.16 | 2.60 | 10.78 | <-70 | -58.5 |



4) Pout, η_t , R.L. 2fo, 3fo vs. Vds characteristics (@ f=400/ 435/ 470MHz)

Conditions: Vds=0 to 10V, Vgs=3.5V, Pin=15dBm

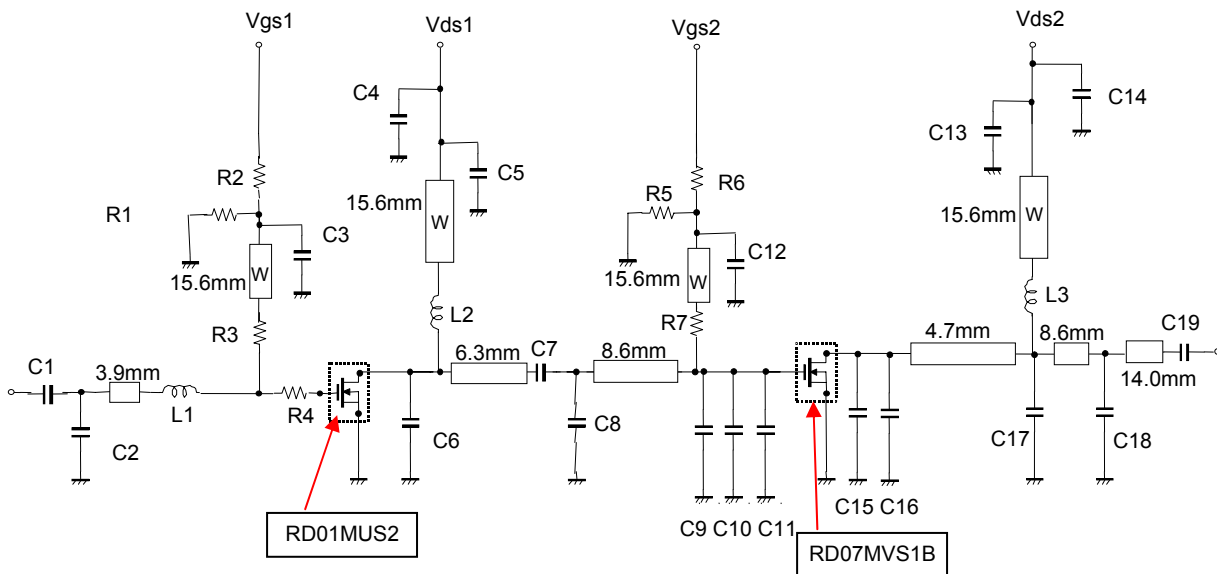
| Vds (V) | freq.=400MHz | | | | | freq.=435MHz | | | | | freq.=470MHz | | | | |
|------------|--------------|------------------|--------------|--------------|--------------|--------------|------------------|--------------|--------------|--------------|--------------|------------------|--------------|--------------|--------------|
| | Pout (W) | Ids1+Ids2 (A) | R.L. (dB) | 2fo (dBc) | 3fo (dBc) | Pout (W) | Ids1+Ids2 (A) | R.L. (dB) | 2fo (dBc) | 3fo (dBc) | Pout (W) | Ids1+Ids2 (A) | R.L. (dB) | 2fo (dBc) | 3fo (dBc) |
| 0.00 | 0.00 | 0.00 | 6.87 | <-70 | <-70 | 0.00 | 0.00 | 9.30 | <-70 | <-70 | 0.00 | 0.00 | 11.13 | <-70 | <-70 |
| 1.00 | 0.11 | 0.45 | 7.83 | <-70 | <-70 | 0.13 | 0.42 | 10.79 | <-70 | <-70 | 0.09 | 0.47 | 11.52 | <-70 | <-70 |
| 2.00 | 0.58 | 0.72 | 8.68 | -59.0 | <-70 | 0.56 | 0.66 | 11.40 | <-70 | <-70 | 0.54 | 0.73 | 11.30 | <-70 | -62.2 |
| 3.00 | 1.40 | 1.07 | 9.47 | -56.8 | <-70 | 1.38 | 0.95 | 11.53 | -65.0 | <-70 | 1.32 | 1.06 | 11.10 | <-70 | -61.0 |
| 4.00 | 2.60 | 1.43 | 10.19 | -56.3 | <-70 | 2.54 | 1.25 | 11.36 | -61.7 | -68.0 | 2.40 | 1.39 | 11.09 | -63.3 | -60.2 |
| 5.00 | 4.11 | 1.79 | 10.82 | -55.8 | -70.0 | 4.00 | 1.55 | 11.03 | -59.5 | -68.8 | 3.73 | 1.69 | 11.04 | -62.5 | -59.5 |
| 6.00 | 5.92 | 2.14 | 11.35 | -55.5 | -67.5 | 5.79 | 1.85 | 10.40 | -58.2 | -69.8 | 5.29 | 1.97 | 11.10 | -60.8 | -58.7 |
| 7.00 | 7.90 | 2.48 | 11.79 | -55.2 | -66.0 | 7.82 | 2.13 | 10.05 | -57.0 | -70.7 | 6.97 | 2.23 | 11.23 | -59.8 | -58.0 |
| 8.00 | 9.90 | 2.78 | 12.07 | -54.8 | -64.7 | 9.96 | 2.39 | 9.80 | -56.0 | -71.7 | 8.67 | 2.45 | 11.39 | -59.0 | -57.5 |
| 9.00 | 11.84 | 3.04 | 12.30 | -54.0 | -63.8 | 12.20 | 2.63 | 9.71 | -54.8 | -73.3 | 10.36 | 2.65 | 11.54 | -58.5 | -56.8 |
| 10.00 | 13.60 | 3.26 | 12.51 | -53.3 | -62.3 | 14.40 | 2.84 | 9.64 | -53.7 | -75.0 | 11.93 | 2.81 | 11.62 | -57.7 | -56.5 |



RD01MUS2 & RD07MVS1B 2stage amplifier RF characteristics data

AN-UHF-085-A

- Test Circuit



Note: Board material- Glass epoxy copper-clad laminates FR-4 (90 mm x 40 mm)
 Micro strip line width=1.3mm, er=4.8, t=0.8mm
 W: Line width=1.0mm

| Parts Number | Value | Type number | Vender |
|--------------|--|--------------------|--|
| C1 | 100pF | GRM1882C1H101GD01E | Murata Manufacturing Co., Ltd. |
| C2 | 13pF | GRM1882C1H130GD01E | Murata Manufacturing Co., Ltd. |
| C3 | 1000pF | GRM188R11H102KA01E | Murata Manufacturing Co., Ltd. |
| C4 | 33uF | UMT1H330MDD | NICHICON CORPORATION |
| C5 | 1000pF | GRM188R11H102KA01E | Murata Manufacturing Co., Ltd. |
| C6 | 18pF | GRM1882C1H180GD01E | Murata Manufacturing Co., Ltd. |
| C7 | 39pF | GRM1882C1H390GD01E | Murata Manufacturing Co., Ltd. |
| C8 | 12pF | GRM1882C1H120GD01E | Murata Manufacturing Co., Ltd. |
| C9 | 47pF | GRM1882C1H470GD01E | Murata Manufacturing Co., Ltd. |
| C10 | 20pF | GRM1882C1H200GD01E | Murata Manufacturing Co., Ltd. |
| C11 | 13pF | GRM1882C1H130GD01E | Murata Manufacturing Co., Ltd. |
| C12 | 1000pF | GRM188R11H102KA01E | Murata Manufacturing Co., Ltd. |
| C13 | 1000pF | GRM188R11H102KA01E | Murata Manufacturing Co., Ltd. |
| C14 | 33uF | UMT1H330MDD | NICHICON CORPORATION |
| C15 | 47pF | GRM2162C1H470GD01E | Murata Manufacturing Co., Ltd. |
| C16 | 47pF | GRM2162C1H470GD01E | Murata Manufacturing Co., Ltd. |
| C17 | 4pF | GRM1882C1H040BD01E | Murata Manufacturing Co., Ltd. |
| C18 | 20pF | GRM1882C1H200GD01E | Murata Manufacturing Co., Ltd. |
| C19 | 100pF | GRM1882C1H101GD01E | Murata Manufacturing Co., Ltd. |
| R1 | 56K ohm | RPC03 563J | Taiyosya Electronics |
| R2 | 13K ohm | RPC03 133J | Taiyosya Electronics |
| R3 | 1K ohm | RPC05 102J | Taiyosya Electronics |
| R4 | 12 ohm | RPC03 123J | Taiyosya Electronics |
| R5 | 51K ohm | RPC03 513J | Taiyosya Electronics |
| R6 | 16K ohm | RPC03 163J | Taiyosya Electronics |
| R7 | 1K ohm | RPC05 102J | Taiyosya Electronics |
| L1 | 8.2nH | ELJQF8N2J | Panasonic Electronic Devices Co., Ltd. |
| L2, L3 | 34.5nH Enameled wire 5 turns, Diameter:0.43mm, 2.46mm (outside diameter) | 4005A | Yoneda Processing Place Co.,Ltd. |

- Test Board View

