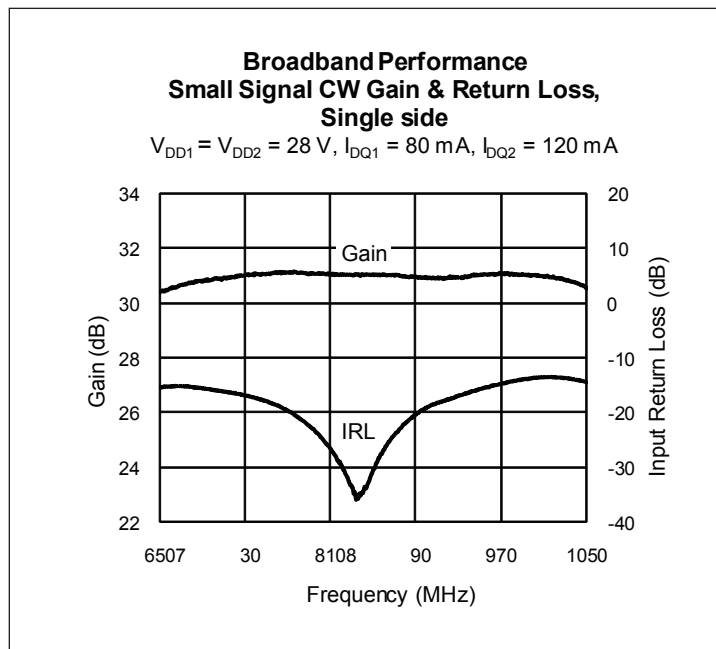


## Dual Wideband RF LDMOS Power Amplifier 30 W, 700 – 1000 MHz

### Description

The PTMA080304M integrates two wideband 2-stage LDMOS integrated amplifier in a 20-lead plastic package. It is designed for use in cellular amplifier applications in the 700 to 1000 MHz frequency band. Manufactured with Infineon's advanced LDMOS process, it offers excellent thermal performance and superior reliability.

PTMA080304M  
Package PG-DSO-20-63



### Features

- Typical channel isolation = 20 dB
- Typical CW single channel performance, 960 MHz, 28 V
  - $P_{OUT} = 20\text{ W}$
  - Efficiency = 50%
- Typical GSM / EDGE performance of each channel, 960 MHz, 28 V
  - Average output power = 8 W
  - Gain = 30 dB
  - Efficiency = 33%
  - EVM = 1.91%
  - ACPR @ 400 KHz = -63 dBc
  - ACPR @ 600 KHz = -76 dBc
- Capable of handling 10:1 VSWR @ 28 V, 15 W (CW) output power
- Integrated ESD protection. Meets HBM Class 1B (minimum), per JESD22-A114F
- RoHS compliant

### RF Characteristics

**Single-carrier WCDMA Measurements** (single side, not subject to production test—verified by design/characterization in Infineon test fixture)

$V_{DD} = 28\text{ V}$ ,  $I_{DQ1} = 80\text{ mA}$ ,  $I_{DQ2} = 120\text{ mA}$ ,  $P_{OUT} = 6\text{ W}$  average,  $f = 960\text{ MHz}$ , 3GPP signal, Test Model 1W/ 64DPCH, channel bandwidth = 3.84 MHz, peak/average = 7.5 dB @ 0.01% CCDF

| Characteristic             | Symbol   | Min | Typ | Max | Unit |
|----------------------------|----------|-----|-----|-----|------|
| Gain                       | $G_{ps}$ | —   | 31  | —   | dB   |
| Power Added Efficiency     | $\eta$   | —   | 31  | —   | %    |
| Intermodulation Distortion | IMD      | —   | -35 | —   | dBc  |

All published data at  $T_{CASE} = 25^{\circ}\text{C}$  unless otherwise indicated

**ESD:** Electrostatic discharge sensitive device—observe handling precautions!

**RF Characteristics** (cont.)

**Two-Tone Measurements** (combined outputs, tested in Infineon test fixture)

 $V_{DD} = 28\text{ V}$ ,  $I_{DQ1} = 2 \times 80\text{ mA}$ ,  $I_{DQ2} = 2 \times 120\text{ mA}$ ,  $P_{OUT} = 30\text{ W PEP}$ ,  $f = 960\text{ MHz}$ , tone spacing = 1 MHz

| Characteristic             | Symbol   | Min  | Typ  | Max | Unit |
|----------------------------|----------|------|------|-----|------|
| Gain                       | $G_{ps}$ | 29.5 | 30.5 | —   | dB   |
| Drain Efficiency           | $\eta_D$ | 33   | 34.5 | —   | %    |
| Intermodulation Distortion | IMD      | —    | -32  | -30 | dBc  |

**DC Characteristics**

| Characteristic                 | Conditions  | Symbol        | Min | Typ  | Max  | Unit          |
|--------------------------------|---|---------------|-----|------|------|---------------|
| Drain-Source Breakdown Voltage | $V_{GS} = 0\text{ V}$ , $I_{DS} = 10\text{ mA}$             | $V_{(BR)DSS}$ | 65  | —    | —    | V             |
| Drain Leakage Current          | $V_{DS} = 28\text{ V}$ , $V_{GS} = 0\text{ V}$              | $I_{DSS}$     | —   | —    | 1.0  | $\mu\text{A}$ |
|                                | $V_{DS} = 63\text{ V}$ , $V_{GS} = 0\text{ V}$              | $I_{DSS}$     | —   | —    | 10.0 | $\mu\text{A}$ |
| On-state Resistance            | Stage 1<br>$V_{DS} = 10\text{ V}$ , $V_{DS} = 0.1\text{ V}$ | $R_{DS(on)}$  | —   | 0.6  | —    | $\Omega$      |
|                                | Stage 2<br>$V_{GS} = 10\text{ V}$ , $V_{DS} = 0.1\text{ V}$ | $R_{DS(on)}$  | —   | 3.48 | —    | $\Omega$      |
| Operating Gate Voltage         | $V_{DS} = 28\text{ V}$ , $I_{DQ1} = 80\text{ mA}$ ,         | $V_{GS}$      | 2.0 | 2.5  | 3.0  | V             |
|                                | $V_{DS} = 28\text{ V}$ , $I_{DQ2} = 120\text{ mA}$          | $V_{GS}$      | 2.0 | —    | 3.0  | V             |
| Gate Leakage Current           | $V_{GS} = 10\text{ V}$ , $V_{DS} = 0\text{ V}$              | $I_{GSS}$     | —   | —    | 1.0  | $\mu\text{A}$ |

**Maximum Ratings**

| Parameter   | Symbol  | Value                                 | Unit               |                             |
|---|---|---------------------------------------|--------------------|-----------------------------|
| Drain-Source Voltage  | $V_{DSS}$   | 65                                    | V                  |                             |
| Gate-Source Voltage   | $V_{GS}$  | -0.5 to +12                           | V                  |                             |
| Junction Temperature  | $T_J$   | 200                                   | $^{\circ}\text{C}$ |                             |
| Input Power   | $P_{IN}$  | 11.5                                  | dBm                |                             |
| Total Device Dissipation  | $P_D$   | 91                                    | W                  |                             |
|   |   | Above 25 $^{\circ}\text{C}$ derate by | 0.52               | W/ $^{\circ}\text{C}$       |
| Storage Temperature Range   | $T_{STG}$   | -40 to +150                           | $^{\circ}\text{C}$ |                             |
| Overall Thermal Resistance ( $T_{CASE} = 70^{\circ}\text{C}$ ) of each chip | Stage 1   | $R_{\theta JC}$                       | 8.5                | $^{\circ}\text{C}/\text{W}$ |
|   | Stage 2<br>$P_{OUT} = 15\text{ W}$ , $I_{DQ1} = 70\text{ mA}$ , $I_{DQ2} = 110\text{ mA}$ | $R_{\theta JC}$                       | 2.5                | $^{\circ}\text{C}/\text{W}$ |

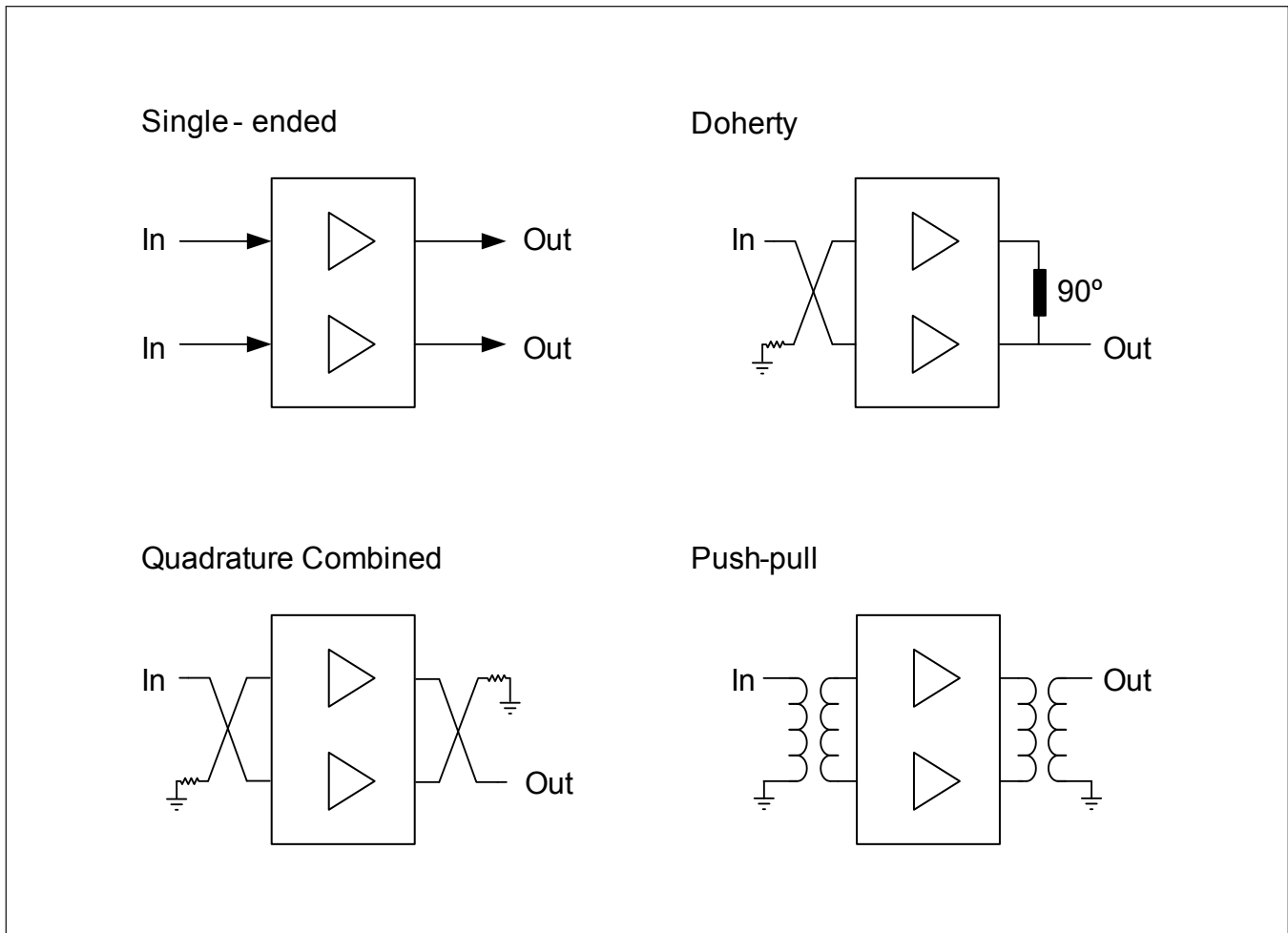
### Moisture Sensitivity Level

| Level | Test Standard       | Package Temperature | Unit |
|-------|---------------------|---------------------|------|
| 3     | IPC/JEDEC J-STD-020 | 260                 | °C   |

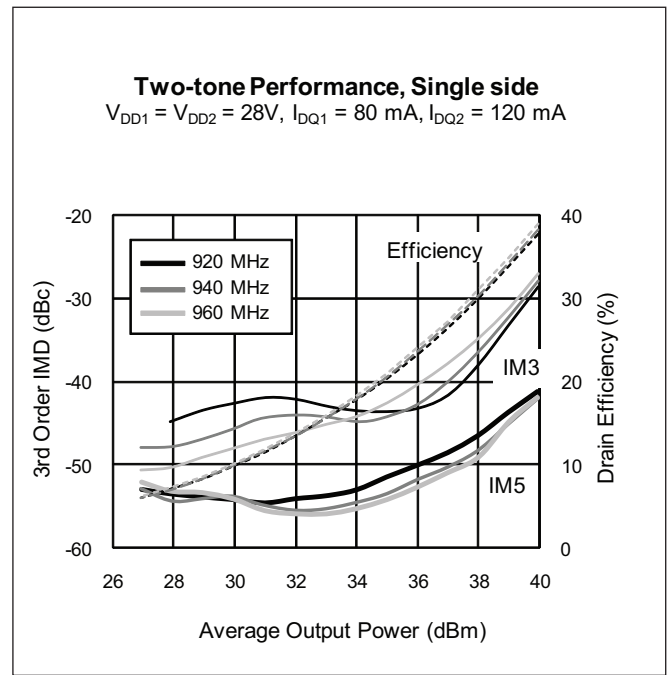
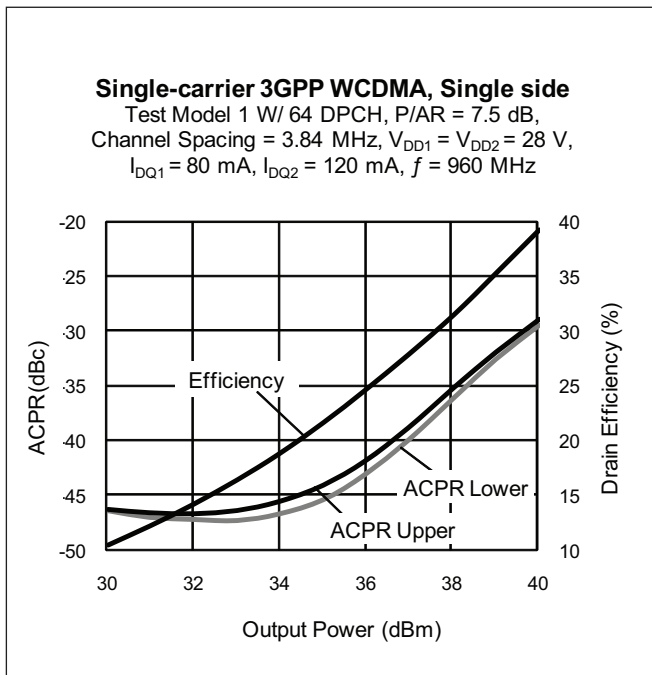
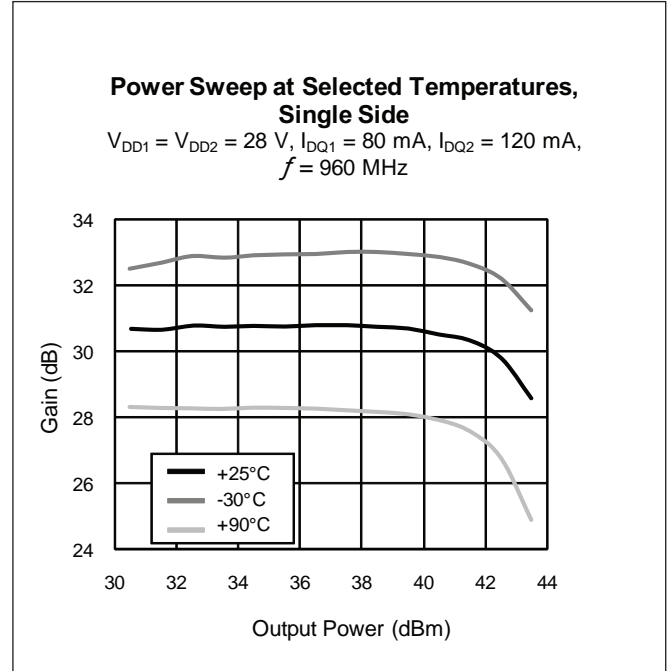
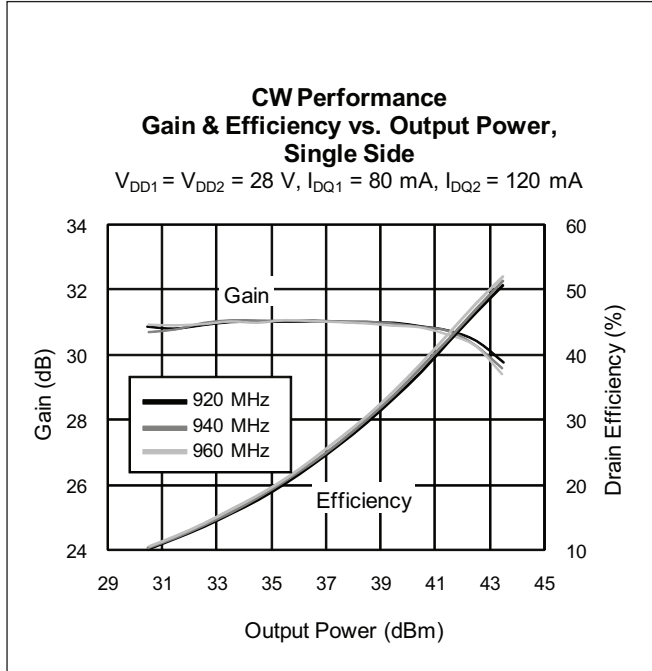
### Ordering Information

| Type and Version | Package Outline | Package Description | Shipping             |
|------------------|-----------------|---------------------|----------------------|
| PTMA080304M V1   | PG-DSO-20-63    | Molded plastic      | Tape & reel, 250 pcs |

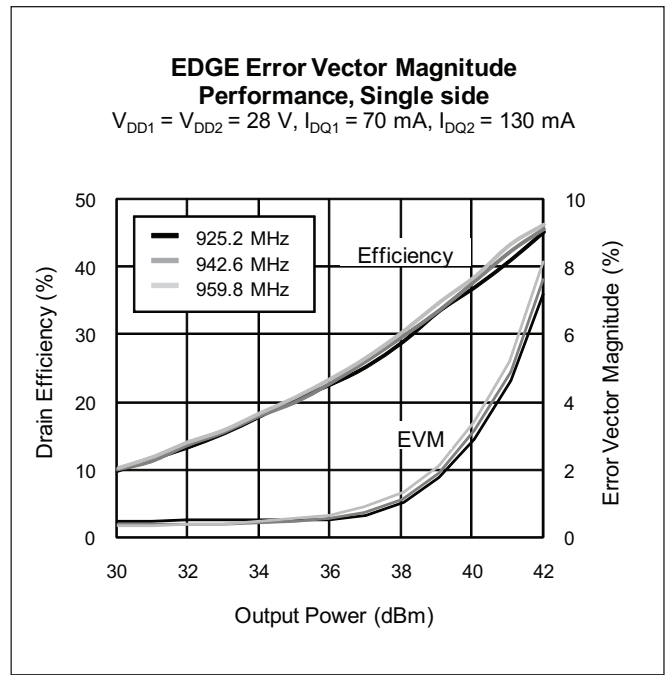
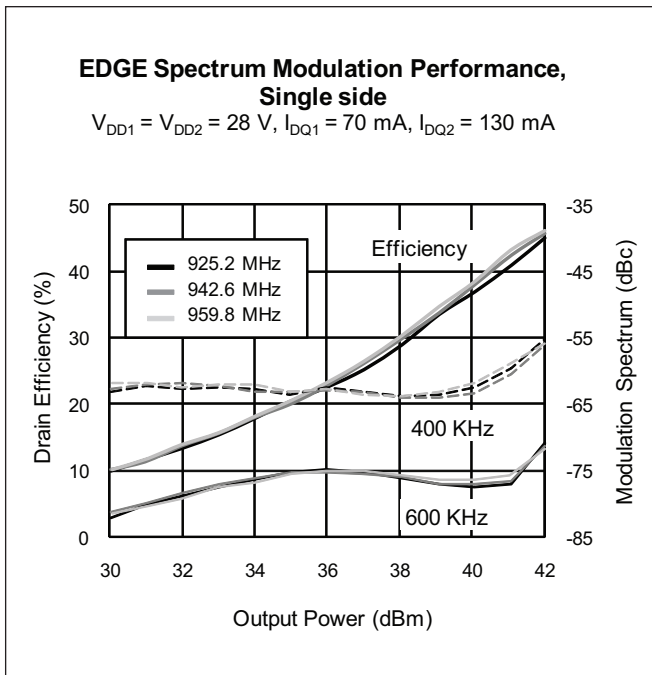
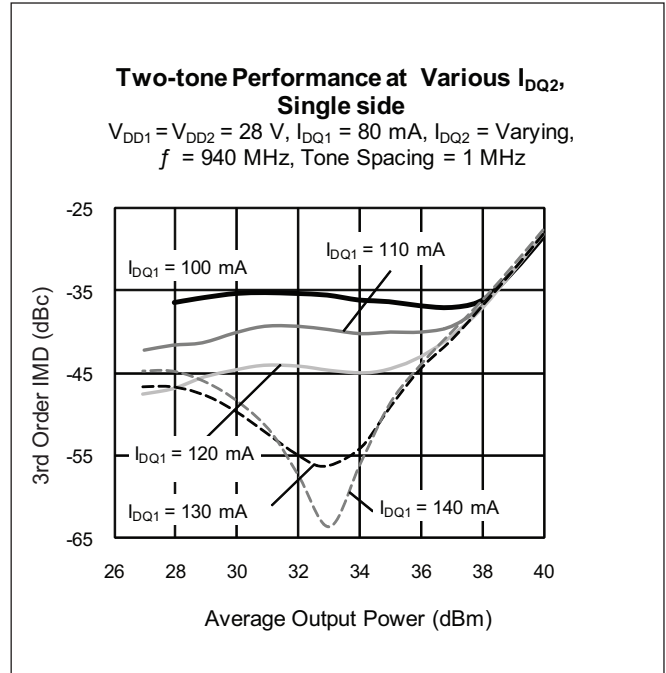
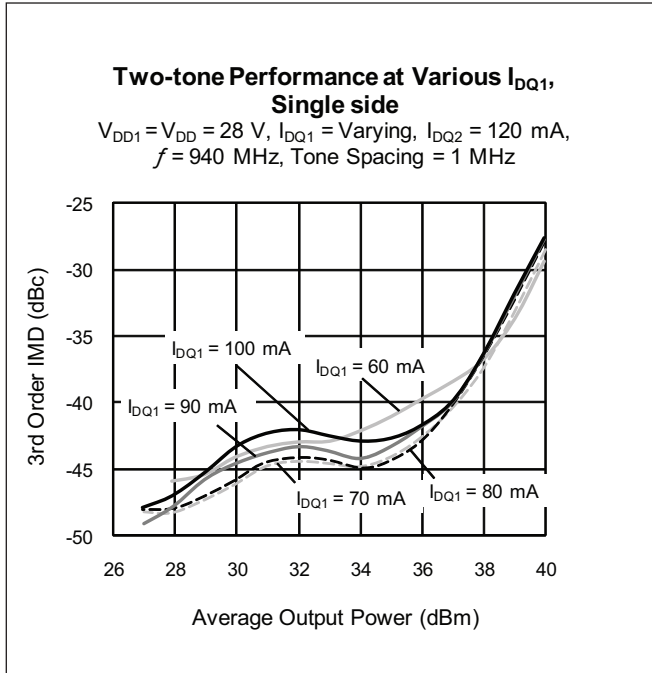
### Application Examples



Typical Performance

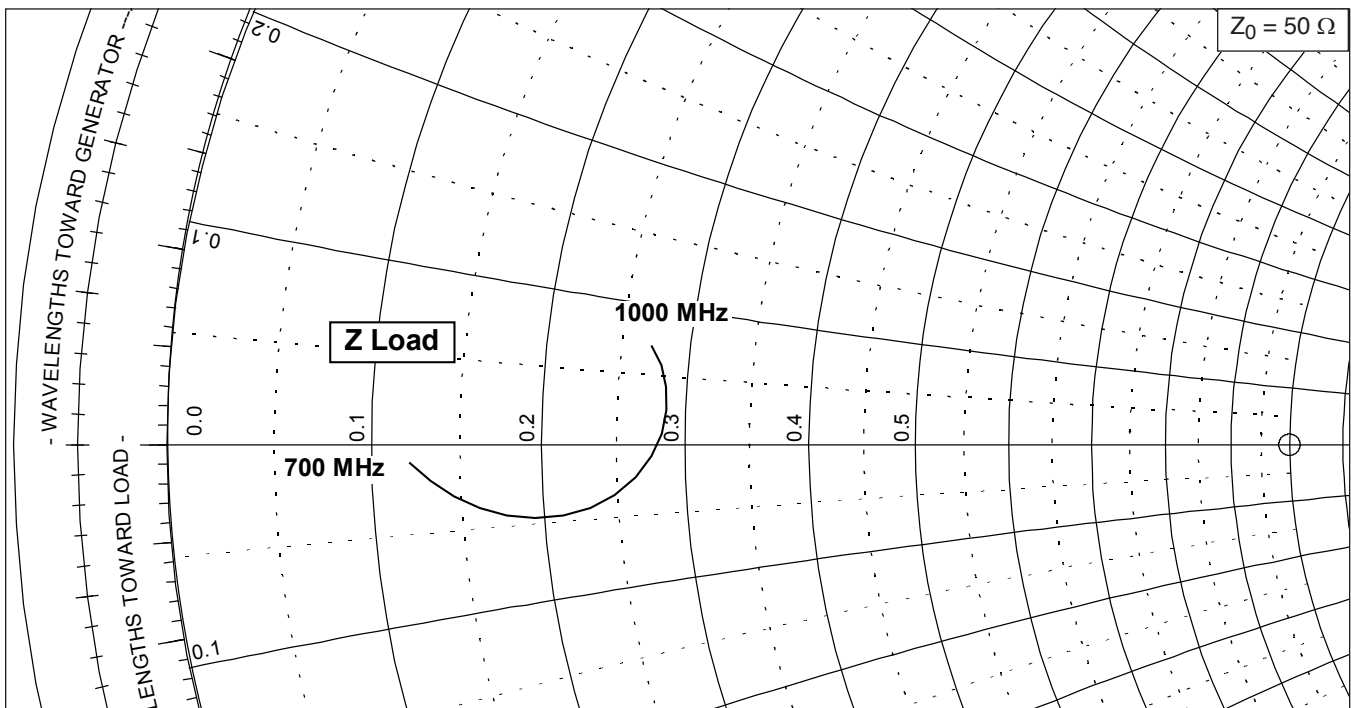
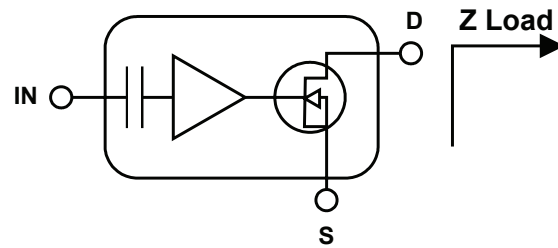


Typical Performance (cont.)

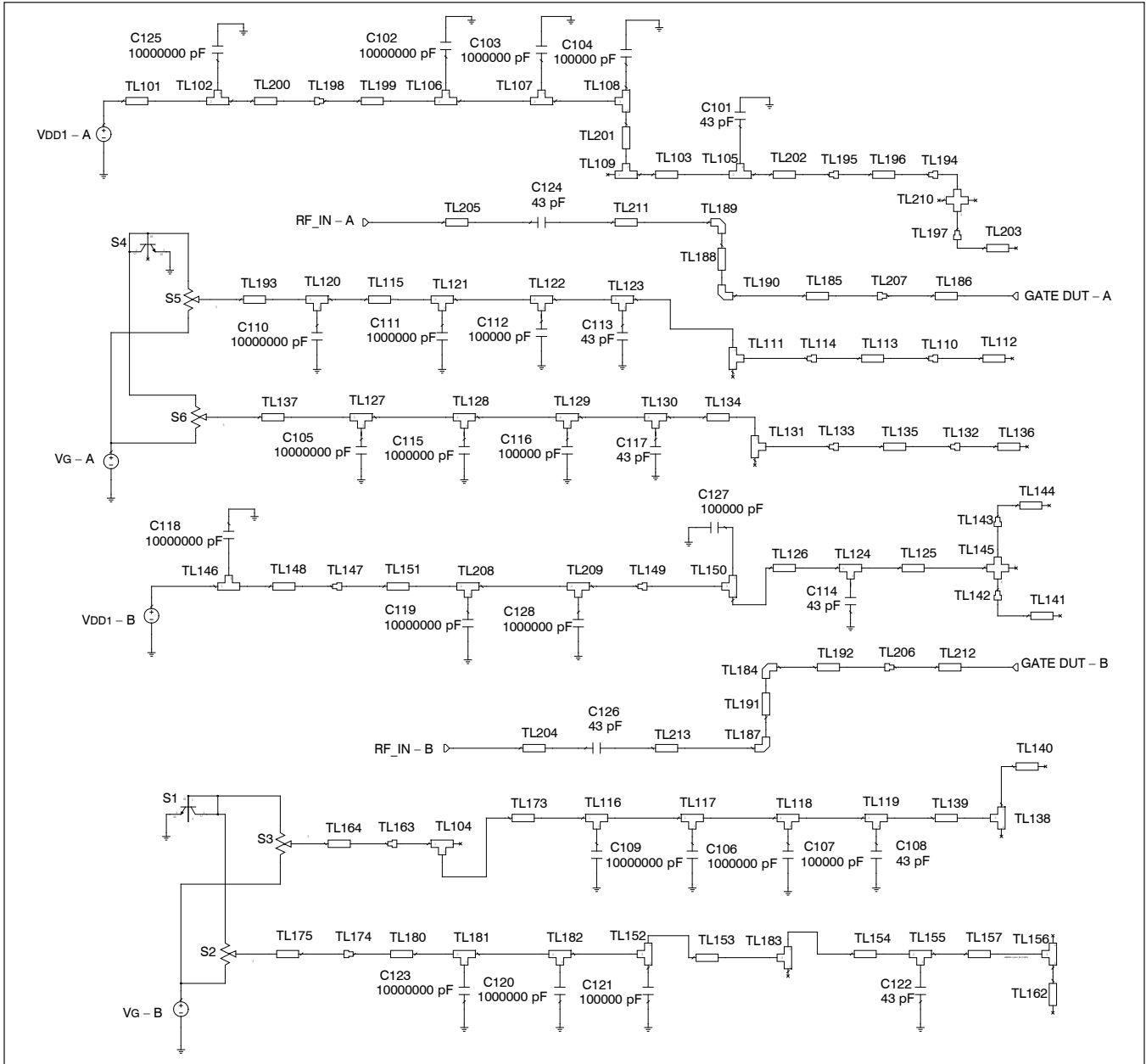


### Broadband Circuit Impedance

| Frequency<br>MHz | Z Load $\Omega$ |      |
|------------------|-----------------|------|
|                  | R               | jX   |
| 700              | 13.6            | 3.5  |
| 720              | 14.0            | 2.9  |
| 740              | 14.2            | 2.1  |
| 760              | 14.3            | 1.3  |
| 780              | 14.1            | 0.4  |
| 800              | 13.7            | -0.4 |
| 820              | 13.2            | -1.2 |
| 840              | 12.4            | -1.8 |
| 860              | 11.5            | -2.1 |
| 880              | 10.6            | -2.3 |
| 900              | 9.7             | -2.4 |
| 920              | 8.8             | -2.2 |
| 940              | 8.0             | -1.9 |
| 960              | 7.3             | -1.5 |
| 980              | 6.6             | -1.1 |
| 1000             | 6.1             | -0.5 |

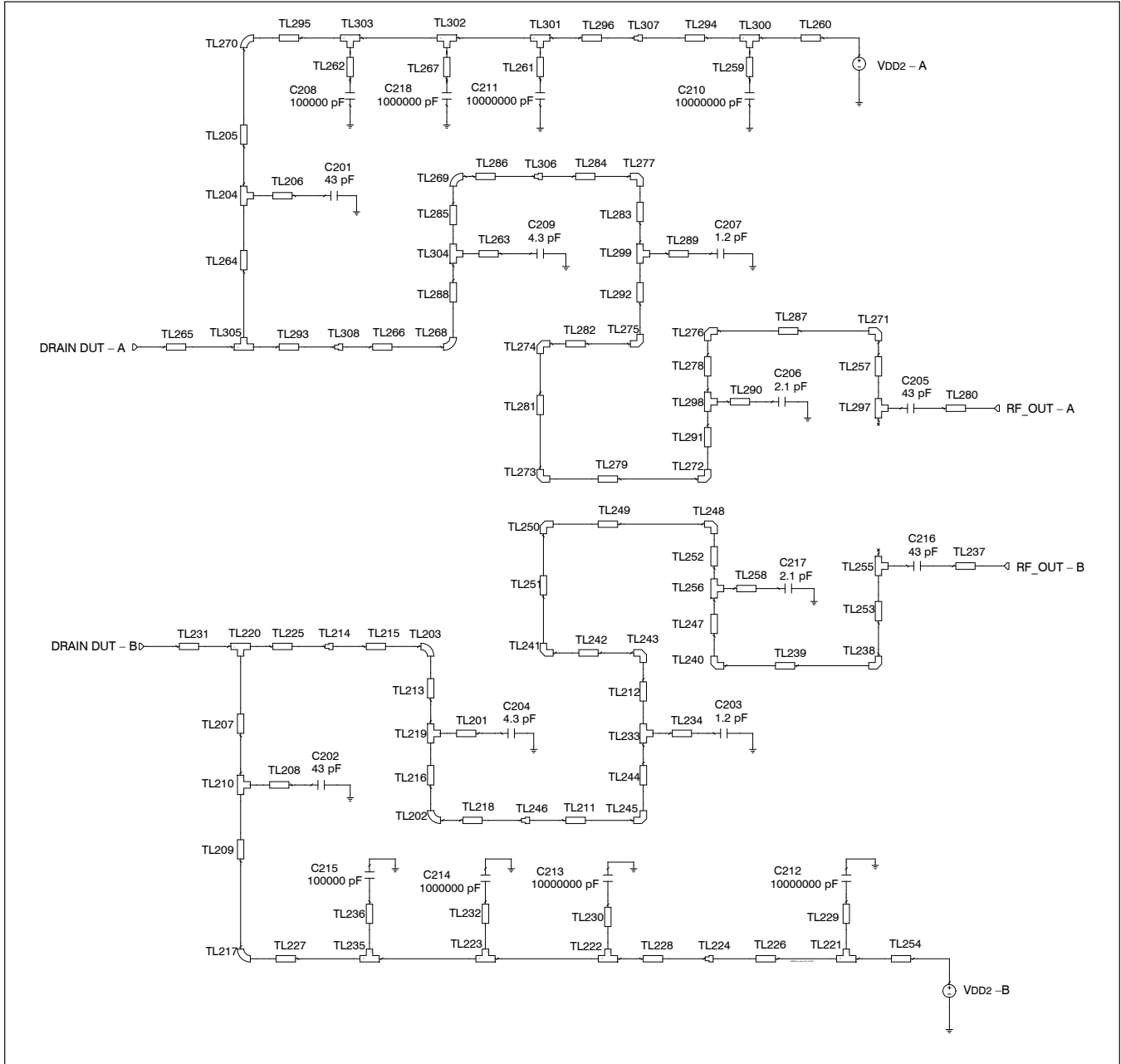


Reference Circuit (cont.)



Reference circuit input schematic for  $f = 894$  MHz

Reference Circuit (cont.)



Reference circuit output schematic for  $f = 894$  MHz



**Reference Circuit** (cont.)

**Electrical Characteristics at 894 MHz**

| Transmission Line  | Electrical Characteristics       | Dimensions: mm                                   | Dimensions: mils                      |
|--|----------------------------------|--|---------------------------------------|
| <b>Input</b>   |                                  |  |                                       |
| TL101  | 0.023 $\lambda$ , 20.13 $\Omega$ | W = 5.994, L = 4.445                             | W = 236, L = 175                      |
| TL102  | 0.011 $\lambda$ , 20.13 $\Omega$ | W1 = 5.994, W2 = 5.994, W3 = 2.032               | W1 = 236, W2 = 236, W3 = 80           |
| TL103  | 0.005 $\lambda$ , 68.91 $\Omega$ | W = 0.991, L = 1.092                             | W = 39, L = 43                        |
| TL104  | 0.010 $\lambda$ , 68.91 $\Omega$ | W1 = 0.991, W2 = 0.991, W3 = 2.108               | W1 = 39, W2 = 39, W3 = 83             |
| TL105, TL118, TL119, TL123, TL130                                    | 0.007 $\lambda$ , 68.91 $\Omega$ | W1 = 0.991, W2 = 0.991, W3 = 1.397               | W1 = 39, W2 = 39, W3 = 55             |
| TL106, TL116, TL120, TL127   | 0.008 $\lambda$ , 68.91 $\Omega$ | W1 = 0.991, W2 = 0.991, W3 = 1.600               | W1 = 39, W2 = 39, W3 = 63             |
| TL107, TL108, TL109, TL117, TL128, TL131, TL152, TL155, TL166, TL167 | 0.005 $\lambda$ , 68.91 $\Omega$ | W1 = 0.991, W2 = 0.991, W3 = 0.991               | W1 = 39, W2 = 39, W3 = 39             |
| TL110, TL114, TL132, TL133, TL162, TL181, TL142, TL143               |                                  | W1 = 0.001, W2 = 0.001, Offset = 0.000           | W1 = 1, W2 = 21, Offset = 6           |
| TL111  | 0.002 $\lambda$ , 68.91 $\Omega$ | W1 = 0.991, W2 = 0.991, W3 = 0.508               | W1 = 39, W2 = 39, W3 = 20             |
| TL112, TL136   | 0.016 $\lambda$ , 74.86 $\Omega$ | W = 0.838, L = 3.353                             | W = 33, L = 132                       |
| TL113  | 0.031 $\lambda$ , 89.88 $\Omega$ | W = 0.549, L = 6.553                             | W = 22, L = 258                       |
| TL115  | 0.009 $\lambda$ , 68.91 $\Omega$ | W = 0.991, L = 1.905                             | W = 39, L = 75                        |
| TL121, TL122, TL129  | 0.005 $\lambda$ , 68.91 $\Omega$ | W1 = 0.991, W2 = 0.991, W3 = 1.016               | W1 = 39, W2 = 39, W3 = 40             |
| TL124, TL192   | 0.007 $\lambda$ , 63.13 $\Omega$ | W1 = 1.168, W2 = 1.168, W3 = 1.524               | W1 = 46, W2 = 46, W3 = 60             |
| TL125  | 0.033 $\lambda$ , 63.13 $\Omega$ | W = 1.168, L = 6.693                             | W = 46, L = 264                       |
| TL126  | 0.004 $\lambda$ , 63.13 $\Omega$ | W = 1.168, L = 0.787                             | W = 46, L = 31                        |
| TL134  | 0.004 $\lambda$ , 68.91 $\Omega$ | W = 0.991, L = 0.838                             | W = 39, L = 33                        |
| TL135  | 0.059 $\lambda$ , 82.83 $\Omega$ | W = 0.671, L = 12.294                            | W = 26, L = 484                       |
| TL137  | 0.035 $\lambda$ , 68.91 $\Omega$ | W = 0.991, L = 7.181                             | W = 39, L = 283                       |
| TL138, TL156   | 0.005 $\lambda$ , 72.76 $\Omega$ | W1 = 0.889, W2 = 0.889, W3 = 0.993               | W1 = 35, W2 = 35, W3 = 39             |
| TL139  | 0.038 $\lambda$ , 68.91 $\Omega$ | W = 0.991, L = 7.925                             | W = 39, L = 312                       |
| TL140  | 0.013 $\lambda$ , 72.76 $\Omega$ | W = 0.889, L = 2.713                             | W = 35, L = 107                       |
| TL141, TL144   | 0.004 $\lambda$ , 35.17 $\Omega$ | W = 2.918, L = 0.808                             | W = 115, L = 32                       |
| TL145  |                                  | W1 = 0.457, W2 = 2.032, W3 = 0.457<br>W4 = 2.032 | W1 = 18, W2 = 80, W3 = 18,<br>W4 = 80 |
| TL146  | 0.007 $\lambda$ , 17.84 $\Omega$ | W1 = 6.929, W2 = 6.929, W3 = 1.270               | W1 = 273, W2 = 273, W3 = 50           |
| TL147  |                                  | W1 = 0.002, W2 = 0.001, Offset = 0.001           | W1 = 2, W2 = 43, Offset = 40          |
| TL148  | 0.013 $\lambda$ , 17.84 $\Omega$ | W = 6.929, L = 2.540                             | W = 273, L = 100                      |
| TL149  |                                  | W1 = 0.002, W2 = 0.001, Offset = 0.000           | W1 = 2, W2 = 43, Offset = -17         |
| TL150  | 0.010 $\lambda$ , 63.13 $\Omega$ | W1 = 1.168, W2 = 1.168, W3 = 2.032               | W1 = 46, W2 = 46, W3 = 80             |
| TL151  | 0.016 $\lambda$ , 63.13 $\Omega$ | W = 1.168, L = 3.211                             | W = 46, L = 126                       |
| TL153  | 0.033 $\lambda$ , 68.91 $\Omega$ | W = 0.991, L = 6.731                             | W = 39, L = 265                       |
| TL154  | 0.006 $\lambda$ , 68.91 $\Omega$ | W = 0.991, L = 1.219                             | W = 39, L = 48                        |
| TL157  | 0.051 $\lambda$ , 68.91 $\Omega$ | W = 0.991, L = 10.465                            | W = 39, L = 412                       |
| TL158  | 0.006 $\lambda$ , 72.76 $\Omega$ | W = 0.889, L = 1.140                             | W = 35, L = 45                        |
| TL159  |                                  | W1 = 0.001, W2 = 0.001, Offset = -0.001          | W1 = 1, W2 = 50, Offset = -28         |

*Table continued next page*

**Reference Circuit** (cont.)

**Electrical Characteristics at 894 MHz**

| <b>Transmission Line</b>   | <b>Electrical Characteristics</b> | <b>Dimensions: mm</b>                          | <b>Dimensions: mils</b>            |
|----------------------------|-----------------------------------|--|------------------------------------|
| TL160                      | 0.011 $\lambda$ , 40.23 $\Omega$  | W = 2.413, L = 2.289                           | W = 95, L = 90                     |
| TL161                      | 0.035 $\lambda$ , 68.91 $\Omega$  | W = 0.991, L = 7.188                           | W = 39, L = 283                    |
| TL163                      | 0.010 $\lambda$ , 43.05 $\Omega$  | W = 2.184, L = 2.057                           | W = 86, L = 81                     |
| TL164                      | 0.015 $\lambda$ , 68.91 $\Omega$  | W = 0.991, L = 3.073                           | W = 39, L = 121                    |
| TL165                      | 0.010 $\lambda$ , 68.91 $\Omega$  | W1 = 0.991, W2 = 0.991, W3 = 2.032             | W1 = 39, W2 = 39, W3 = 80          |
| TL168, TL171, TL173, TL174 |                                   | W = 1.676                                      | W = 66                             |
| TL169, TL176               | 0.010 $\lambda$ , 51.10 $\Omega$  | W = 1.676, L = 2.032                           | W = 66, L = 80                     |
| TL170, TL196               | 0.019 $\lambda$ , 74.86 $\Omega$  | W = 0.838, L = 3.962                           | W = 33, L = 156                    |
| TL172, TL175, TL195, TL197 | 0.050 $\lambda$ , 51.10 $\Omega$  | W = 1.676, L = 10.160                          | W = 66, L = 400                    |
| TL177                      | 0.026 $\lambda$ , 68.91 $\Omega$  | W = 0.991, L = 5.309                           | W = 39, L = 209                    |
| TL178                      |                                   | W1 = 0.002, W2 = 0.002, Offset = 0.000         | W1 = 2, W2 = 61, Offset = -18      |
| TL179                      |                                   | W1 = 0.001, W2 = 0.001, Offset = 0.001         | W1 = 1, W2 = 39, Offset = 38       |
| TL180                      | 0.004 $\lambda$ , 35.17 $\Omega$  | W = 2.918, L = 0.744                           | W = 115, L = 29                    |
| TL182                      |                                   | W1 = 0.001, W2 = 0.001, Offset = -0.002        | W1 = 1, W2 = 39, Offset = -91      |
| TL183                      | 0.034 $\lambda$ , 68.91 $\Omega$  | W = 0.991, L = 6.967                           | W = 39, L = 274                    |
| TL184                      | 0.013 $\lambda$ , 20.13 $\Omega$  | W = 5.994, L = 2.540                           | W = 236, L = 100                   |
| TL185                      | 0.014 $\lambda$ , 68.91 $\Omega$  | W = 0.991, L = 2.972                           | W = 39, L = 117                    |
| TL186                      | 0.036 $\lambda$ , 68.91 $\Omega$  | W = 0.991, L = 7.460                           | W = 39, L = 294                    |
| TL187                      | 0.004 $\lambda$ , 35.17 $\Omega$  | W = 2.918, L = 0.737                           | W = 115, L = 29                    |
| TL188, TL189               | 0.036 $\lambda$ , 51.10 $\Omega$  | W = 1.676, L = 7.341                           | W = 66, L = 289                    |
| TL190, TL191               |                                   | W1 = 1.676, W2 = 0.838                         | W1 = 66, W2 = 33                   |
| TL193                      | 0.006 $\lambda$ , 63.13 $\Omega$  | W1 = 1.168, W2 = 1.168, W3 = 1.168             | W1 = 46, W2 = 46, W3 = 46          |
| TL194                      |                                   | W1 = 0.635, W2 = 2.007, W3 = 0.635, W4 = 2.007 | W1 = 25, W2 = 79, W3 = 25, W4 = 79 |

| <b>Output</b>              |                                   |                                    |                              |
|----------------------------|-----------------------------------|------------------------------------|------------------------------|
| TL201, TL263               | 0.000 $\lambda$ , 129.71 $\Omega$ | W = 0.127, L = 0.025               | W = 5, L = 1                 |
| TL202, TL203               |                                   | W = 0.006, ANG = 90.000, R = 0.005 | W = 6, ANG = 354330, R = 200 |
| TL204, TL210               | 0.005 $\lambda$ , 60.26 $\Omega$  | W1 = 1.270, W2 = 1.270, W3 = 1.016 | W1 = 50, W2 = 50, W3 = 40    |
| TL205, TL209               | 0.000 $\lambda$ , 60.26 $\Omega$  | W = 1.270, L = 0.025               | W = 50, L = 1                |
| TL206, TL208, TL262, TL267 | 0.000 $\lambda$ , 68.02 $\Omega$  | W = 1.016, L = 0.025               | W = 40, L = 1                |
| TL207, TL264               | 0.100 $\lambda$ , 60.26 $\Omega$  | W = 1.270, L = 20.549              | W = 50, L = 809              |
| TL211, TL284               | 0.011 $\lambda$ , 38.82 $\Omega$  | W = 2.540, L = 2.159               | W = 100, L = 85              |
| TL212, TL292               | 0.002 $\lambda$ , 38.82 $\Omega$  | W = 2.540, L = 0.434               | W = 100, L = 17              |
| TL213, TL288               | 0.059 $\lambda$ , 19.85 $\Omega$  | W = 6.096, L = 11.303              | W = 240, L = 445             |
| TL214, TL308               |                                   | W1 = 10.160, W2 = 6.020            | W1 = 400, W2 = 237           |
| TL215, TL266               | 0.007 $\lambda$ , 20.06 $\Omega$  | W = 6.020, L = 1.397               | W = 237, L = 55              |
| TL216                      | 0.001 $\lambda$ , 19.85 $\Omega$  | W = 6.096, L = 0.127               | W = 240, L = 5               |
| TL217, TL270               |                                   | W = 0.001, ANG = 0.001, R = 0.003  | W = 1, ANG = 50, R = 118     |
| TL218, TL286               | 0.038 $\lambda$ , 19.85 $\Omega$  | W = 6.096, L = 7.366               | W = 240, L = 290             |
| TL219, TL301               | 0.001 $\lambda$ , 19.85 $\Omega$  | W1 = 6.096, W2 = 6.096, W3 = 0.127 | W1 = 240, W2 = 240, W3 = 5   |

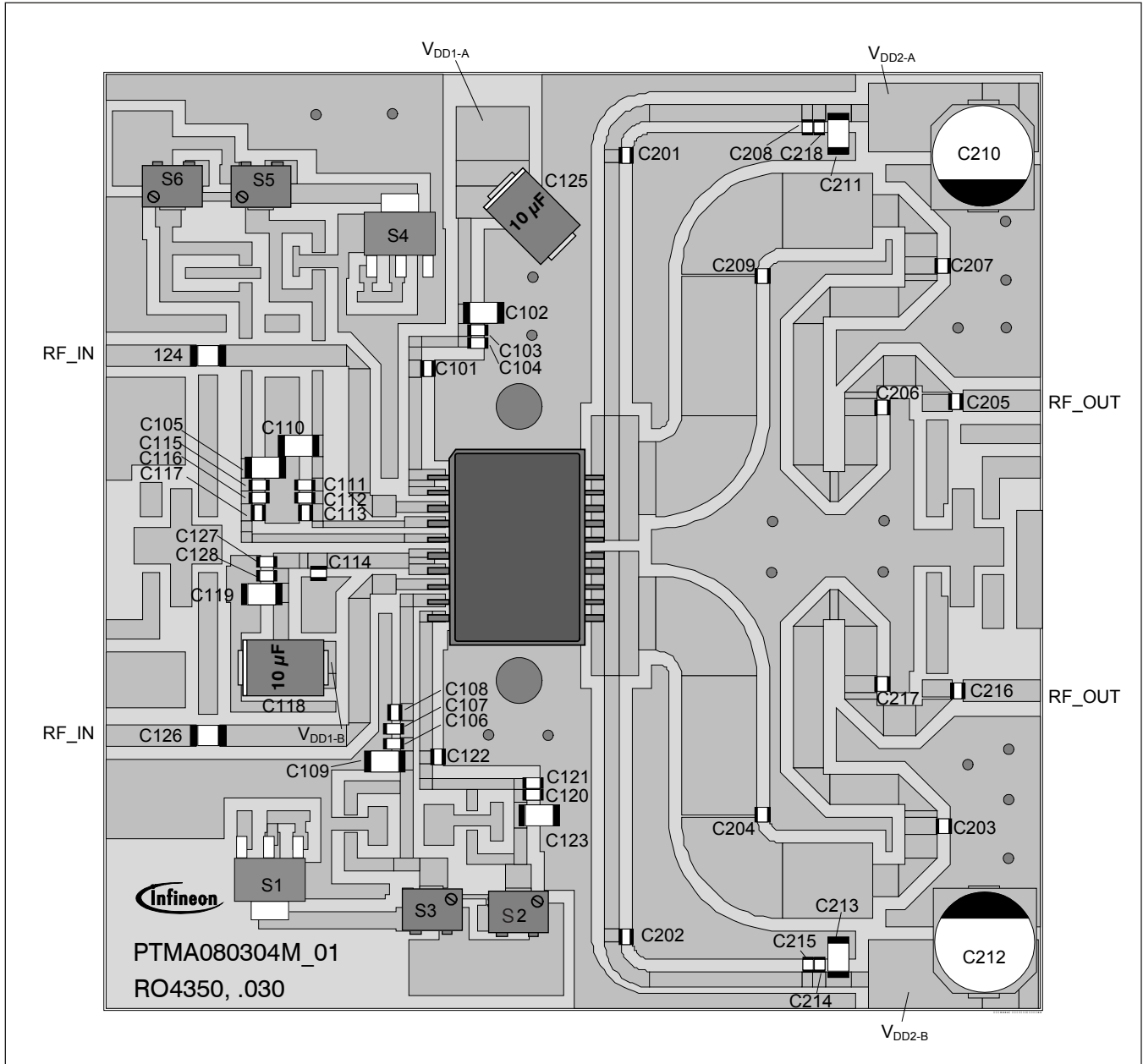
*Table continued next page*

**Reference Circuit** (cont.)

**Electrical Characteristics at 894 MHz**

| <b>Transmission Line</b>   | <b>Electrical Characteristics</b> | <b>Dimensions: mm</b>                | <b>Dimensions: mils</b>       |
|--|-----------------------------------|--------------------------------------|-------------------------------|
| TL220, TL305   | 0.007 $\lambda$ , 12.84 $\Omega$  | W1 = 10.160, W2 = 10.160, W3 = 1.270 | W1 = 400, W2 = 400, W3 = 50   |
| TL225, TL293   | 0.008 $\lambda$ , 12.84 $\Omega$  | W = 10.160, L = 1.524                | W = 400, L = 60               |
| TL226, TL294   | 0.048 $\lambda$ , 21.16 $\Omega$  | W = 5.639, L = 9.246                 | W = 222, L = 364              |
| TL227, TL295   | 0.060 $\lambda$ , 60.26 $\Omega$  | W = 1.270, L = 12.283                | W = 50, L = 484               |
| TL228, TL296   | 0.007 $\lambda$ , 60.26 $\Omega$  | W = 1.270, L = 1.397                 | W = 50, L = 55                |
| TL229, TL259   | 0.000 $\lambda$ , 34.08 $\Omega$  | W = 3.048, L = 0.025                 | W = 120, L = 1                |
| TL230, TL261   | 0.000 $\lambda$ , 45.17 $\Omega$  | W = 2.032, L = 0.025                 | W = 80, L = 1                 |
| TL231, TL265   | 0.005 $\lambda$ , 12.84 $\Omega$  | W = 10.160, L = 1.016                | W = 400, L = 40               |
| TL232  | 0.000 $\lambda$ , 68.02 $\Omega$  | W = 1.016, L = 0.025                 | W = 40, L = 1                 |
| TL233, TL255, TL256, TL297, TL298, TL299   | 0.007 $\lambda$ , 38.82 $\Omega$  | W1 = 2.540, W2 = 2.540, W3 = 1.397   | W1 = 100, W2 = 100, W3 = 55   |
| TL234, TL258, TL289, TL290   | 0.000 l, 57.05 $\Omega$           | W = 1.397, L = 0.025                 | W = 55, L = 1                 |
| TL236  | 0.000 l, 68.02 $\Omega$           | W = 1.016, L = 0.025                 | W = 40, L = 1                 |
| TL237, TL280   | 0.031 l, 51.10 $\Omega$           | W = 1.676, L = 6.289                 | W = 66, L = 248               |
| TL238, TL240, TL241, TL243, TL245, TL248, TL250, TL271, TL272, TL273, TL274, TL275, TL276, TL277 |                                   | W = 2.540                            | W = 100                       |
| TL239, TL287   | 0.013 $\lambda$ , 38.82 $\Omega$  | W = 2.540, L = 2.540                 | W = 100, L = 100              |
| TL242, TL282   | 0.028 $\lambda$ , 38.82 $\Omega$  | W = 2.540, L = 5.588                 | W = 100, L = 220              |
| TL244, TL283   | 0.010 $\lambda$ , 38.82 $\Omega$  | W = 2.540, L = 1.981                 | W = 100, L = 78               |
| TL246, TL306   |                                   | W1 = 6.096, W2 = 2.540               | W1 = 240, W2 = 100            |
| TL247, TL278   | 0.002 $\lambda$ , 38.82 $\Omega$  | W = 2.540, L = 0.483                 | W = 100, L = 19               |
| TL249, TL279   | 0.004 $\lambda$ , 38.82 $\Omega$  | W = 2.540, L = 0.762                 | W = 100, L = 30               |
| TL251, TL281   | 0.057 $\lambda$ , 38.82 $\Omega$  | W = 2.540, L = 11.430                | W = 100, L = 450              |
| TL252, TL291   | 0.020 $\lambda$ , 38.82 $\Omega$  | W = 2.540, L = 3.962                 | W = 100, L = 156              |
| TL253, TL257   | 0.001 $\lambda$ , 38.82 $\Omega$  | W = 2.540, L = 0.127                 | W = 100, L = 5                |
| TL254, TL260   | 0.008 $\lambda$ , 21.16 $\Omega$  | W = 5.639, L = 1.499                 | W = 222, L = 59               |
| TL268, TL269   |                                   | W = 0.006, ANG = 90.000, R = 0.005   | W = 6, ANG = 3543307, R = 200 |
| TL285  | 0.001 $\lambda$ , 19.85 $\Omega$  | W = 6.096, L = 0.127                 | W = 240, L = 5                |

Reference Circuit (cont.)



Reference circuit assembly diagram (not to scale)\*

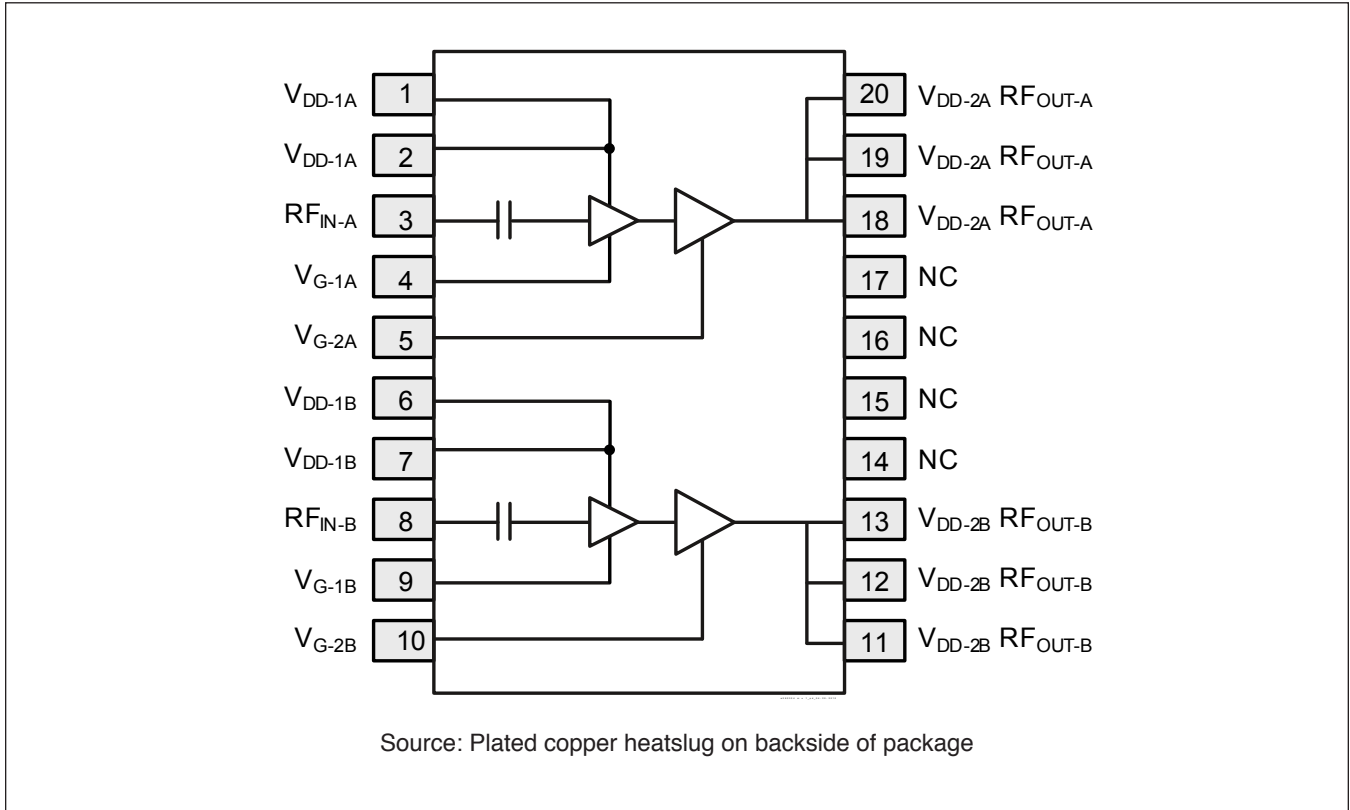
**Reference Circuit** (cont.)

**Circuit Assembly Information**

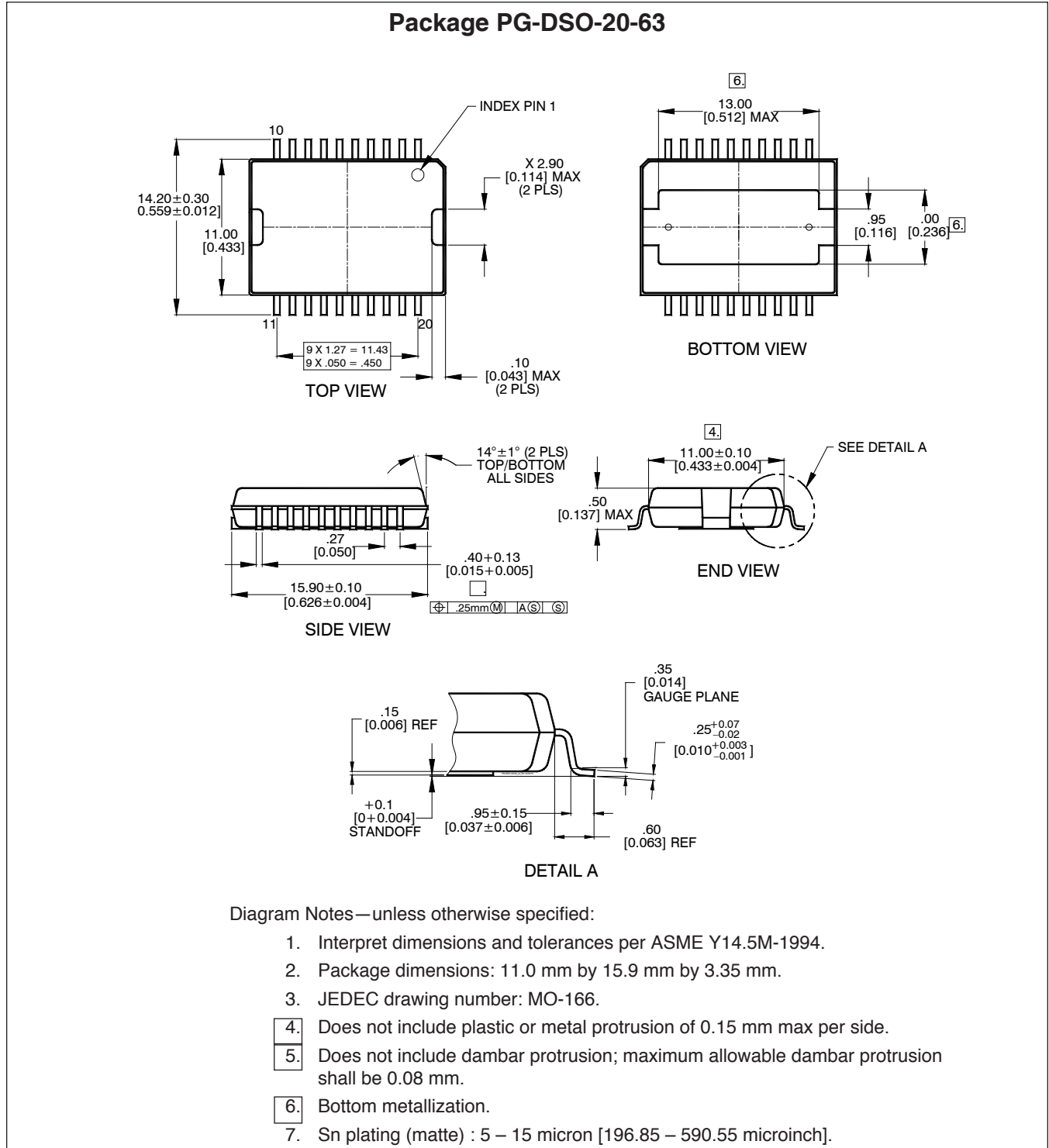
|     |                 |   |                           |
|-----|-----------------|---|---------------------------|
| DUT | PTFA080304M     | LDMOS Transistor                            |                           |
| PCB | LTN/PTFA080304M | 0.508 mm [.020"] thick, $\epsilon_r = 3.48$ | Rogers 4350, 1 oz. copper |

| Component                          | Description                 | Suggested Manufacturer | P/N               |
|------------------------------------|-----------------------------|------------------------|-------------------|
| <b>Input</b>                       |                             |                        |                   |
| C101, C108, C113, C114, C117, C122 | Chip capacitor, 43 pF       | ATC                    | ATC100A430FW150XB |
| C102, C105, C109, C110, C119, C123 | Capacitor, 10 $\mu$ F       | Digi-Key               | 587-1352-1-ND     |
| C103, C106, C111, C115, C120, C128 | Chip capacitor, 1 $\mu$ F   | Digi-Key               | 490-4736-1-ND     |
| C104, C107, C112, C116, C121, C127 | Chip capacitor, 0.1 $\mu$ F | Digi-Key               | 490-1723-1-ND     |
| C118, C125                         | Capacitor, 10 $\mu$ F       | Digi-Key               | 399-1655-2-ND     |
| C124, C126                         | Chip capacitor, 43 pF       | ATC                    | ATC100B430FW500XB |
| S1, S4                             | Transistor                  | Digi-Key               | BCP5616TA-ND      |
| S2, S3, S5, S6                     | Potentiometer, 2k W         | Digi-Key               | 3224W-202ECT-ND   |
| <b>Output</b>                      |                             |                        |                   |
| C201, C202, C205, C216             | Chip capacitor, 43 pF       | ATC                    | ATC100A430FW150XB |
| C203, C207                         | Chip capacitor, 1.2 pF      | ATC                    | ATC100A1R2BW150XB |
| C204, C209                         | Chip capacitor, 4.3 pF      | ATC                    | ATC100A4R3BW150XB |
| C206, C217                         | Chip capacitor, 2.1 pF      | ATC                    | ATC100A2R1BW150XB |
| C208, C215                         | Chip capacitor, 0.1 $\mu$ F | Digi-Key               | 490-1723-1-ND     |
| C210, C212                         | Capacitor, 10 $\mu$ F       | Digi-Key               | PCE4442TR-ND      |
| C211, C213                         | Capacitor, 10 $\mu$ F       | Digi-Key               | 587-1352-1-ND     |
| C214, C218                         | Chip capacitor, 1 $\mu$ F   | Digi-Key               | 490-4736-1-ND     |

Pinout Diagram



Package Outline Specifications



Find the latest and most complete information about products and packaging at the Infineon Internet page <http://www.infineon.com/rfpower>