

# RF Power LDMOS Transistor

## N-Channel Enhancement-Mode Lateral MOSFET

This 50 watt RF power LDMOS transistor is designed for cellular base station applications covering the frequency range of 1805 to 1880 MHz.

- Typical Single-Carrier W-CDMA Performance:  $V_{DD} = 28$  Volts,  $I_{DQ} = 1800$  mA,  $P_{out} = 50$  Watts Avg., Input Signal PAR = 9.9 dB @ 0.01% Probability on CCDF.

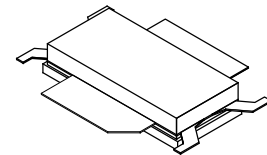
| Frequency | $G_{ps}$<br>(dB) | $\eta_D$<br>(%) | Output PAR<br>(dB) | ACPR<br>(dBc) | IRL<br>(dB) |
|-----------|------------------|-----------------|--------------------|---------------|-------------|
| 1805 MHz  | 18.9             | 32.0            | 7.2                | -35.0         | -19         |
| 1840 MHz  | 19.1             | 32.0            | 7.1                | -35.0         | -18         |
| 1880 MHz  | 19.0             | 32.0            | 6.8                | -34.0         | -11         |

### Features

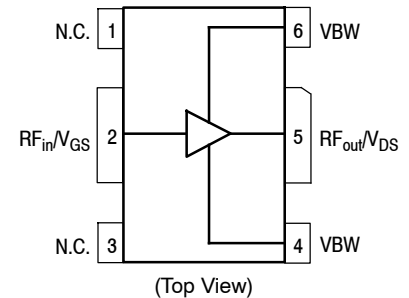
- Greater Negative Gate-Source Voltage Range for Improved Class C Operation
- Designed for Digital Predistortion Error Correction Systems
- Optimized for Doherty Applications
- In Tape and Reel. R3 Suffix = 250 Units, 44 mm Tape Width, 13-inch Reel. For R5 Tape and Reel option, see p. 12.

**AFT18S230SR3**

**1805-1880 MHz, 50 W AVG., 28 V**



**NI-780S-6**



**Figure 1. Pin Connections**

**Table 1. Maximum Ratings**

| Rating                                                                                                                      | Symbol    | Value       | Unit      |
|-----------------------------------------------------------------------------------------------------------------------------|-----------|-------------|-----------|
| Drain-Source Voltage                                                                                                        | $V_{DS}$  | -0.5, +65   | Vdc       |
| Gate-Source Voltage                                                                                                         | $V_{GS}$  | -6.0, +10   | Vdc       |
| Operating Voltage                                                                                                           | $V_{DD}$  | 32, +0      | Vdc       |
| Storage Temperature Range                                                                                                   | $T_{stg}$ | -65 to +150 | °C        |
| Case Operating Temperature Range                                                                                            | $T_C$     | -40 to +150 | °C        |
| Operating Junction Temperature Range (1,2)                                                                                  | $T_J$     | -40 to +225 | °C        |
| CW Operation @ $T_C = 25^\circ\text{C}$ when DC current is fed through drain lead, pin 5<br>Derate above $25^\circ\text{C}$ | CW        | 253<br>1.7  | W<br>W/°C |
| CW Operation @ $T_C = 25^\circ\text{C}$ when DC current is fed through pin 4 and pin 6<br>Derate above $25^\circ\text{C}$   | CW        | 83<br>0.41  | W<br>W/°C |

**Table 2. Thermal Characteristics**

| Characteristic                                                                                                                                                                                                                         | Symbol          | Value (2,3)  | Unit |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|--------------|------|
| Thermal Resistance, Junction to Case<br>Case Temperature $80^\circ\text{C}$ , 50 W CW, 28 Vdc, $I_{DQ} = 1800\text{ mA}$ , 1840 MHz<br>Case Temperature $92^\circ\text{C}$ , 160 W CW(4), 28 Vdc, $I_{DQ} = 1800\text{ mA}$ , 1840 MHz | $R_{\theta JC}$ | 0.41<br>0.31 | °C/W |

**Table 3. ESD Protection Characteristics**

| Test Methodology                      | Class |
|---------------------------------------|-------|
| Human Body Model (per JESD22-A114)    | 2     |
| Machine Model (per EIA/JESD22-A115)   | B     |
| Charge Device Model (per JESD22-C101) | IV    |

**Table 4. Electrical Characteristics** ( $T_A = 25^\circ\text{C}$  unless otherwise noted)

| Characteristic | Symbol | Min | Typ | Max | Unit |
|----------------|--------|-----|-----|-----|------|
|----------------|--------|-----|-----|-----|------|

**Off Characteristics**

|                                                                                                   |           |   |   |    |                 |
|---------------------------------------------------------------------------------------------------|-----------|---|---|----|-----------------|
| Zero Gate Voltage Drain Leakage Current<br>( $V_{DS} = 65\text{ Vdc}$ , $V_{GS} = 0\text{ Vdc}$ ) | $I_{DSS}$ | — | — | 10 | $\mu\text{Adc}$ |
| Zero Gate Voltage Drain Leakage Current<br>( $V_{DS} = 28\text{ Vdc}$ , $V_{GS} = 0\text{ Vdc}$ ) | $I_{DSS}$ | — | — | 1  | $\mu\text{Adc}$ |
| Gate-Source Leakage Current<br>( $V_{GS} = 5\text{ Vdc}$ , $V_{DS} = 0\text{ Vdc}$ )              | $I_{GSS}$ | — | — | 1  | $\mu\text{Adc}$ |

**On Characteristics**

|                                                                                                                |              |     |      |     |     |
|----------------------------------------------------------------------------------------------------------------|--------------|-----|------|-----|-----|
| Gate Threshold Voltage<br>( $V_{DS} = 10\text{ Vdc}$ , $I_D = 291\text{ }\mu\text{Adc}$ )                      | $V_{GS(th)}$ | 1.5 | 2.0  | 2.5 | Vdc |
| Gate Quiescent Voltage<br>( $V_{DD} = 28\text{ Vdc}$ , $I_D = 1800\text{ mAdc}$ , Measured in Functional Test) | $V_{GS(Q)}$  | 2.3 | 2.8  | 3.3 | Vdc |
| Drain-Source On-Voltage<br>( $V_{GS} = 10\text{ Vdc}$ , $I_D = 2.9\text{ Adc}$ )                               | $V_{DS(on)}$ | 0.1 | 0.24 | 0.3 | Vdc |

**Functional Tests** (5) (In Freescale Test Fixture, 50 ohm system)  $V_{DD} = 28\text{ Vdc}$ ,  $I_{DQ} = 1800\text{ mA}$ ,  $P_{out} = 50\text{ W Avg.}$ ,  $f = 1880\text{ MHz}$ , Single-Carrier W-CDMA, IQ Magnitude Clipping, Input Signal PAR = 9.9 dB @ 0.01% Probability on CCDF. ACPR measured in 3.84 MHz Channel Bandwidth @  $\pm 5\text{ MHz}$  Offset.

|                                                          |          |      |       |       |     |
|----------------------------------------------------------|----------|------|-------|-------|-----|
| Power Gain                                               | $G_{ps}$ | 18.0 | 19.0  | 21.0  | dB  |
| Drain Efficiency                                         | $\eta_D$ | 30.5 | 32.0  | —     | %   |
| Output Peak-to-Average Ratio @ 0.01% Probability on CCDF | PAR      | 6.4  | 6.8   | —     | dB  |
| Adjacent Channel Power Ratio                             | ACPR     | —    | -34.0 | -32.0 | dBc |
| Input Return Loss                                        | IRL      | —    | -11   | -7    | dB  |

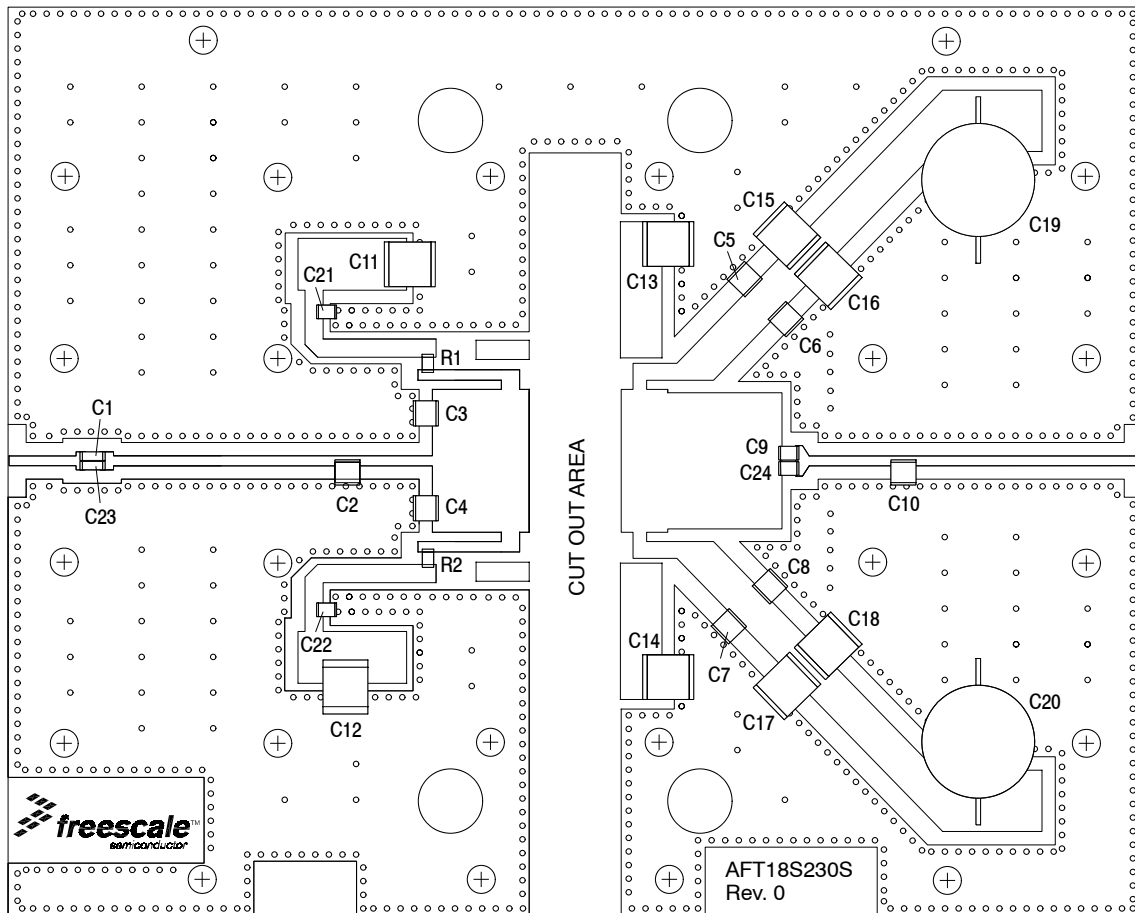
1. Continuous use at maximum temperature will affect MTTF.
2. MTTF calculator available at <http://www.freescale.com/rf>. Select Software & Tools/Development Tools/Calculators to access MTTF calculators by product.
3. Refer to AN1955, *Thermal Measurement Methodology of RF Power Amplifiers*. Go to <http://www.freescale.com/rf>. Select Documentation/Application Notes - AN1955.
4. Exceeds recommended operating conditions. See CW operation data in Maximum Ratings table.
5. Part internally matched both on input and output.

(continued)

**Table 4. Electrical Characteristics** ( $T_A = 25^\circ\text{C}$  unless otherwise noted) (continued)

| Characteristic                                                                                                                                     | Symbol                | Min | Typ  | Max | Unit  |
|----------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-----|------|-----|-------|
| <b>Load Mismatch</b> (In Freescale Test Fixture, 50 ohm system) I <sub>DQ</sub> = 1800 mA, f = 1840 MHz                                            |                       |     |      |     |       |
| VSWR 10:1 at 32 Vdc, 257 W CW <sup>(1)</sup> Output Power<br>(3 dB Input Overdrive from 230 W CW Rated Power)                                      | No Device Degradation |     |      |     |       |
| <b>Typical Performance</b> (In Freescale Test Fixture, 50 ohm system) V <sub>DD</sub> = 28 Vdc, I <sub>DQ</sub> = 1800 mA, 1805–1880 MHz Bandwidth |                       |     |      |     |       |
| P <sub>out</sub> @ 1 dB Compression Point, CW                                                                                                      | P1dB                  | —   | 207  | —   | W     |
| AM/PM<br>(Maximum value measured at the P3dB compression point across the 1805–1880 MHz bandwidth)                                                 | Φ                     | —   | 7.6  | —   | °     |
| VBW Resonance Point<br>(IMD Third Order Intermodulation Inflection Point)                                                                          | VBW <sub>res</sub>    | —   | 90   | —   | MHz   |
| Gain Flatness in 75 MHz Bandwidth @ P <sub>out</sub> = 50 W Avg.                                                                                   | G <sub>F</sub>        | —   | 0.35 | —   | dB    |
| Gain Variation over Temperature<br>(–30°C to +85°C)                                                                                                | ΔG                    | —   | 0.01 | —   | dB/°C |
| Output Power Variation over Temperature<br>(–30°C to +85°C) <sup>(1)</sup>                                                                         | ΔP1dB                 | —   | 0.37 | —   | dB/°C |

1. Exceeds recommended operating conditions. See CW operation data in Maximum Ratings table.

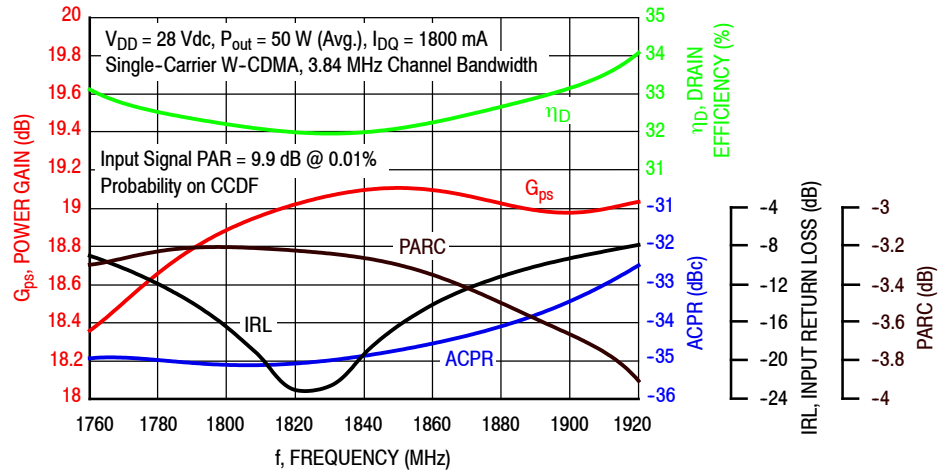


**Figure 2. AFT18S230SR3 Test Circuit Component Layout**

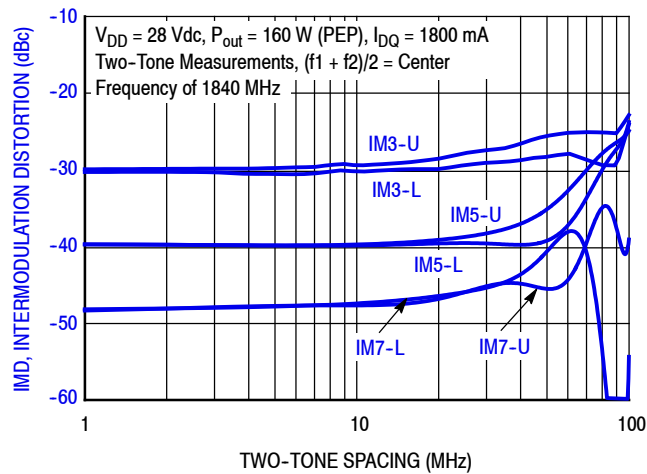
**Table 5. AFT18S230SR3 Test Circuit Component Designations and Values**

| Part                                   | Description                               | Part Number         | Manufacturer |
|----------------------------------------|-------------------------------------------|---------------------|--------------|
| C1, C21, C22, C23                      | 27 pF Chip Capacitors                     | ATC600F270JT250XT   | ATC          |
| C2                                     | 1.2 pF Chip Capacitor                     | ATC100B1R2BT500XT   | ATC          |
| C3, C4                                 | 1.0 pF Chip Capacitors                    | ATC100B1R0BT500XT   | ATC          |
| C5, C6, C7, C8                         | 27 pF Chip Capacitors                     | ATC100B270JT500XT   | ATC          |
| C9, C24                                | 39 pF Chip Capacitors                     | ATC600F390JT250XT   | ATC          |
| C10                                    | 1.5 pF Chip Capacitor                     | ATC100B1R5BT500XT   | ATC          |
| C11, C12, C13, C14, C15, C16, C17, C18 | 10 $\mu$ F, 100 V Chip Capacitors         | C5750X7S2A106M      | TDK          |
| C19, C20                               | 330 $\mu$ F, 63 V Electrolytic Capacitors | MCRH63V337M13X21-RH | Multicomp    |
| R1, R2                                 | 4.75 $\Omega$ , 1/4 W Chip Resistors      | CRCW12064R75FNEA    | Vishay       |
| PCB                                    | 0.020", $\epsilon_r = 3.5$                | RO4350              | Rogers       |

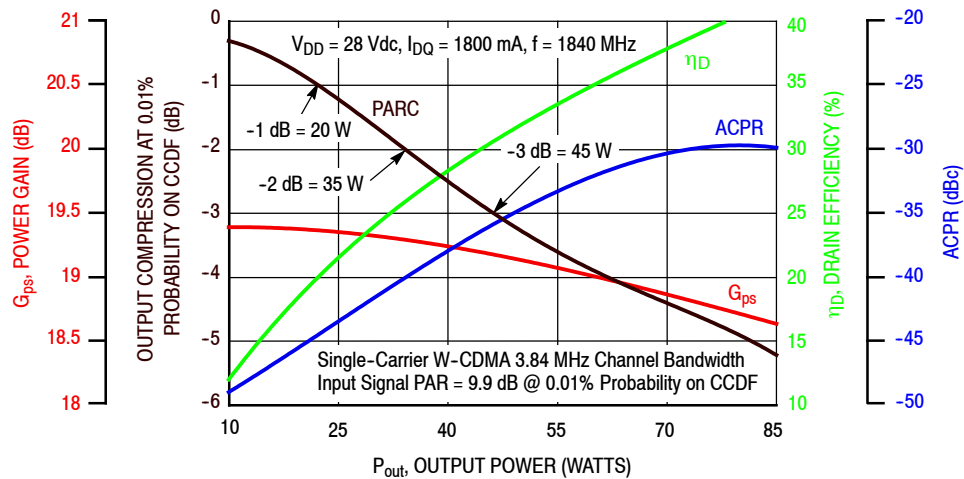
## TYPICAL CHARACTERISTICS



**Figure 3. Single-Carrier Output Peak-to-Average Ratio Compression (PARC) Broadband Performance @  $P_{out} = 50$  Watts Avg.**

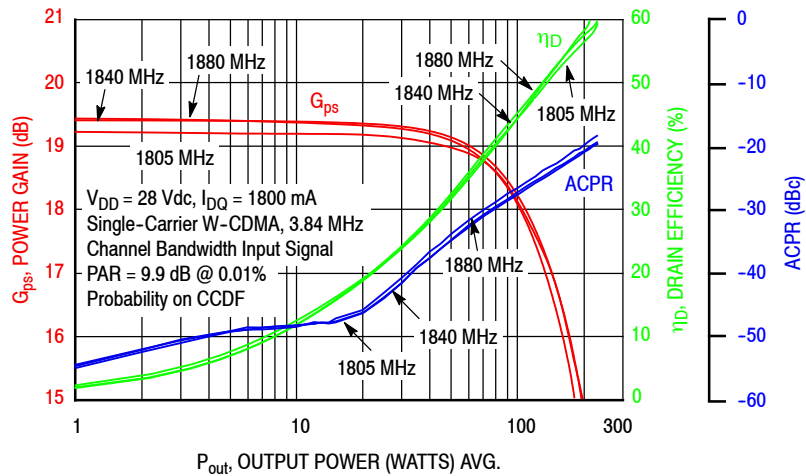


**Figure 4. Intermodulation Distortion Products versus Two-Tone Spacing**

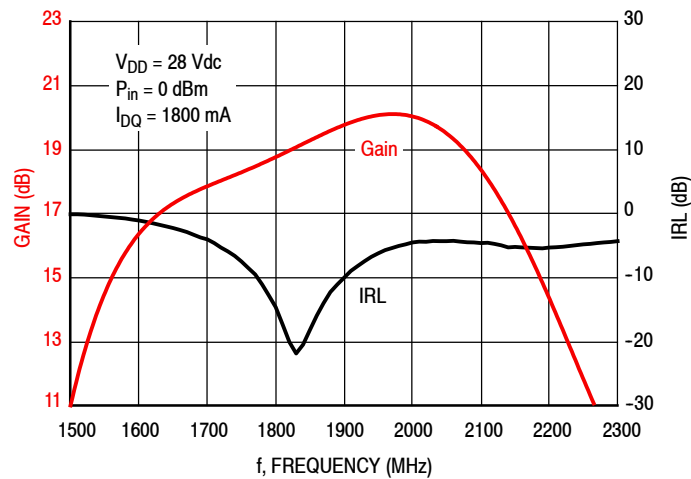


**Figure 5. Output Peak-to-Average Ratio Compression (PARC) versus Output Power**

## TYPICAL CHARACTERISTICS



**Figure 6. Single-Carrier W-CDMA Power Gain, Drain Efficiency and ACPR versus Output Power**



**Figure 7. Broadband Frequency Response**

$V_{DD} = 28 \text{ Vdc}$ ,  $I_{DQ} = 1800 \text{ mA}$ , Pulsed CW,  $10 \mu\text{sec(ON)}$ , 10% Duty Cycle

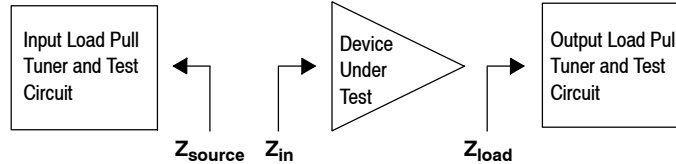
| f<br>(MHz) | $Z_{\text{source}}$<br>( $\Omega$ ) | $Z_{\text{in}}$<br>( $\Omega$ ) | $Z_{\text{load}}^{(1)}$<br>( $\Omega$ ) | Max<br>Linear<br>Gain (dB) | Max Output Power |     |                 |              |       |     |                 |              |
|------------|-------------------------------------|---------------------------------|-----------------------------------------|----------------------------|------------------|-----|-----------------|--------------|-------|-----|-----------------|--------------|
|            |                                     |                                 |                                         |                            | P1dB             |     |                 |              | P3dB  |     |                 |              |
|            |                                     |                                 |                                         |                            | (dBm)            | (W) | $\eta_D$<br>(%) | AM/PM<br>(°) | (dBm) | (W) | $\eta_D$<br>(%) | AM/PM<br>(°) |
| 1805       | $0.80 - j3.40$                      | $1.00 + j3.41$                  | $1.09 - j2.10$                          | 18.5                       | 54.2             | 263 | 57.8            | -10          | 55.1  | 324 | 59.9            | -16          |
| 1840       | $1.10 - j3.70$                      | $1.30 + j3.80$                  | $1.20 - j2.30$                          | 18.5                       | 54.2             | 263 | 57.1            | -9           | 55.2  | 331 | 61.1            | -16          |
| 1880       | $1.40 - j4.10$                      | $1.70 + j4.13$                  | $1.11 - j2.30$                          | 18.7                       | 54.2             | 263 | 57.9            | -10          | 55.0  | 316 | 59.5            | -16          |

(1) Load impedance for optimum P1dB power.

$Z_{\text{source}}$  = Measured impedance presented to the input of the device at the package reference plane.

$Z_{\text{in}}$  = Impedance as measured from gate contact to ground.

$Z_{\text{load}}$  = Measured impedance presented to the output of the device at the package reference plane.



**Figure 8. Load Pull Performance — Maximum P1dB Tuning**

$V_{DD} = 28 \text{ Vdc}$ ,  $I_{DQ} = 1800 \text{ mA}$ , Pulsed CW,  $10 \mu\text{sec(ON)}$ , 10% Duty Cycle

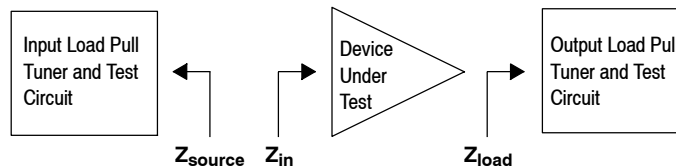
| f<br>(MHz) | $Z_{\text{source}}$<br>( $\Omega$ ) | $Z_{\text{in}}$<br>( $\Omega$ ) | $Z_{\text{load}}^{(1)}$<br>( $\Omega$ ) | Max<br>Linear<br>Gain (dB) | Max Drain Efficiency |     |                 |              |       |     |                 |              |
|------------|-------------------------------------|---------------------------------|-----------------------------------------|----------------------------|----------------------|-----|-----------------|--------------|-------|-----|-----------------|--------------|
|            |                                     |                                 |                                         |                            | P1dB                 |     |                 |              | P3dB  |     |                 |              |
|            |                                     |                                 |                                         |                            | (dBm)                | (W) | $\eta_D$<br>(%) | AM/PM<br>(°) | (dBm) | (W) | $\eta_D$<br>(%) | AM/PM<br>(°) |
| 1805       | $0.80 - j3.40$                      | $1.00 + j3.50$                  | $1.90 - j0.50$                          | 21.7                       | 51.5                 | 141 | 70.0            | -17          | 53.2  | 209 | 71.9            | -22          |
| 1840       | $1.10 - j3.70$                      | $1.30 + j3.83$                  | $1.90 - j0.90$                          | 21.4                       | 51.9                 | 155 | 70.1            | -15          | 52.9  | 195 | 72.8            | -24          |
| 1880       | $1.40 - j4.10$                      | $1.80 + j4.30$                  | $1.50 - j1.10$                          | 21.3                       | 52.2                 | 166 | 69.9            | -17          | 52.8  | 191 | 71.2            | -25          |

(1) Load impedance for optimum P1dB efficiency.

$Z_{\text{source}}$  = Measured impedance presented to the input of the device at the package reference plane.

$Z_{\text{in}}$  = Impedance as measured from gate contact to ground.

$Z_{\text{load}}$  = Measured impedance presented to the output of the device at the package reference plane.



**Figure 9. Load Pull Performance — Maximum Drain Efficiency Tuning**

## P1dB - TYPICAL LOAD PULL CONTOURS — 1840 MHz

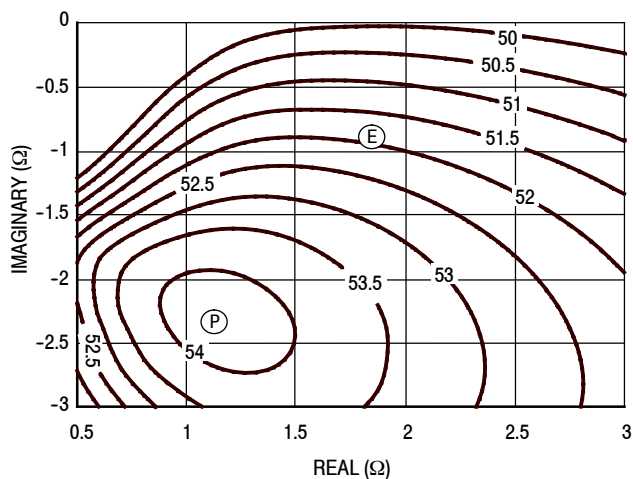


Figure 10. P1dB Load Pull Output Power Contours (dBm)

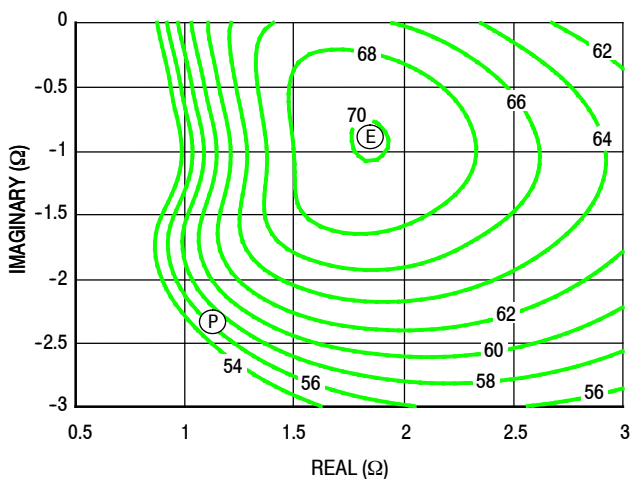


Figure 11. P1dB Load Pull Efficiency Contours (%)

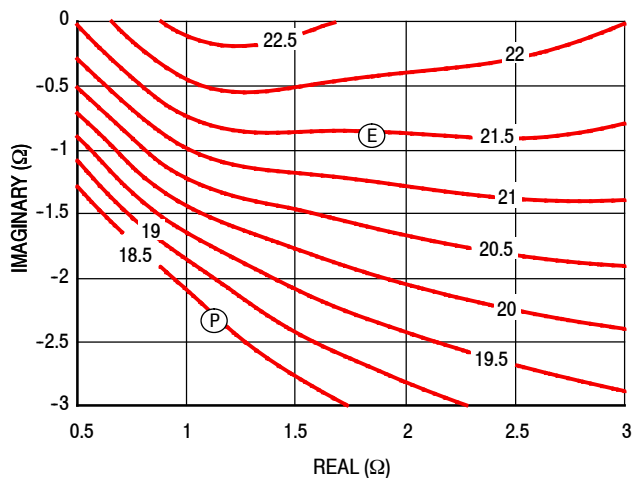


Figure 12. P1dB Load Pull Gain Contours (dB)

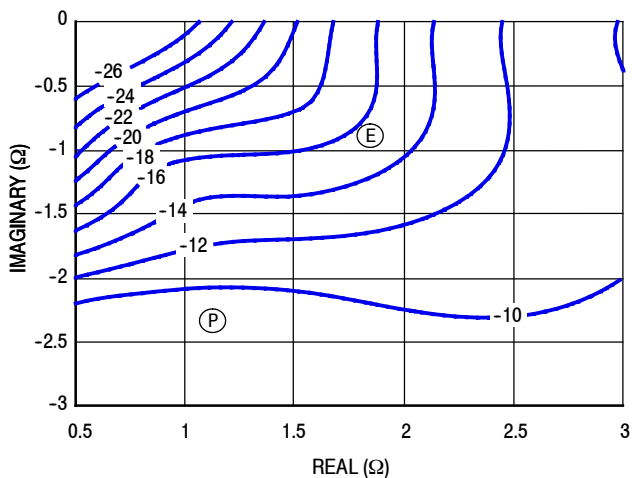


Figure 13. P1dB Load Pull AM/PM Contours (°)

**NOTE:** (P) = Maximum Output Power  
(E) = Maximum Drain Efficiency

- Power Gain
- Drain Efficiency
- ACPR
- PARC

## P3dB - TYPICAL LOAD PULL CONTOURS — 1840 MHz

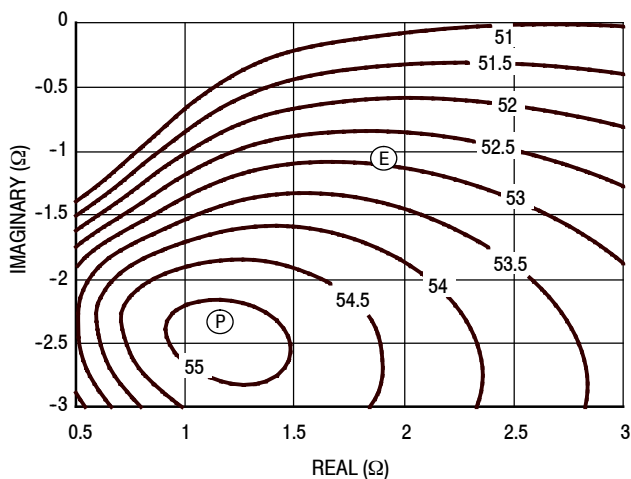


Figure 14. P3dB Load Pull Output Power Contours (dBm)

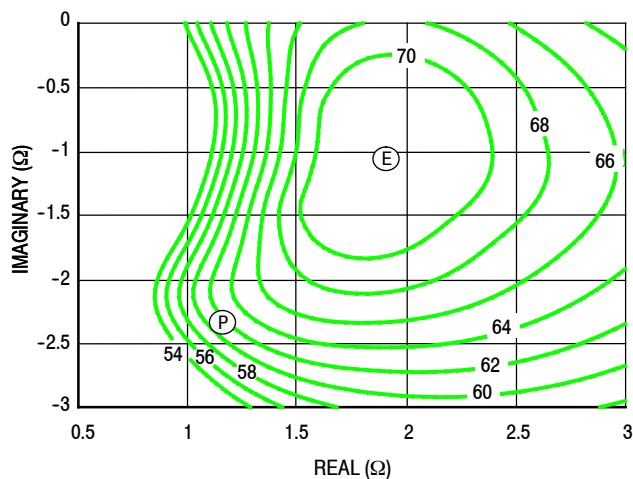


Figure 15. P3dB Load Pull Efficiency Contours (%)

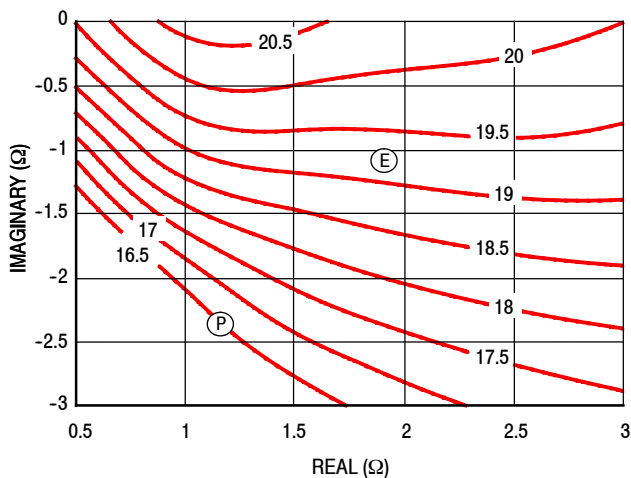


Figure 16. P3dB Load Pull Gain Contours (dB)

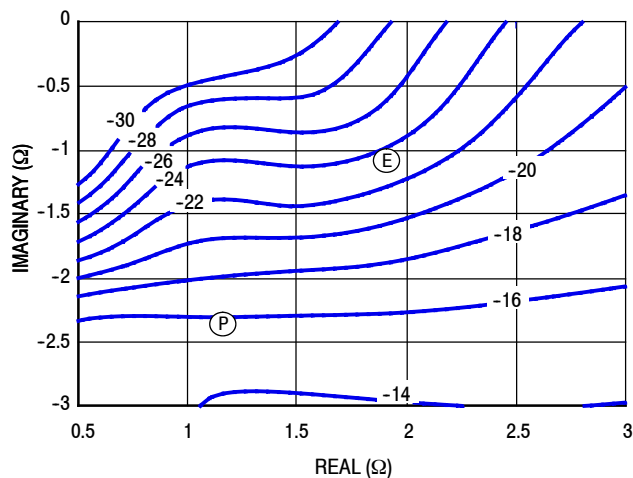
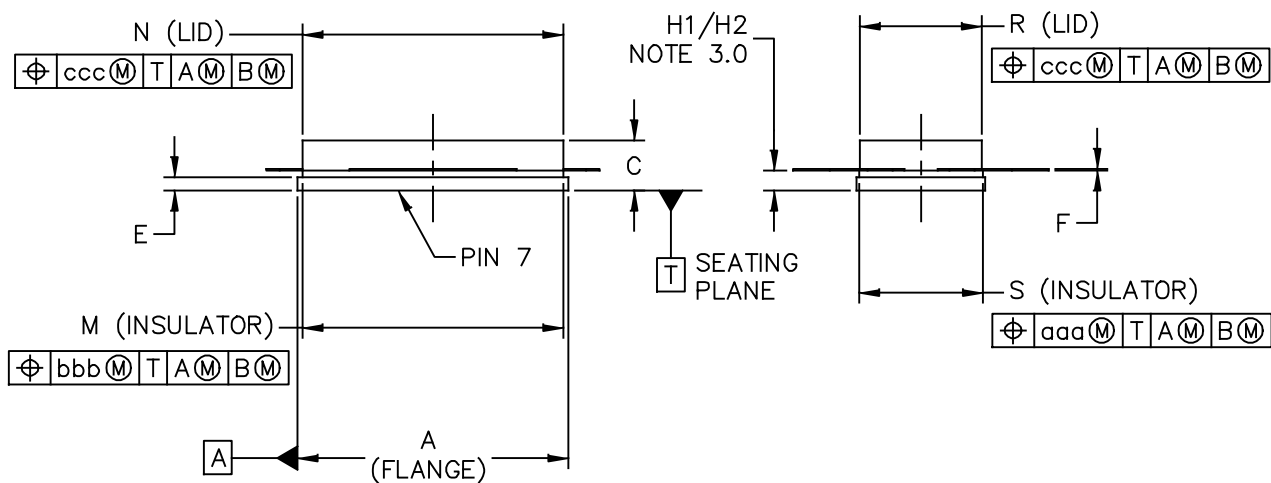
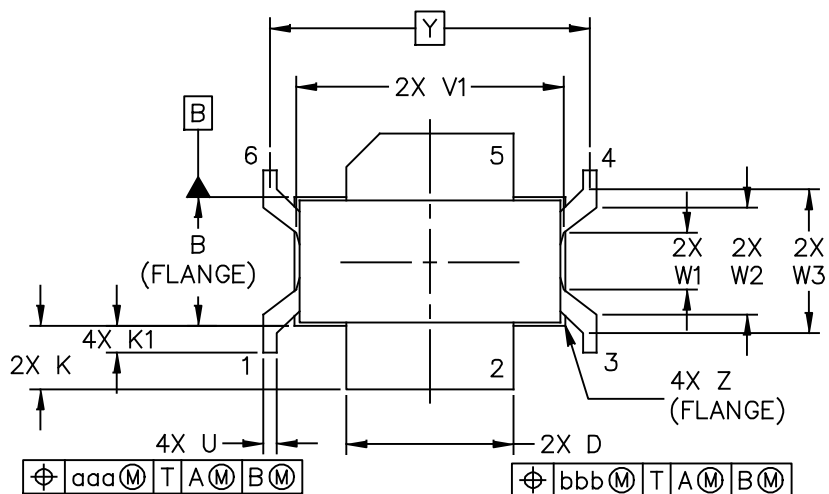


Figure 17. P3dB Load Pull AM/PM Contours (°)

**NOTE:** (P) = Maximum Output Power  
(E) = Maximum Drain Efficiency

- Power Gain
- Drain Efficiency
- ACPR
- PARC

# PACKAGE DIMENSIONS



|                                                         |  |                    |                          |                            |             |
|---------------------------------------------------------|--|--------------------|--------------------------|----------------------------|-------------|
| © FREESCALE SEMICONDUCTOR, INC.<br>ALL RIGHTS RESERVED. |  | MECHANICAL OUTLINE |                          | PRINT VERSION NOT TO SCALE |             |
| TITLE:<br><br>NI-780S-6                                 |  |                    | DOCUMENT NO: 98ASA00443D |                            | REV: A      |
|                                                         |  |                    | CASE NUMBER: 2268-02     |                            | 24 MAY 2012 |
|                                                         |  |                    | STANDARD: NON-JEDEC      |                            |             |

# NOTES:

1.0 CONTROLLING DIMENSION: INCH.

2.0 INTERPRET DIMENSIONS AND TOLERANCES PER ASME Y14.5M–1994.

3.0 DIMENSIONS H1 AND H2 ARE MEASURED .030 INCH (0.762 MM) AWAY FROM FLANGE PARALLEL TO DATUM B. H1 APPLIES TO PINS 2 & 5. H2 APPLIES TO PINS 1, 3, 4 & 6.

| INCH                                                    |      |        | MILLIMETER |                    |     | INCH                     |        |                            | MILLIMETER   |             |     |
|---------------------------------------------------------|------|--------|------------|--------------------|-----|--------------------------|--------|----------------------------|--------------|-------------|-----|
| DIM                                                     | MIN  | MAX    | MIN        | MAX                | DIM | MIN                      | MAX    | MIN                        | MAX          | MIN         | MAX |
| A                                                       | .805 | — .815 | 20.45      | — 20.70            | R   | .365                     | — .375 | 9.27                       | — 9.53       |             |     |
| B                                                       | .380 | — .390 | 9.65       | — 9.91             | S   | .365                     | — .375 | 9.27                       | — 9.53       |             |     |
| C                                                       | .125 | — .170 | 3.18       | — 4.32             | U   | .035                     | — .045 | 0.89                       | — 1.14       |             |     |
| D                                                       | .495 | — .505 | 12.57      | — 12.83            | V1  | .795                     | — .805 | 20.19                      | — 20.45      |             |     |
| E                                                       | .035 | — .045 | 0.89       | — 1.14             | W1  | .165                     | — .175 | 4.19                       | — 4.45       |             |     |
| F                                                       | .004 | — .007 | 0.10       | — 0.18             | W2  | .315                     | — .325 | 8.00                       | — 8.26       |             |     |
| H1                                                      | .057 | — .067 | 1.45       | — 1.70             | W3  | .425                     | — .435 | 10.80                      | — 11.05      |             |     |
| H2                                                      | .054 | — .070 | 1.37       | — 1.78             | Y   | .956 BSC                 |        |                            | 24.28 BSC    |             |     |
| K                                                       | .170 | — .210 | 4.32       | — 5.33             | Z   | R.000 — R.040            |        |                            | R.00 — R1.02 |             |     |
| K1                                                      | .070 | — .090 | 1.78       | — 2.29             | aaa | — .005                   | —      | —                          | 0.127        | —           |     |
| M                                                       | .774 | — .786 | 19.66      | — 19.96            | bbb | — .010                   | —      | —                          | 0.254        | —           |     |
| N                                                       | .772 | — .788 | 19.61      | — 20.02            | ccc | — .015                   | —      | —                          | 0.381        | —           |     |
| © FREESCALE SEMICONDUCTOR, INC.<br>ALL RIGHTS RESERVED. |      |        |            | MECHANICAL OUTLINE |     |                          |        | PRINT VERSION NOT TO SCALE |              |             |     |
| TITLE:<br><br>NI—780S—6                                 |      |        |            |                    |     | DOCUMENT NO: 98ASA00443D |        |                            |              | REV: A      |     |
|                                                         |      |        |            |                    |     | CASE NUMBER: 2268—02     |        |                            |              | 24 MAY 2012 |     |
|                                                         |      |        |            |                    |     | STANDARD: NON—JEDEC      |        |                            |              |             |     |

## PRODUCT DOCUMENTATION, SOFTWARE AND TOOLS

Refer to the following documents, software and tools to aid your design process.

### Application Notes

- AN1955: Thermal Measurement Methodology of RF Power Amplifiers

### Engineering Bulletins

- EB212: Using Data Sheet Impedances for RF LDMOS Devices

### Software

- Electromigration MTTF Calculator
- RF High Power Model
- .s2p File

### Development Tools

- Printed Circuit Boards

For Software and Tools, do a Part Number search at <http://www.freescale.com>, and select the “Part Number” link. Go to the Software & Tools tab on the part’s Product Summary page to download the respective tool.

## R5 TAPE AND REEL OPTION

R5 Suffix = 50 Units, 44 mm Tape Width, 13-inch Reel.

The R5 tape and reel option for AFT18S230S part will be available for 2 years after release of AFT18S230S. Freescale Semiconductor, Inc. reserves the right to limit the quantities that will be delivered in the R5 tape and reel option. At the end of the 2 year period customers who have purchased this device in the R5 tape and reel option will be offered AFT18S230S in the R3 tape and reel option.

## REVISION HISTORY

The following table summarizes revisions to this document.

| Revision | Date      | Description                                                                                                                 |
|----------|-----------|-----------------------------------------------------------------------------------------------------------------------------|
| 0        | Aug. 2012 | • Initial Release of Data Sheet                                                                                             |
| 1        | Nov. 2012 | • Corrected Tape and Reel tape width from 32 mm to 44 mm, p. 1, 12                                                          |
| 2        | Mar. 2013 | • Table 1. Maximum Ratings: added CW Operation rating and derate factor if the part is biased through pin 4 and pin 6, p. 2 |

### ***How to Reach Us:***

**Home Page:**  
[freescale.com](http://freescale.com)

**Web Support:**  
[freescale.com/support](http://freescale.com/support)

Information in this document is provided solely to enable system and software implementers to use Freescale products. There are no express or implied copyright licenses granted hereunder to design or fabricate any integrated circuits based on the information in this document.

Freescale reserves the right to make changes without further notice to any products herein. Freescale makes no warranty, representation, or guarantee regarding the suitability of its products for any particular purpose, nor does Freescale assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation consequential or incidental damages. "Typical" parameters that may be provided in Freescale data sheets and/or specifications can and do vary in different applications, and actual performance may vary over time. All operating parameters, including "typicals," must be validated for each customer application by customer's technical experts. Freescale does not convey any license under its patent rights nor the rights of others. Freescale sells products pursuant to standard terms and conditions of sale, which can be found at the following address: [freescale.com/SalesTermsandConditions](http://freescale.com/SalesTermsandConditions).

Freescale, the Freescale logo, Altivec, C-5, CodeTest, CodeWarrior, ColdFire, C-Ware, Energy Efficient Solutions logo, Kinetis, mobileGT, PowerQUICC, Processor Expert, QorIQ, Qorivva, StarCore, Symphony, and VortiQa are trademarks of Freescale Semiconductor, Inc., Reg. U.S. Pat. & Tm. Off. Airfast, BeeKit, BeeStack, ColdFire+, CoreNet, Flexis, MagniV, MXC, Platform in a Package, QorIQ Qonverge, QUICC Engine, Ready Play, SafeAssure, SMARTMOS, TurboLink, Vybrid, and Xtrinsic are trademarks of Freescale Semiconductor, Inc. All other product or service names are the property of their respective owners.

© 2012-2013 Freescale Semiconductor, Inc.

# Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

NXP:

[AFT18S230SR3](#) [AFT18S230SR5](#)