

Replaced by MHL9318N. There are no form, fit or function changes with this part replacement. N suffix added to part number to indicate transition to lead-free terminations.

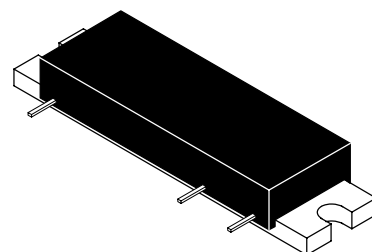
MHL9318

**3.0 W, 17.5 dB
860 - 900 MHz
RF LINEAR LDMOS AMPLIFIER**

Cellular Band RF Linear LDMOS Amplifier

Designed for ultra-linear amplifier applications in 50 ohm systems operating in the cellular frequency band. A silicon FET Class A design provides outstanding linearity and gain. In addition, the excellent group delay and phase linearity characteristics are ideal for the most demanding analog or digital modulation systems, such as TDMA and CDMA.

- Third Order Intercept: 49 dBm Typ
- Power Gain: 17.5 dB Typ (@ f = 880 MHz)
- Excellent Phase Linearity and Group Delay Characteristics
- Ideal for Feedforward Base Station Applications
- For Use in TDMA and CDMA Multi-Carrier Applications



CASE 301AS-01, STYLE 1

Table 1. Absolute Maximum Ratings ($T_C = 25^\circ\text{C}$ unless otherwise noted)

| Rating | Symbol | Value | Unit |
|----------------------------------|-----------|--------------|------------------|
| DC Supply Voltage | V_{DD} | 30 | Vdc |
| RF Input Power | P_{in} | +20 | dBm |
| Storage Temperature Range | T_{stg} | - 40 to +100 | $^\circ\text{C}$ |
| Operating Case Temperature Range | T_C | - 20 to +100 | $^\circ\text{C}$ |

Table 2. Electrical Characteristics ($V_{DD} = 28\text{ Vdc}$, $T_C = 25^\circ\text{C}$; 50 Ω System)

| Characteristic | Symbol | Min | Typ | Max | Unit |
|--|------------------|-----|-------|-------|------|
| Supply Current | I_{DD} | — | 500 | 560 | mA |
| Power Gain (f = 880 MHz) | G_p | 17 | 17.5 | 18.5 | dB |
| Gain Flatness (f = 860 - 900 MHz) | G_f | — | 0.1 | 0.2 | dB |
| Power Output @ 1 dB Comp. (f = 880 MHz) | $P_{out\ 1\ dB}$ | — | 35.5 | — | dBm |
| Input VSWR (f = 860 - 900 MHz) | $VSWR_{in}$ | — | 1.2:1 | 1.5:1 | |
| Output VSWR (f = 860 - 900 MHz) | $VSWR_{out}$ | — | 1.2:1 | 1.5:1 | |
| Third Order Intercept (f1 = 879 MHz, f2 = 884 MHz) | ITO | 47 | 49 | — | dBm |
| Noise Figure (f = 960 MHz) | NF | — | 3 | 4.5 | dB |

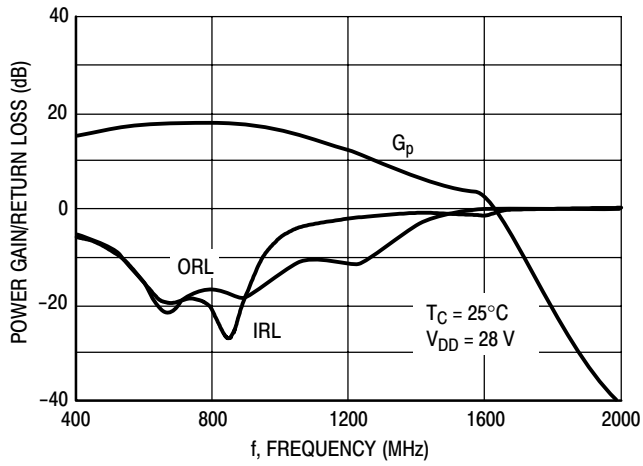


Figure 1. Power Gain, Input Return Loss, Output Return Loss versus Frequency

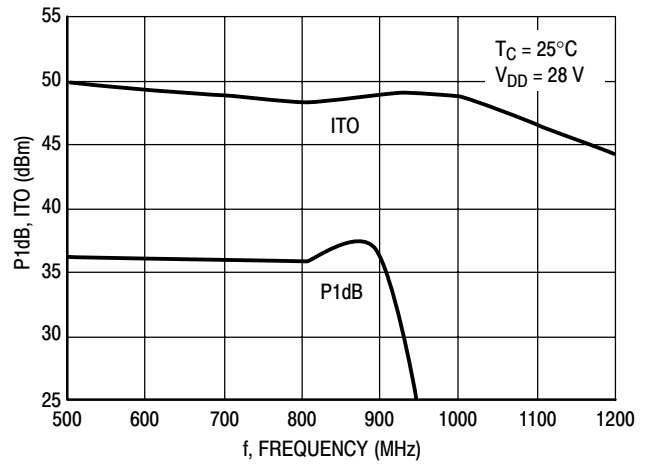


Figure 2. P1dB, ITO versus Frequency

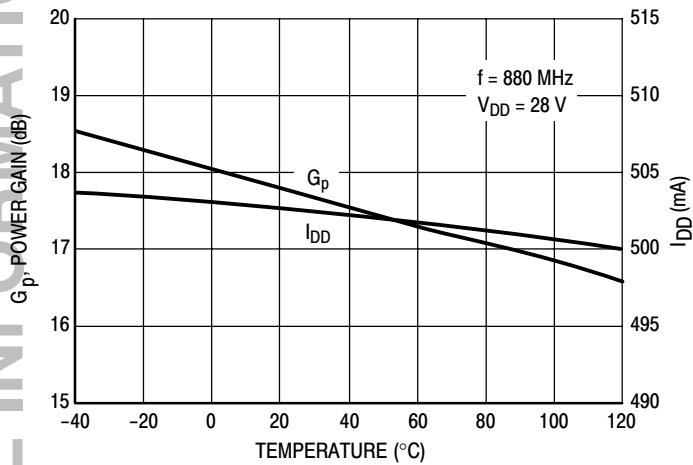


Figure 3. Power Gain, IDD versus Temperature

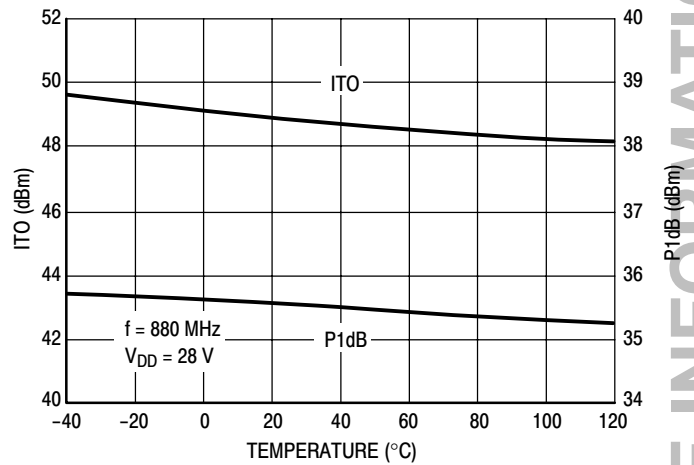


Figure 4. ITO, P1dB versus Temperature

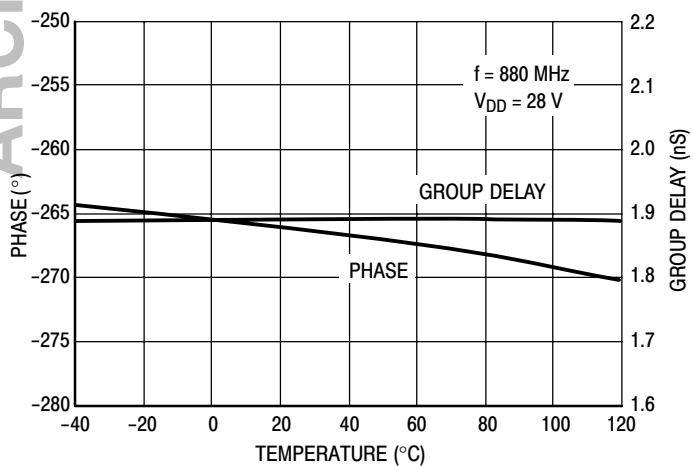


Figure 5. Phase⁽¹⁾, Group Delay⁽¹⁾ versus Temperature
1. In Production Test Fixture

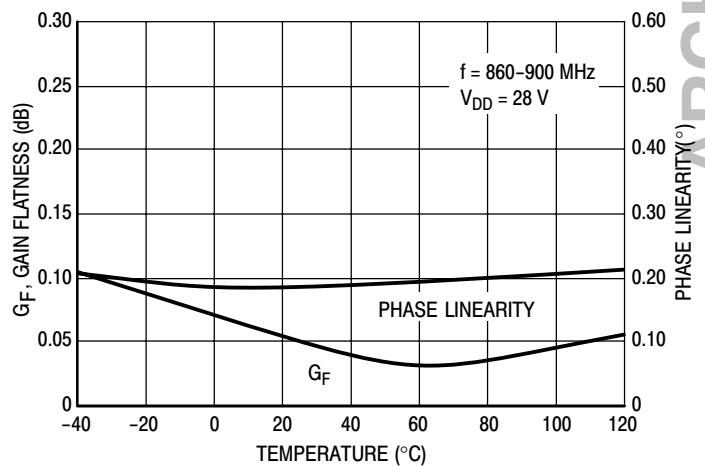


Figure 6. Gain Flatness, Phase Linearity versus Temperature

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TYPICAL CHARACTERISTICS

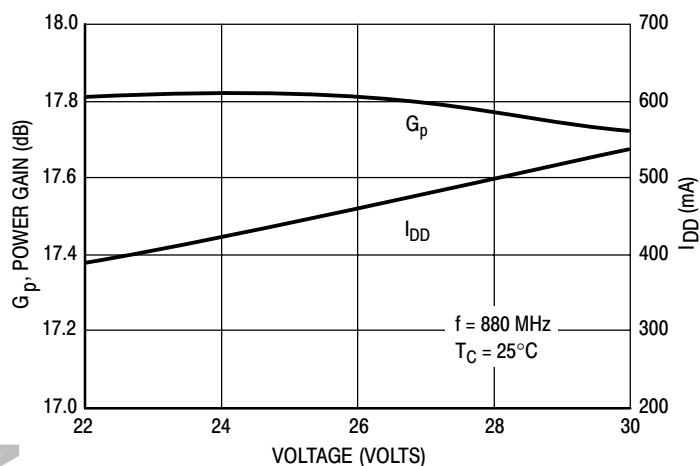


Figure 7. Power Gain, I_{DD} versus Voltage

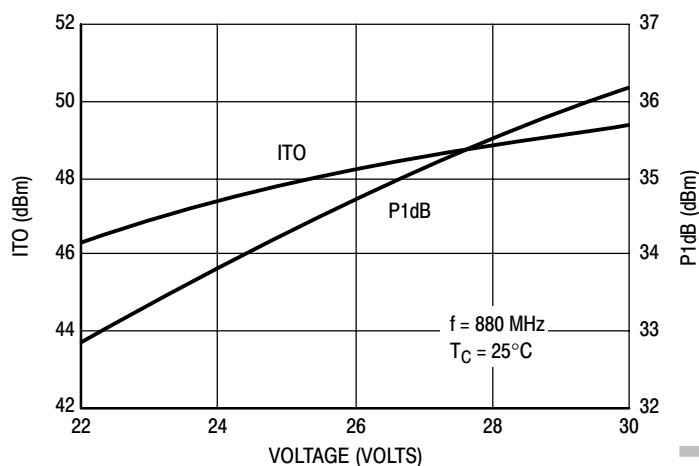


Figure 8. ITO, P1dB versus Voltage

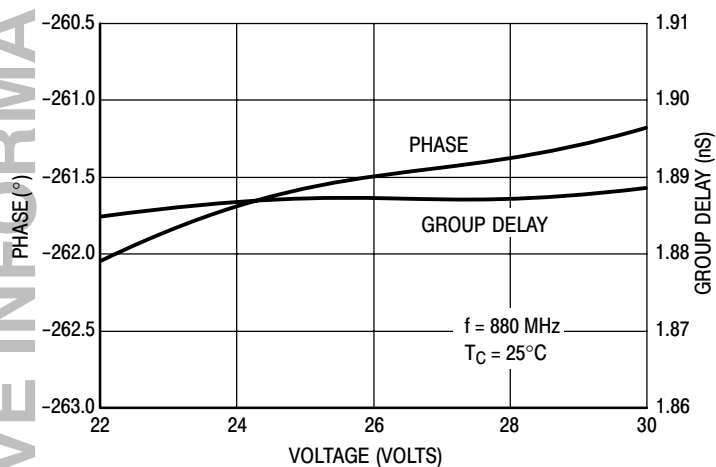


Figure 9. Phase⁽¹⁾, Group Delay⁽¹⁾ versus Voltage

1. In Production Test Fixture

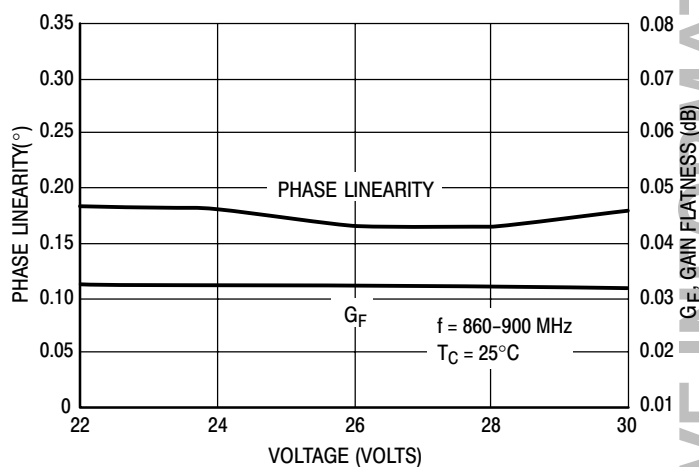


Figure 10. Phase Linearity, Gain Flatness versus Voltage

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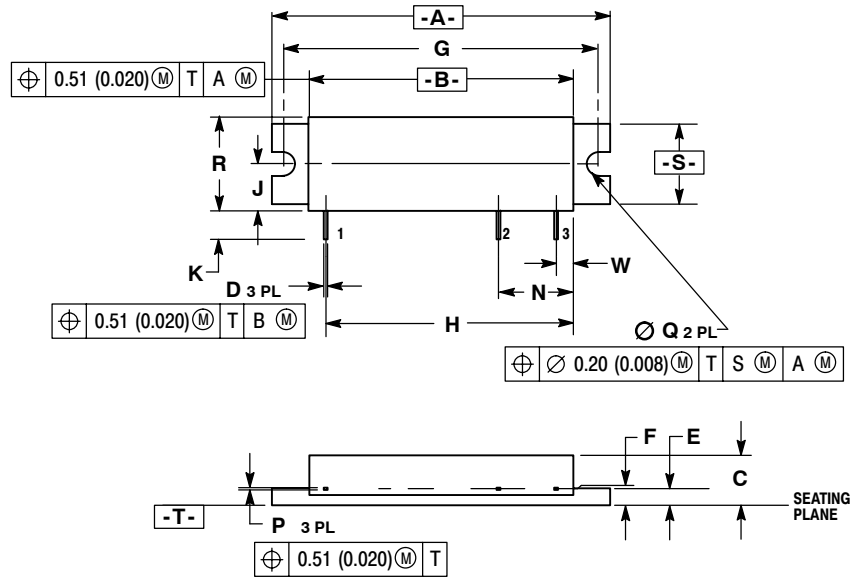
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PACKAGE DIMENSIONS



- NOTES:
 1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
 2. CONTROLLING DIMENSION: INCH.
 3. DIMENSION F TO CENTER OF LEADS.

| DIM | INCHES | | MILLIMETERS | |
|-----|-----------|-------|-------------|-------|
| | MIN | MAX | MIN | MAX |
| A | 1.760 | 1.780 | 44.70 | 45.21 |
| B | 1.370 | 1.390 | 34.80 | 35.31 |
| C | 0.245 | 0.265 | 6.22 | 6.73 |
| D | 0.017 | 0.023 | 0.43 | 0.58 |
| E | 0.080 | 0.100 | 2.03 | 2.54 |
| F | 0.086 BSC | | 2.18 BSC | |
| G | 1.650 BSC | | 41.91 BSC | |
| H | 1.290 BSC | | 32.77 BSC | |
| J | 0.266 | 0.280 | 6.76 | 7.11 |
| K | 0.125 | 0.165 | 3.18 | 4.19 |
| N | 0.390 BSC | | 9.91 BSC | |
| P | 0.008 | 0.013 | 0.20 | 0.33 |
| Q | 0.118 | 0.132 | 3.00 | 3.35 |
| R | 0.535 | 0.555 | 13.59 | 14.10 |
| S | 0.445 | 0.465 | 11.30 | 11.81 |
| W | 0.090 BSC | | 2.29 BSC | |

- STYLE 1:
 PIN 1: RF INPUT
 2: VDD
 3: RF OUTPUT
 CASE: GROUND

**CASE 301AS-01
 ISSUE A**

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