

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.

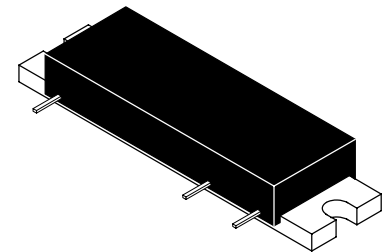
**MHL9318**

**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



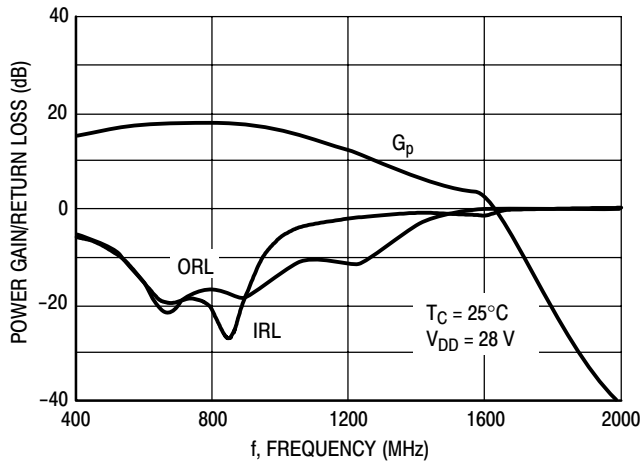
**CASE 301AS-01, STYLE 1**

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

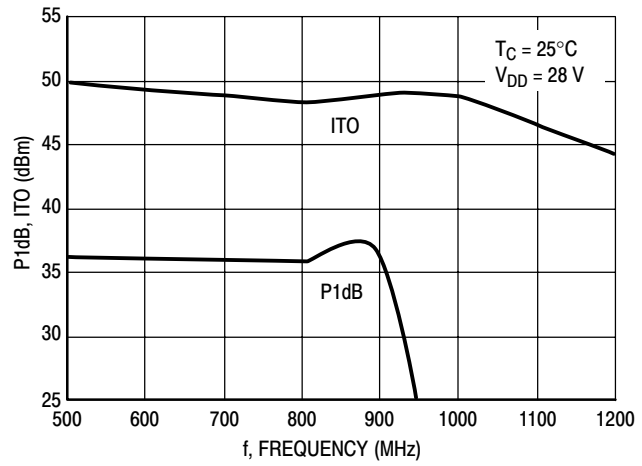
Rating	Symbol	Value	Unit
DC Supply Voltage	$V_{DD}$	30	Vdc
RF Input Power	$P_{in}$	+20	dBm
Storage Temperature Range	$T_{stg}$	- 40 to +100	$^\circ\text{C}$
Operating Case Temperature Range	$T_C$	- 20 to +100	$^\circ\text{C}$

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

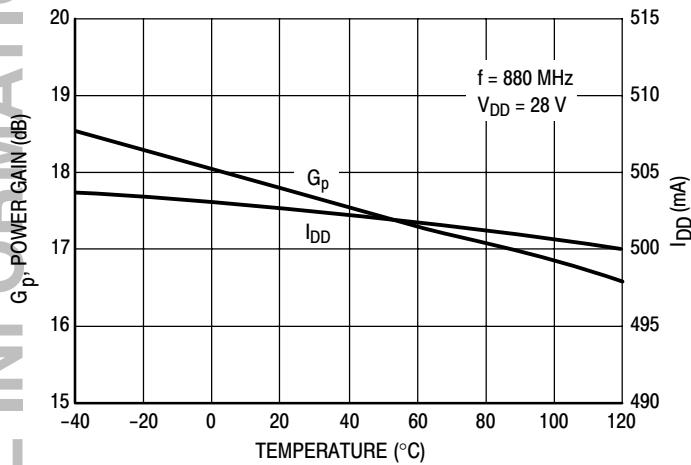
Characteristic	Symbol	Min	Typ	Max	Unit
Supply Current	$I_{DD}$	—	500	560	mA
Power Gain (f = 880 MHz)	$G_p$	17	17.5	18.5	dB
Gain Flatness (f = 860 - 900 MHz)	$G_f$	—	0.1	0.2	dB
Power Output @ 1 dB Comp. (f = 880 MHz)	$P_{out\ 1\ dB}$	—	35.5	—	dBm
Input VSWR (f = 860 - 900 MHz)	$VSWR_{in}$	—	1.2:1	1.5:1	
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



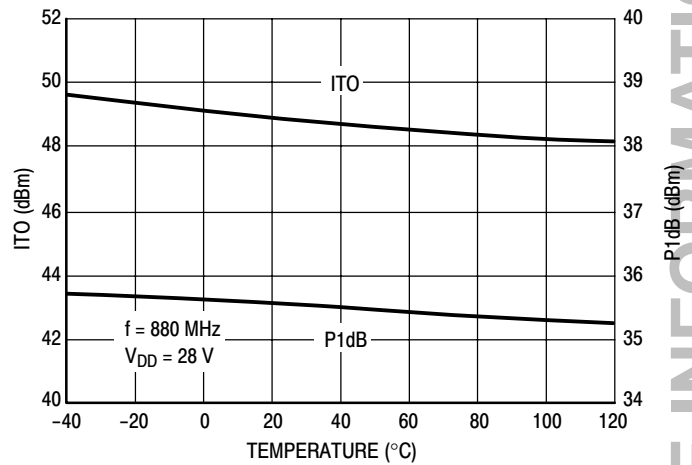
**Figure 1. Power Gain, Input Return Loss, Output Return Loss versus Frequency**



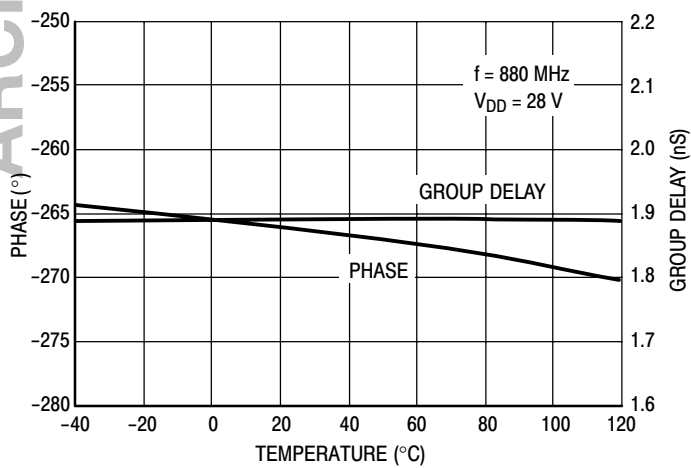
**Figure 2. P1dB, ITO versus Frequency**



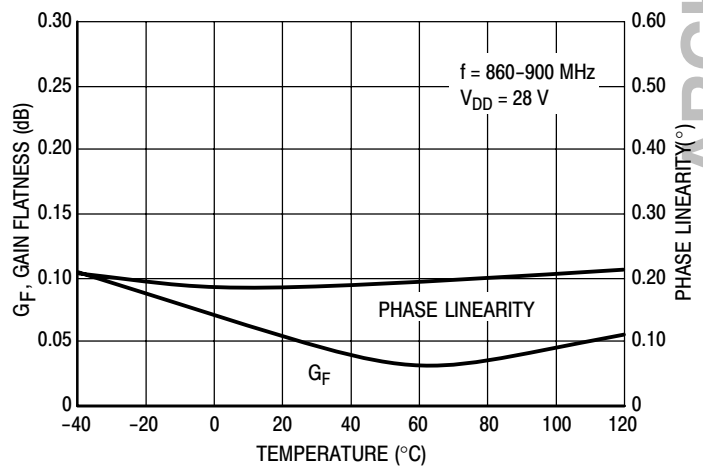
**Figure 3. Power Gain, IDD versus Temperature**



**Figure 4. ITO, P1dB versus Temperature**



**Figure 5. Phase<sup>(1)</sup>, Group Delay<sup>(1)</sup> versus Temperature**  
 1. In Production Test Fixture



**Figure 6. Gain Flatness, Phase Linearity versus Temperature**

## TYPICAL CHARACTERISTICS

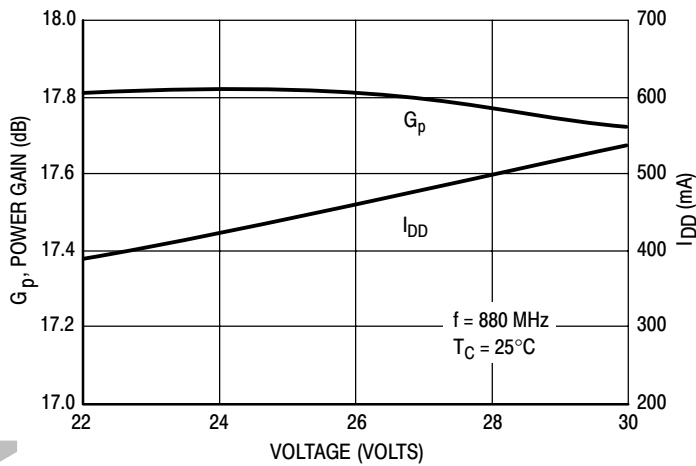


Figure 7. Power Gain, I<sub>DD</sub> versus Voltage

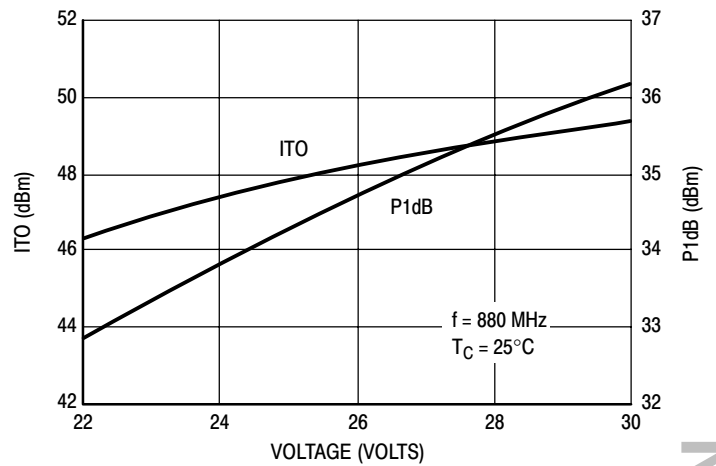


Figure 8. ITO, P1dB versus Voltage

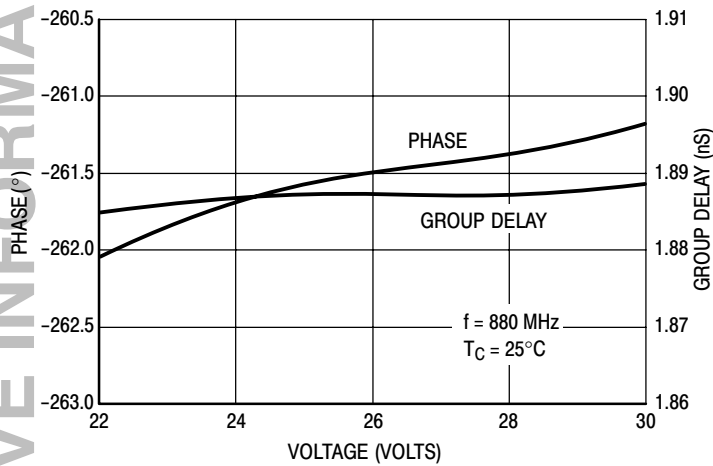


Figure 9. Phase<sup>(1)</sup>, Group Delay<sup>(1)</sup> versus Voltage  
1. In Production Test Fixture

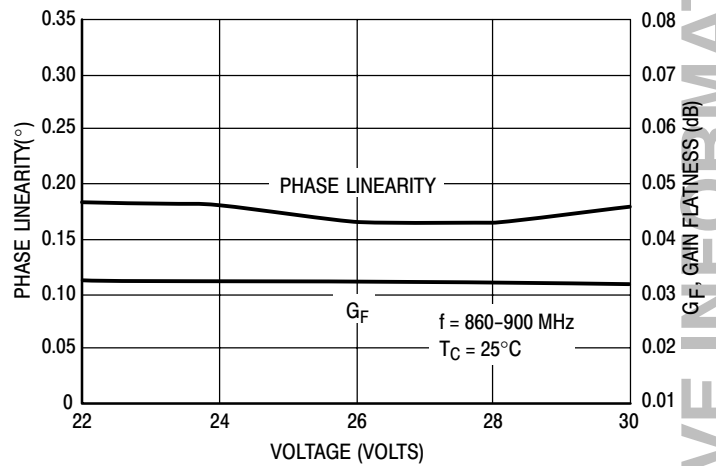


Figure 10. Phase Linearity, Gain Flatness versus Voltage

ARCHIVE INFORMATION

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# NOTES

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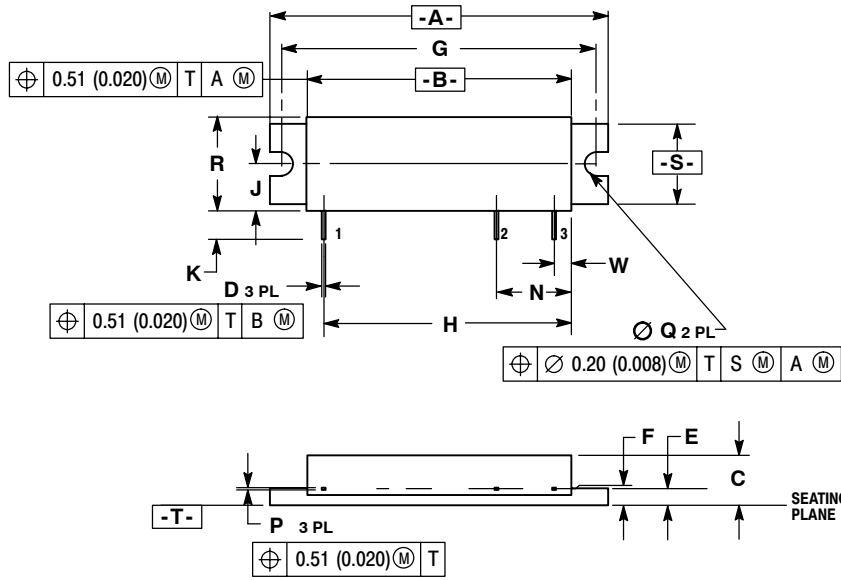
ARCHIVE INFORMATION

# NOTES

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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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