

PCS Band**RF Linear LDMOS Amplifier**

Designed for ultra-linear amplifier applications in 50 ohm systems operating in the PCS 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 digital modulation systems, such as TDMA and CDMA.

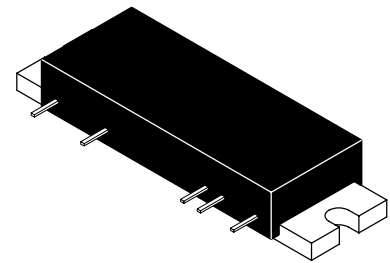
- Third Order Intercept: 49.5 dBm Typ
- Power Gain: 29 dB Typ (@ f = 1960 MHz)
- Input VSWR \leq 1.5:1

Features

- Excellent Phase Linearity and Group Delay Characteristics
- Ideal for Feedforward Base Station Applications
- Replaced MHL19936. There are no form, fit or function changes with this part replacement.
- N Suffix Indicates Lead-Free Terminations

MHL19936N

1900-2000 MHz
12 W, 29 dB
RF LINEAR LDMOS AMPLIFIER

**CASE 301AY-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}	+16	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 ($V_{DD} = 26$ Vdc, $T_C = 25^\circ\text{C}$; 50 Ω System)

Characteristic	Symbol	Min	Typ	Max	Unit
Supply Current	I_{DD}	—	1.4	1.45	A
Power Gain (f = 1960 MHz)	G_p	27.5	29	30.5	dB
Gain Flatness (f = 1900 - 2000 MHz)	G_F	—	0.2	0.4	dB
Power Output @ 1 dB Compression (f = 1950 MHz)	P_{1dB}	40	41	—	dBm
Third Order Intercept (f1 = 1950 MHz, f2 = 1955 MHz)	ITO	49	49.5	—	dBm
Noise Figure (f = 2000 MHz)	NF	—	4.2	4.5	dB

NOTE - CAUTION - MOS devices are susceptible to damage from electrostatic charge. Reasonable precautions in handling and packaging MOS devices should be observed.

TYPICAL CHARACTERISTICS

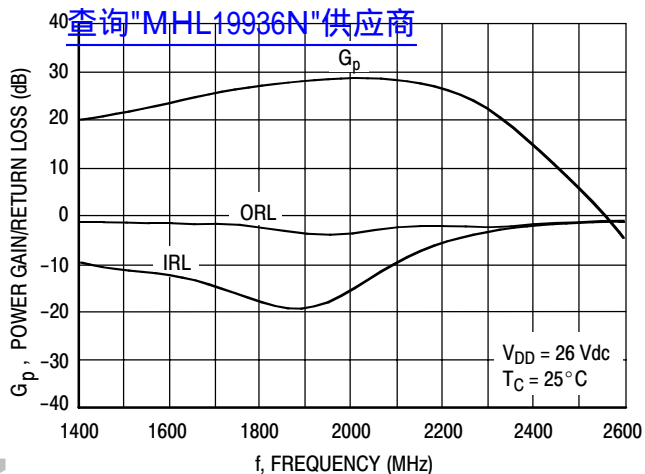


Figure 1. Power Gain, Input Return Loss, Output Return Loss versus Frequency

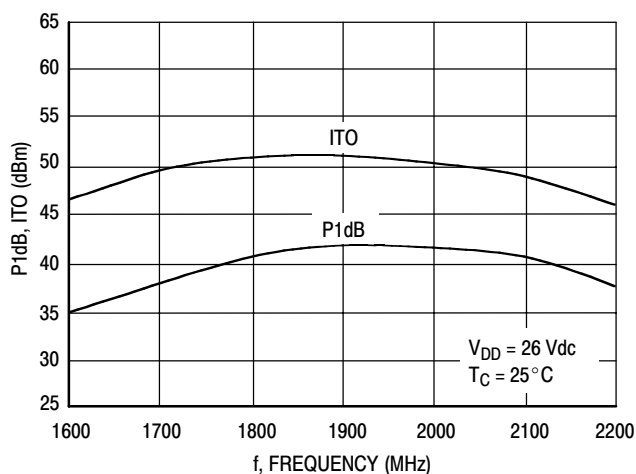


Figure 2. P1dB, ITO versus Frequency

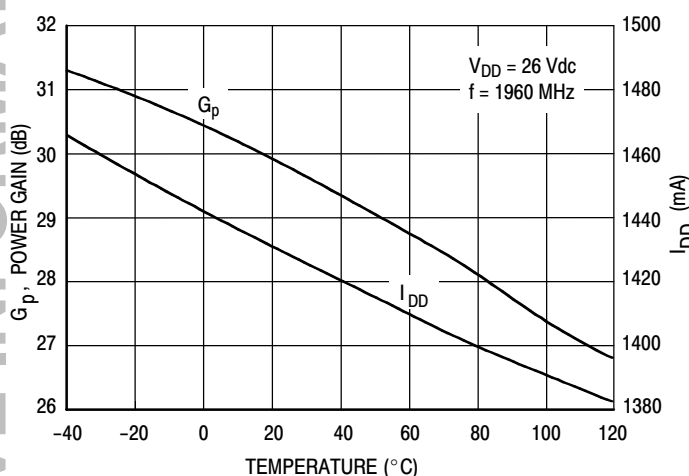


Figure 3. Power Gain, I_{DD} versus Temperature

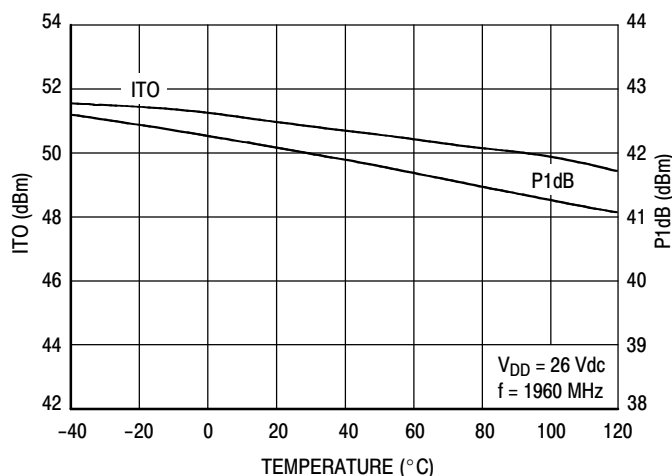


Figure 4. ITO, P1dB versus Temperature

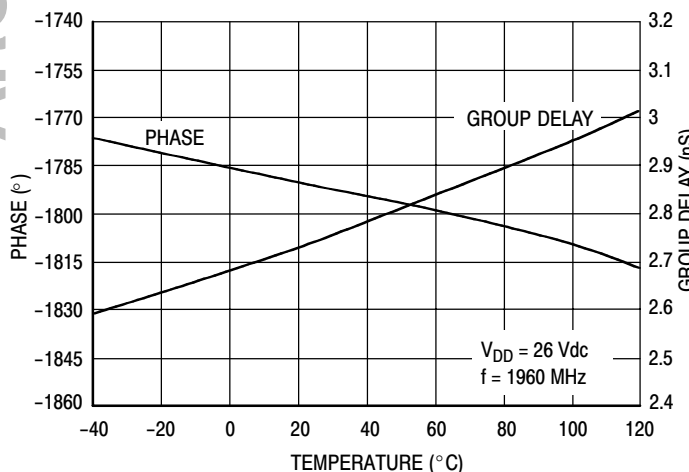


Figure 5. Phase⁽¹⁾, Group Delay⁽¹⁾ versus Temperature

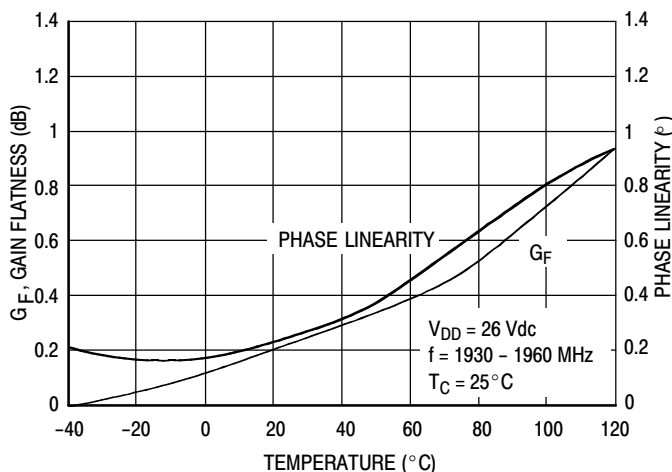


Figure 6. Gain Flatness, Phase Linearity versus Temperature

1. In Production Test Fixture

TYPICAL CHARACTERISTICS

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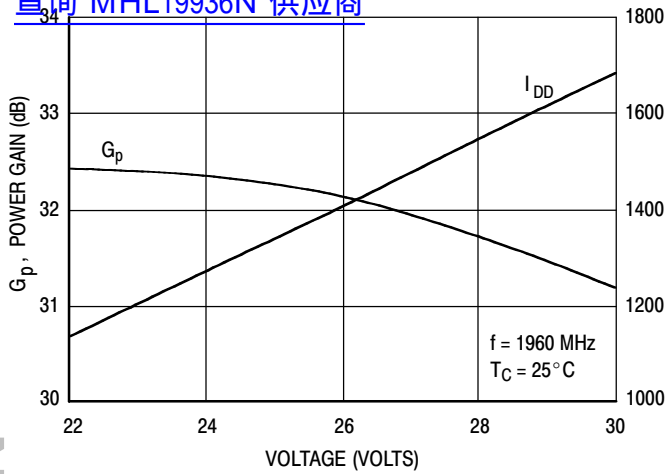


Figure 7. Power Gain, I_{DD} versus Voltage

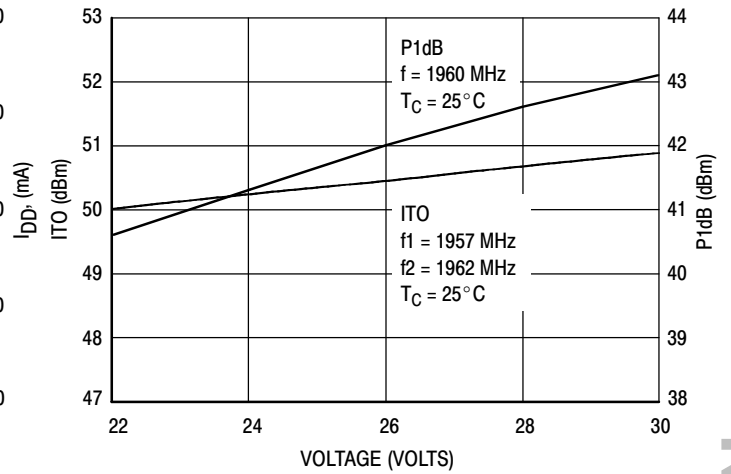


Figure 8. ITO, P1dB versus Voltage

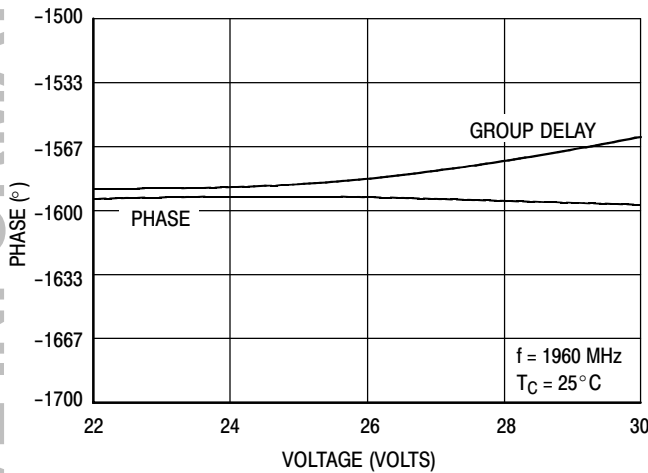


Figure 9. Phase⁽¹⁾, Group Delay⁽¹⁾ versus Voltage

1. In Production Test Fixture

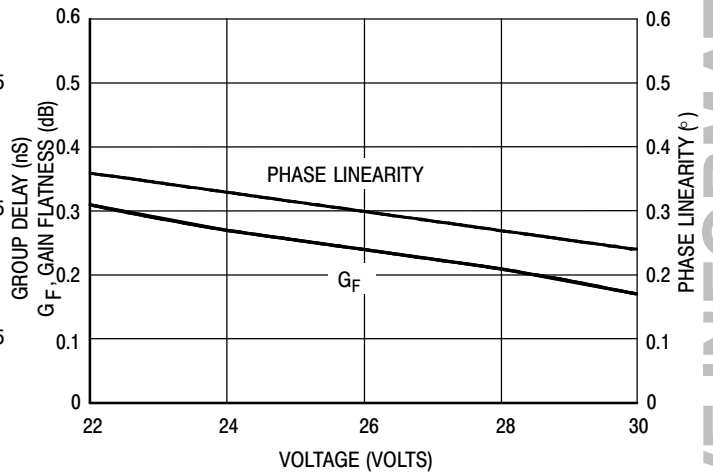


Figure 10. Phase Linearity, Gain Flatness versus Voltage

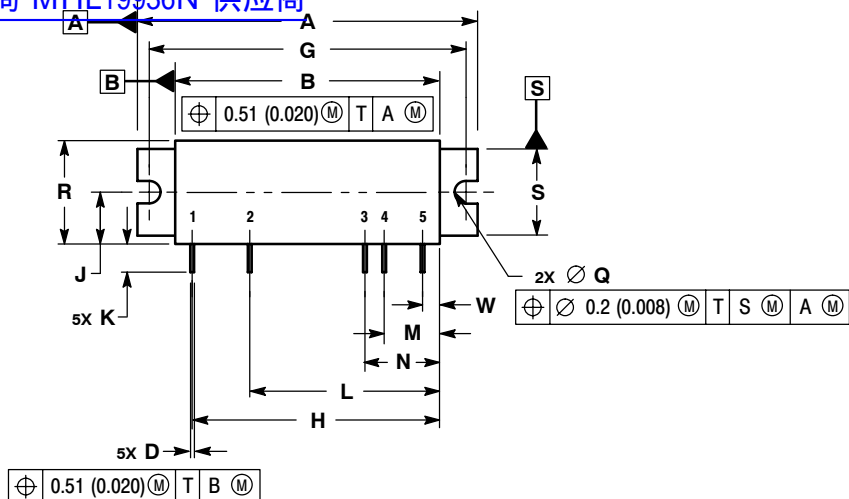
ARCHIVE INFORMATION

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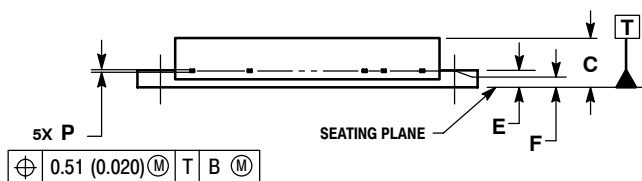
PACKAGE DIMENSIONS

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- NOTES:
1. CONTROLLING DIMENSION: MILLIMETER.
 2. INTERPRET DIMENSIONS AND TOLERANCES PER ANSI Y14.5M, 1982.
 3. DIMENSION F TO CENTER LINE OF LEADS.

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	44.7	45.21	1.760	1.780
B	34.8	35.31	1.370	1.390
C	6.22	6.73	0.245	0.265
D	0.43	0.58	0.017	0.023
E	2.03	2.54	0.080	0.100
F	2.18 BSC		0.086 BSC	
G	41.91 BSC		1.650 BSC	
H	32.77 BSC		1.290 BSC	
J	6.76	7.11	0.266	0.280
K	3.18	4.19	0.125	0.165
L	25.15 BSC		0.990 BSC	
M	7.37 BSC		0.290 BSC	
N	9.91 BSC		0.390 BSC	
P	0.2	0.33	0.008	0.013
Q	3	3.35	0.118	0.132
R	13.59	14.1	0.535	0.555
S	11.3	11.81	0.445	0.465
W	2.29 BSC		0.090 BSC	



- STYLE 1:
- PIN 1: RF INPUT
 - VDD1
 - VDD2
 - VDD3
 - RF OUTPUT
- CASE: GROUND

CASE 301AY-01
ISSUE A

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