Replaced by MHL19936N. 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.

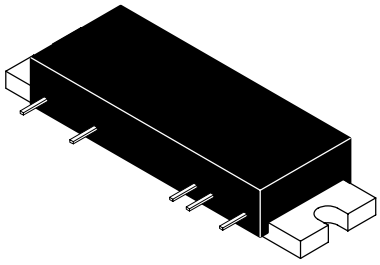
PCS Band
RF Linear LDMOS Amplifier

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)
- Excellent Phase Linearity and Group Delay Characteristics
- Ideal for Feedforward Base Station Applications

MHL19936

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



CASE 301AY-01, STYLE 1

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Table 1. Absolute Maximum Ratings (T_C = 25°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	°C
Operating Case Temperature Range	T_C	- 20 to +100	°C

Table 2. Electrical Characteristics (V_{DD} = 26 Vdc, T_C = 25°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	28	29	30	dB
Gain Flatness	(f = 1900 - 2000 MHz)	G_F	—	0.2	0.4	dB
Power Output @ 1 dB Comp.	(f = 1950 MHz)	P1dB	40	41	—	dBm
Input VSWR	(f = 1900 - 2000 MHz)	$VSWR_{in}$	—	1.2:1	1.5:1	
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

freescale™ semiconductor

TYPICAL CHARACTERISTICS

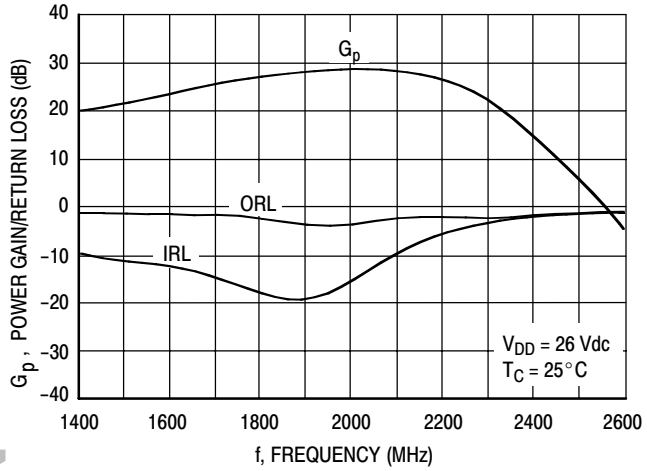

Figure 1. Power Gain, Input Return Loss, Output Return Loss versus Frequency

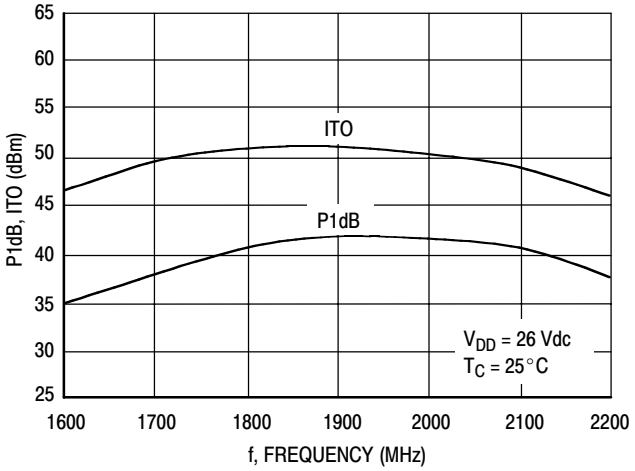

Figure 2. P1dB, ITO versus Frequency

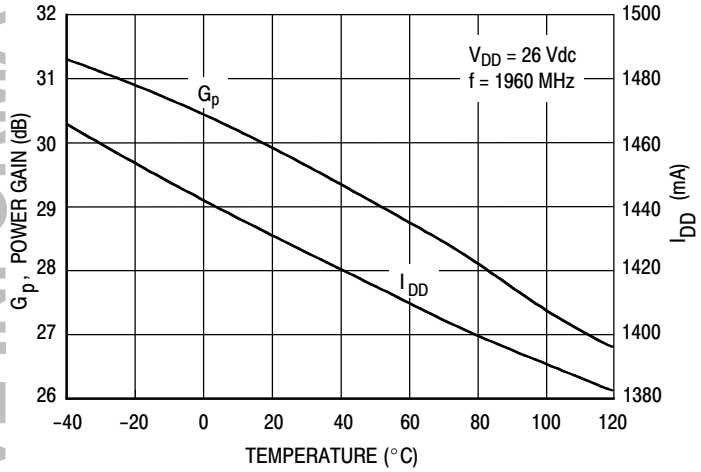

Figure 3. Power Gain, I_{DD} versus Temperature

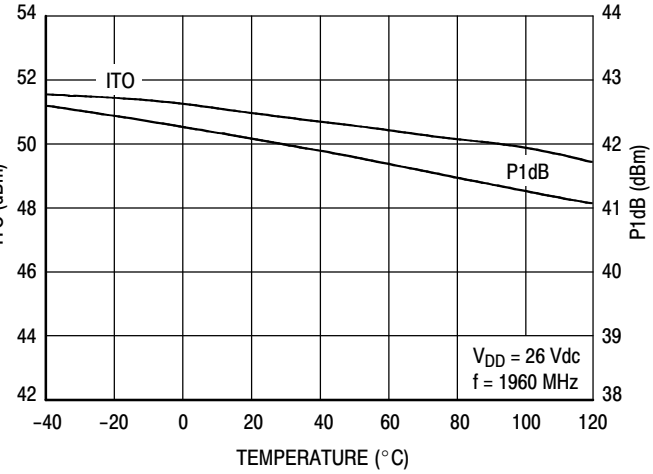

Figure 4. ITO, P1dB versus Temperature

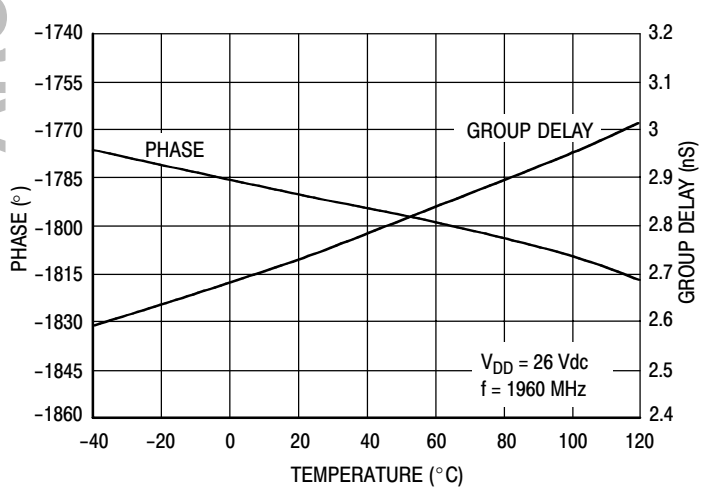

Figure 5. Phase(1), Group Delay(1) versus Temperature

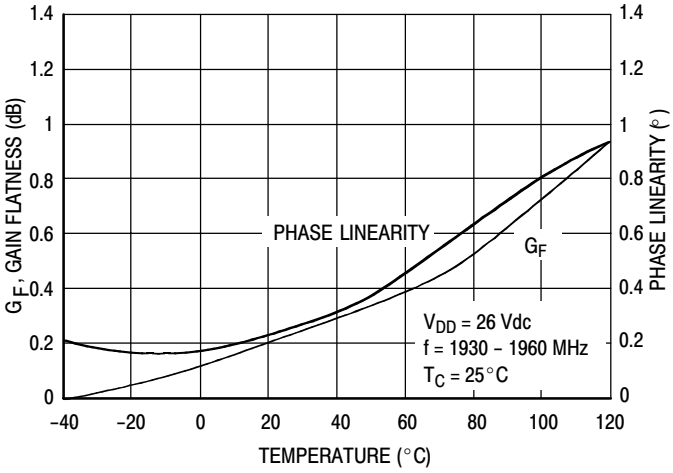

Figure 6. Gain Flatness, Phase Linearity versus Temperature

1. In Production Test Fixture

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TYPICAL CHARACTERISTICS

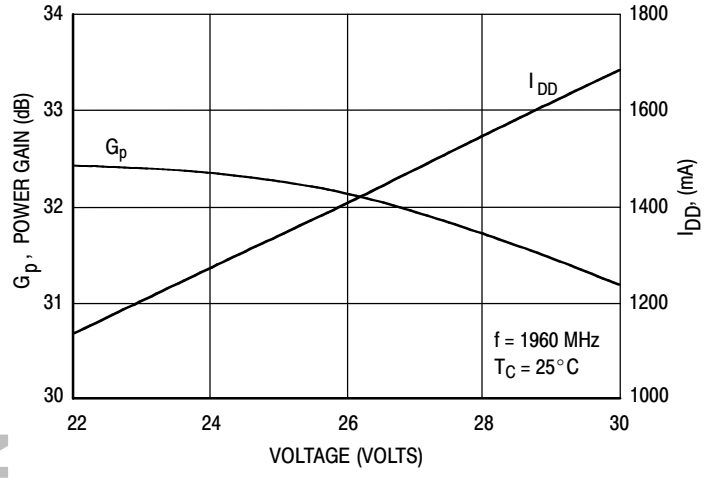

Figure 7. Power Gain, I_{DD} versus Voltage

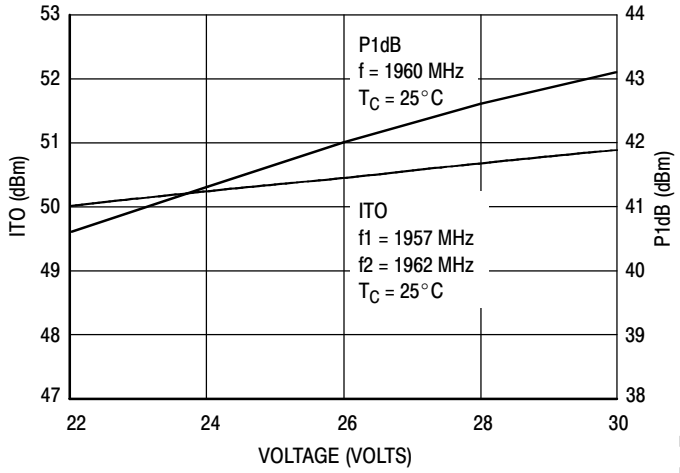

Figure 8. ITO, P1dB versus Voltage

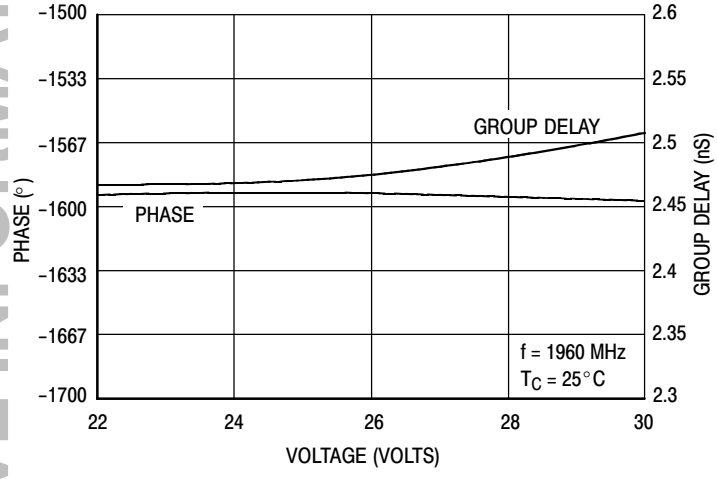

Figure 9. Phase(1), Group Delay(1) versus Voltage

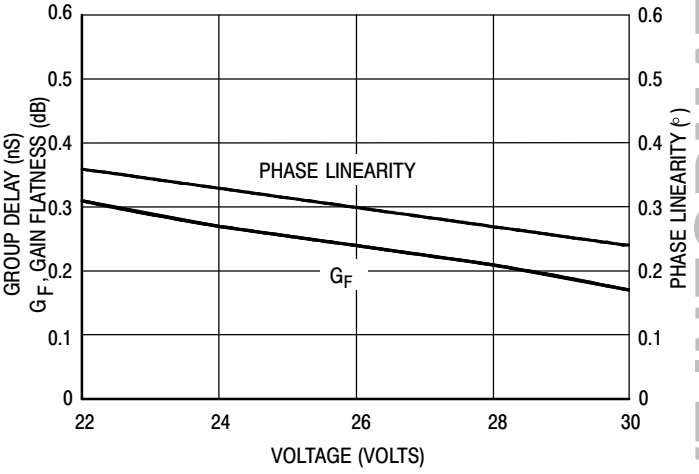

Figure 10. Phase Linearity, Gain Flatness versus Voltage

1. In Production Test Fixture

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NOTES

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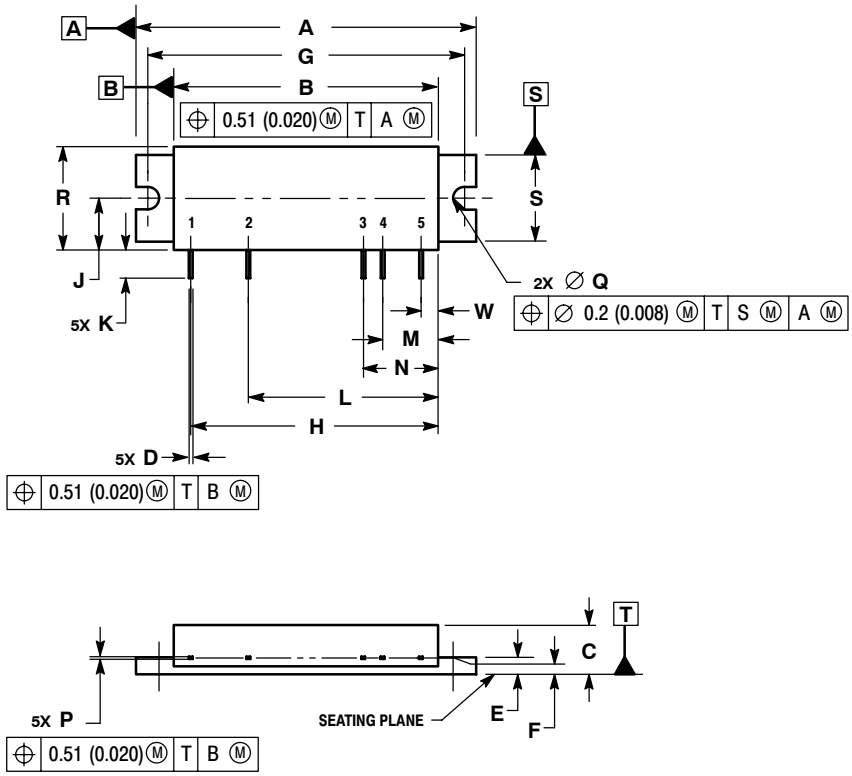
PACKAGE DIMENSIONS



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

	MILLIMETERS		INCHES	
DIM	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
2. VDD1
3. VDD2
4. VDD3
5. RF OUTPUT
CASE: GROUND

CASE 301AY-01
ISSUE O

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Document Number: MHL19936
Rev. 4, 1/2005