

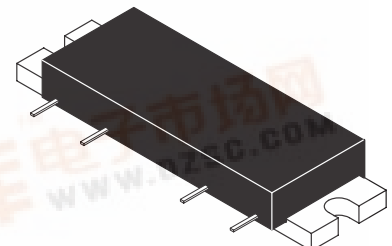
## The RF Line Cellular Band RF Linear LDMOS Amplifiers

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, CDMA or QPSK.

- Third Order Intercept: 47 dBm Typ
- Power Gain: 30.5 dB Typ (@ f = 880 MHz)
- Excellent Phase Linearity and Group Delay Characteristics
- Ideal for Feedforward Base Station Applications
- For Use in TDMA, CDMA, QPSK or Analog Systems

**MHL9236  
MHL9236M**

**800–960 MHz  
2.5 W, 30.5 dB  
RF LINEAR LDMOS AMPLIFIERS**



CASE 301AP-02, STYLES 1, 2

### ABSOLUTE MAXIMUM RATINGS (T<sub>C</sub> = 25°C unless otherwise noted)

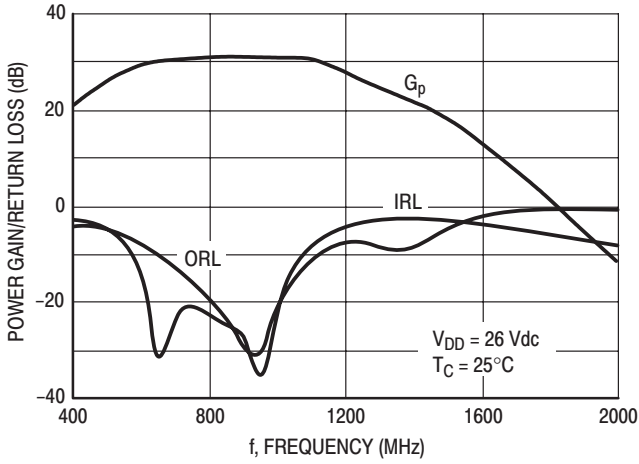
Rating	Symbol	Value	Unit
DC Supply Voltage	V <sub>DD</sub>	30	Vdc
RF Input Power	P <sub>in</sub>	+10	dBm
Storage Temperature Range	T <sub>stg</sub>	-40 to +100	°C
Operating Case Temperature Range	T <sub>C</sub>	-20 to +100	°C

### ELECTRICAL CHARACTERISTICS (V<sub>DD</sub> = 26 Vdc, T<sub>C</sub> = 25°C; 50 Ω System)

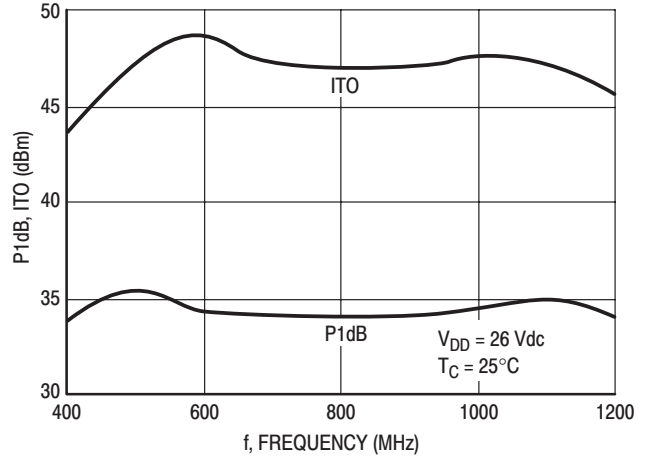
Characteristic	Symbol	Min	Typ	Max	Unit
Supply Current	I <sub>DD</sub>	—	550	620	mA
Power Gain (f = 880 MHz)	G <sub>p</sub>	29.5	30.5	31.5	dB
Gain Flatness (f = 800–960 MHz)	G <sub>F</sub>	—	0.1	0.3	dB
Power Output @ 1 dB Comp. (f = 880 MHz)	P <sub>out</sub> 1 dB	33.0	34.0	—	dBm
Input VSWR (f = 800–960 MHz)	VSWR <sub>in</sub>	—	1.2:1	1.5:1	
Output VSWR (f = 800–960 MHz)	VSWR <sub>out</sub>	—	1.2:1	1.5:1	
Third Order Intercept (f <sub>1</sub> = 879 MHz, f <sub>2</sub> = 884 MHz)	ITO	46.0	47.0	—	dBm
Noise Figure (f = 800–960 MHz)	NF	—	3.5	4.5	dB

# Freescale Semiconductor, Inc.

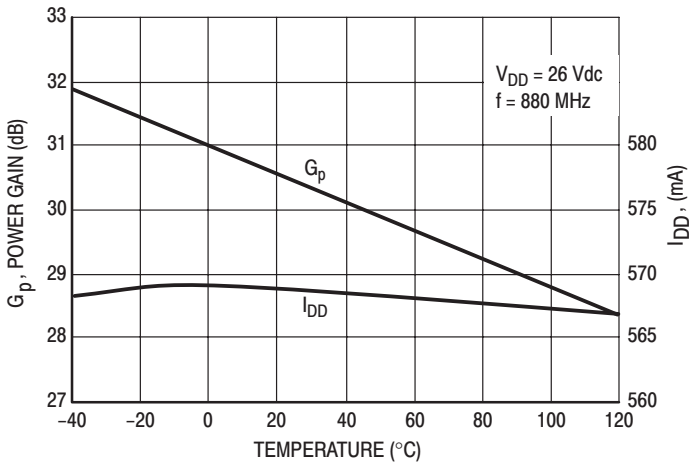
## TYPICAL CHARACTERISTICS



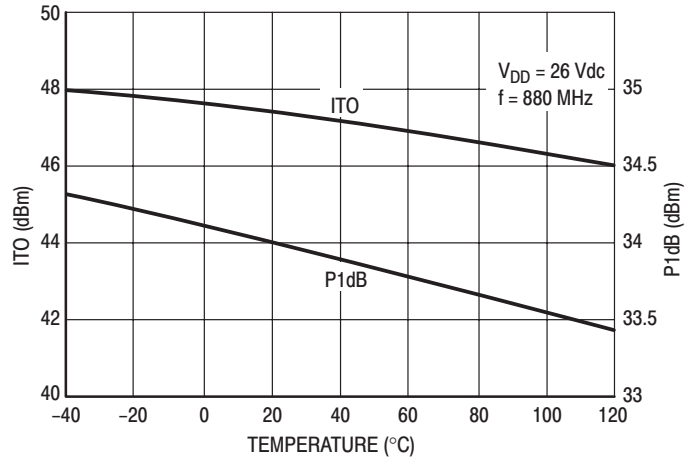
**Figure 1. Power Gain, Input Return Loss, Output Return Loss versus Frequency**



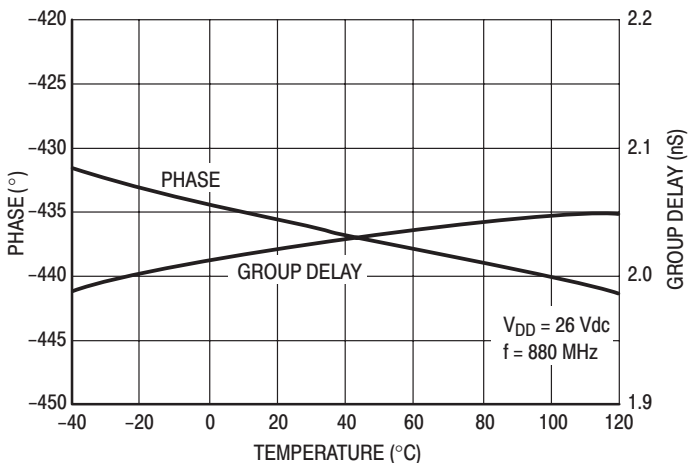
**Figure 2. P1dB, ITO versus Frequency**



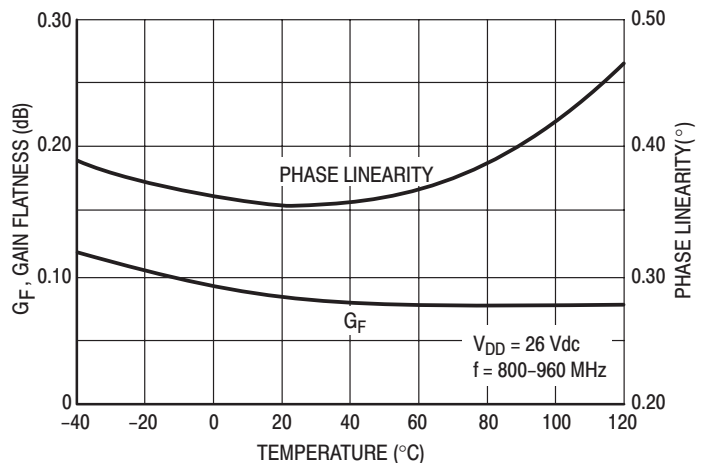
**Figure 3. Power Gain,  $I_{DD}$  versus Temperature**



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



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



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

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## TYPICAL CHARACTERISTICS

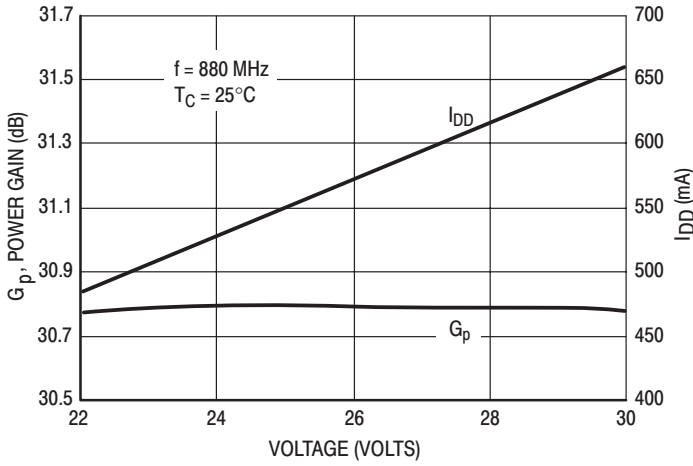


Figure 7. Power Gain,  $I_{DD}$  versus Voltage

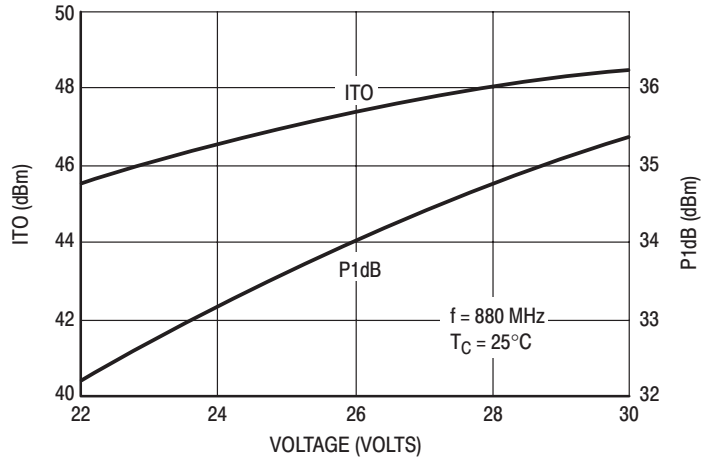


Figure 8. ITO, P1dB versus Voltage

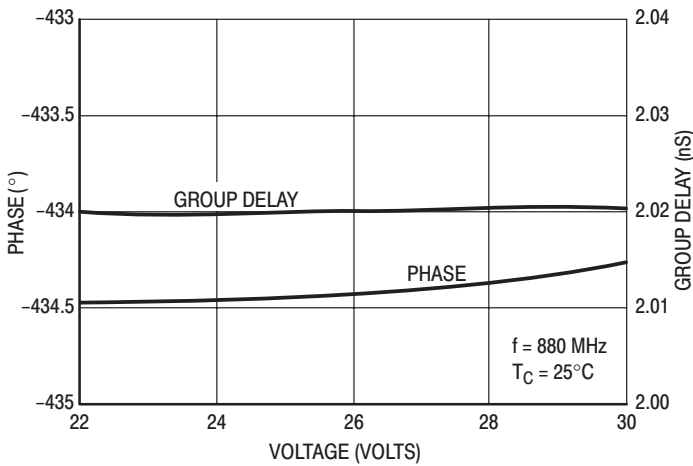


Figure 9. Phase<sup>(1)</sup>, Group Delay<sup>(1)</sup> versus Voltage  
<sup>(1)</sup>In Production Test Fixture

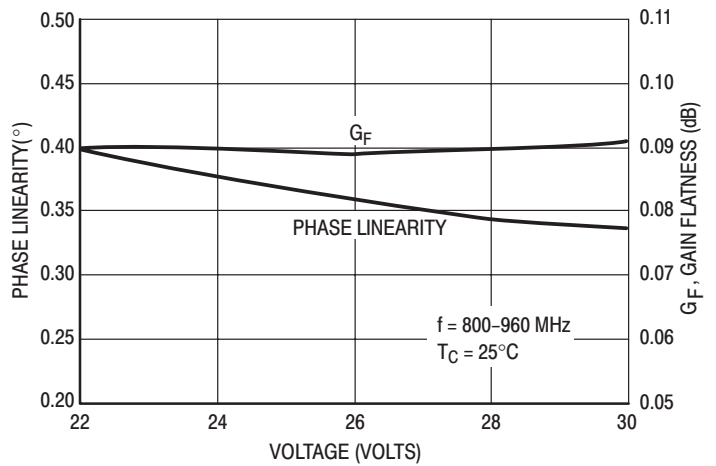
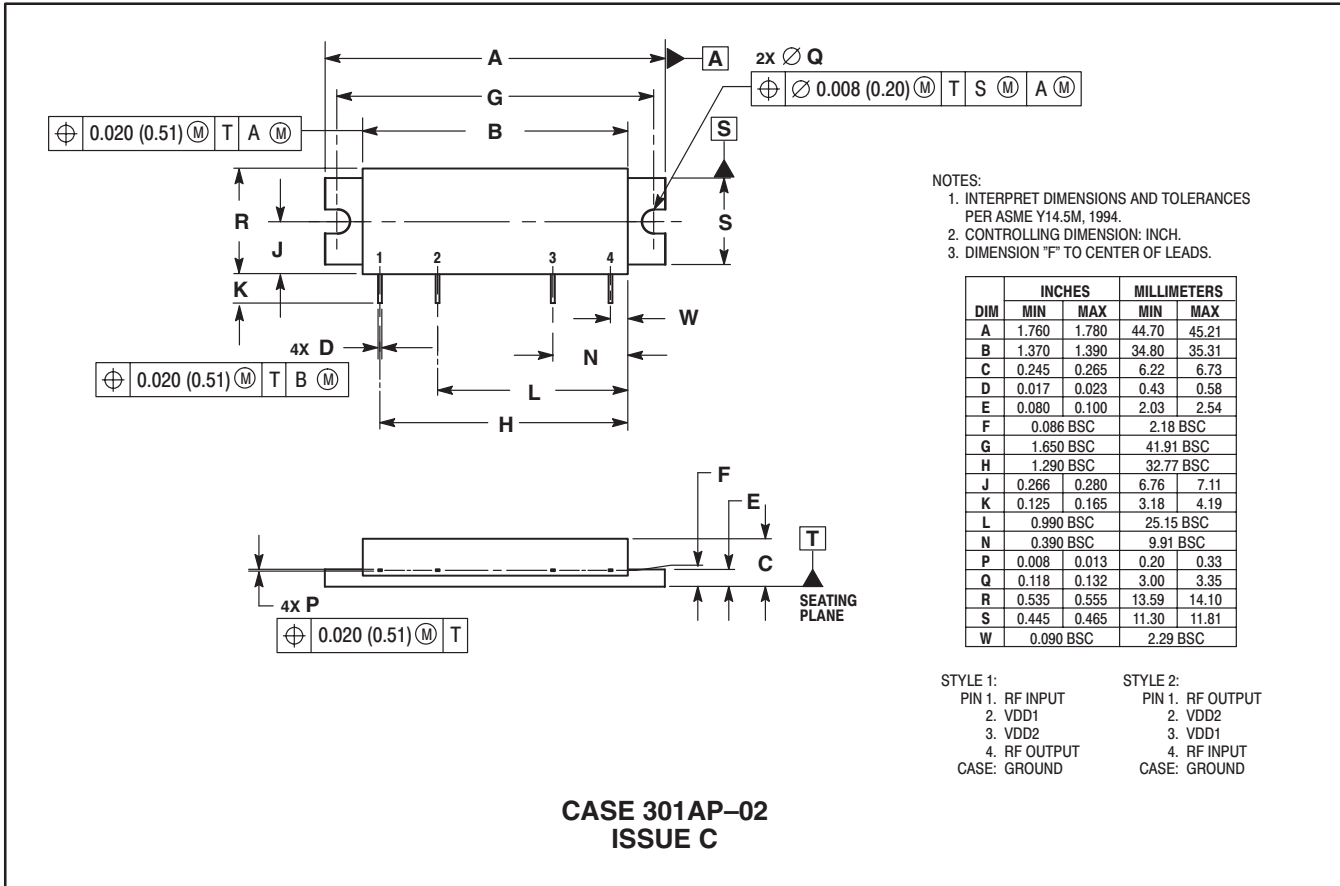


Figure 10. Phase Linearity, Gain Flatness versus Voltage

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**USA/EUROPE/Locations Not Listed:** Motorola Literature Distribution; P.O. Box 5405, Denver, Colorado 80217. 1-303-675-2140 or 1-800-441-2447

**JAPAN:** Motorola Japan Ltd.; SPS, Technical Information Center, 3-20-1, Minami-Azabu. Minato-ku, Tokyo 106-8573 Japan. 81-3-3440-3569

**ASIA/PACIFIC:** Motorola Semiconductors H.K. Ltd.; Silicon Harbour Centre, 2 Dai King Street, Tai Po Industrial Estate, Tai Po, N.T., Hong Kong. 852-26668334

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