

PCS Band RF Linear LDMOS Amplifier

Designed for Class AB amplifier applications in 50 ohm systems operating in the PCS frequency band. A silicon FET 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.

- Typical CDMA Performance: 1960 MHz, 28 Volts
 IS-95 CDMA Pilot, Sync, Paging, Traffic Codes 8 Through 13
- Adjacent Channel Power: -51 dBc @ 30 dBm, 885 kHz Channel Spacing
- Power Gain: 24.5 dB Min (@ f = 1960 MHz)
- 0.2 dB Typical Gain Flatness

Features

- Excellent Phase Linearity and Group Delay Characteristics
- Ideal for Feedforward Base Station Applications
- N Suffix Indicates Lead-Free Terminations

MHPA19010N

**1930 - 1990 MHz
 10 W, 24.5 dB
 RF HIGH POWER LDMOS AMPLIFIER**

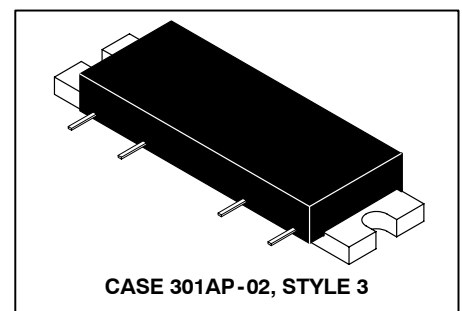


Table 1. Maximum Ratings ($T_C = 25^\circ\text{C}$ unless otherwise noted)

Rating	Symbol	Value	Unit
DC Supply Voltage	V_{DD}	30	Vdc
RF Input Power (Single Carrier CW)	P_{in}	+20	dBm
Storage Temperature Range	T_{stg}	- 40 to +100	$^\circ\text{C}$
Operating Case Temperature Range	T_C	- 20 to +100	$^\circ\text{C}$
Quiescent Bias Current	I_{DQ}	750	mA

Table 2. Electrical Characteristics ($V_{DD} = 28\text{ Vdc}$, $V_{BIAS} \cong 8\text{ V}$ Set for Supply Current of 600 mA, $T_C = 25^\circ\text{C}$, 50 Ω System)

Characteristic	Symbol	Min	Typ	Max	Unit
Supply Current	I_{DD}	—	600	—	mA
Power Gain (f = 1960 MHz)	G_p	24.5	25	—	dB
Gain Flatness (f = 1930 - 1990 MHz)	G_F	—	0.2	0.5	dB
Power Output @ 1 dB Comp. (f = 1960 MHz)	P_{1dB}	—	41.5	—	dBm
Input VSWR (f = 1930 - 1990 MHz)	$VSWR_{in}$	—	1.5:1	2:1	
Noise Figure (f = 1960 MHz)	NF	—	8	10	dB
Adjacent Channel Power Rejection @ 30 dBm, 1.23 MHz BW, 885 kHz Channel Spacing	ACPR	—	-58	- 51	dBc

TYPICAL CHARACTERISTICS

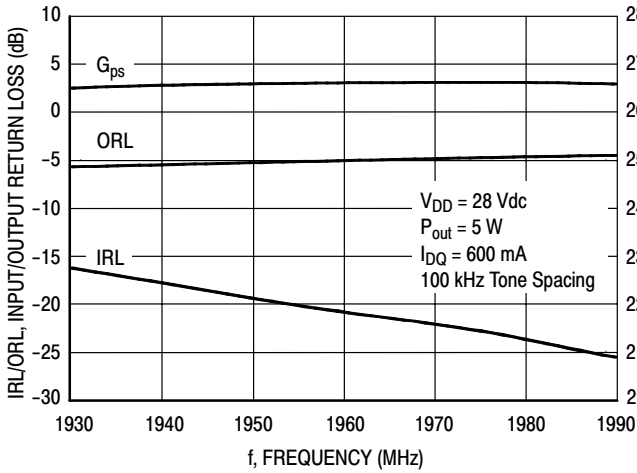


Figure 1. Two-Tone Power Gain, Input Return Loss and Output Return Loss versus Frequency

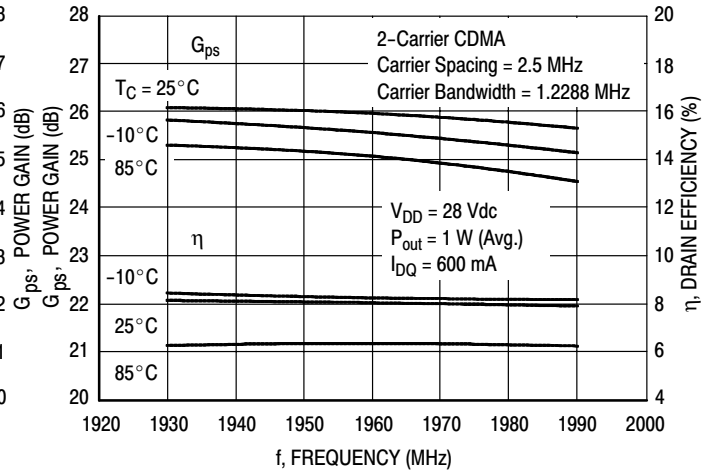


Figure 2. 2-Carrier CDMA Power Gain and Efficiency versus Frequency

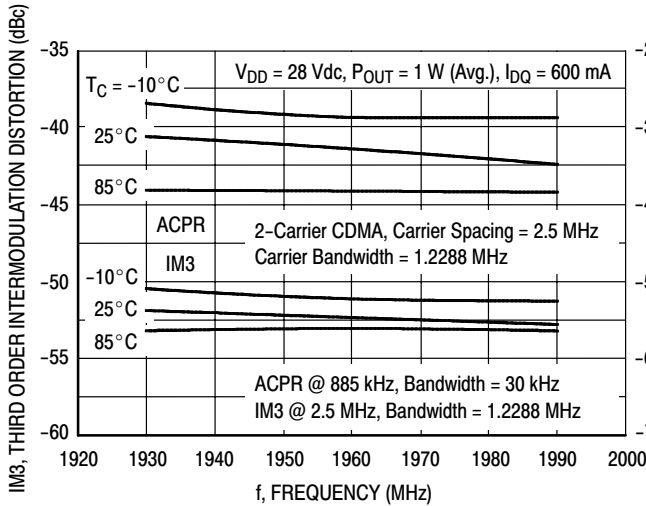


Figure 3. 2-Carrier CDMA IM3 and ACPR versus Frequency

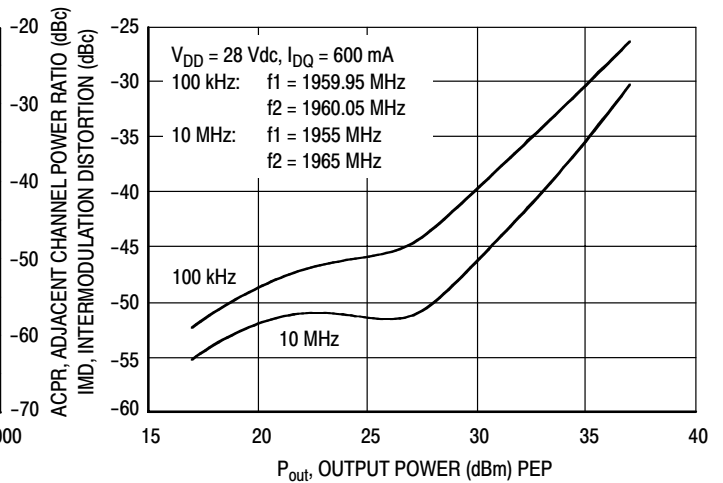


Figure 4. Two-Tone CDMA IMD versus Output Power

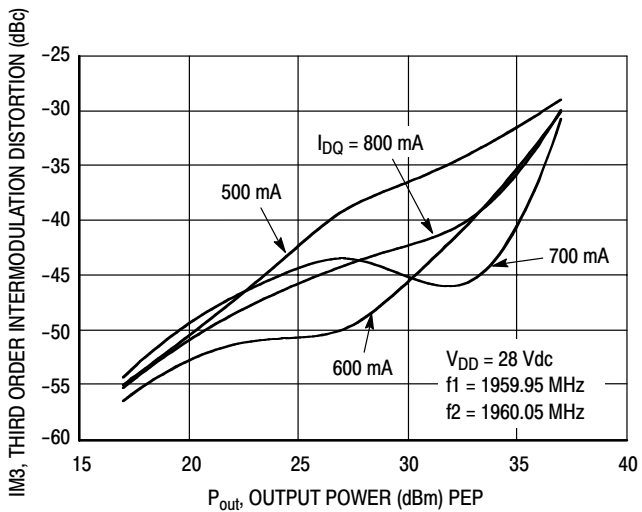


Figure 5. Third Order Intermodulation Distortion versus Output Power

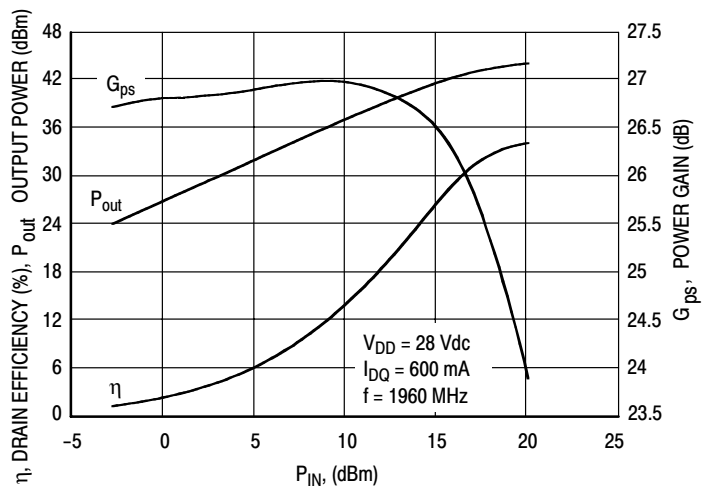


Figure 6. CW Output Power, Efficiency and Gain versus Input Power

TYPICAL CHARACTERISTICS

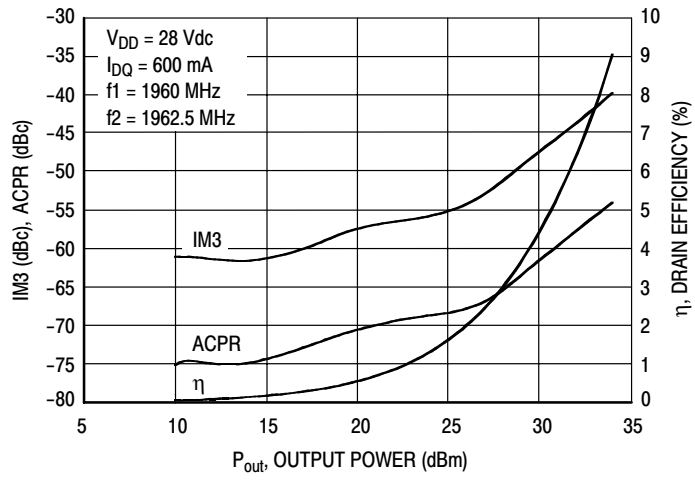


Figure 7. 2-Carrier CDMA ACPR, IM3 and Efficiency versus Output Power



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