

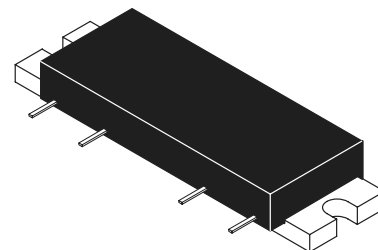
The RF Line PCS Band RF Linear LDMOS Amplifier

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)
- Excellent Phase Linearity and Group Delay Characteristics
- 0.2 dB Typical Gain Flatness
- Ideal for Feedforward Base Station Applications

MHPA19010

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



CASE 301AP-02, STYLE 3

MAXIMUM RATINGS (T_C = 25°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	°C
Operating Case Temperature Range	T _C	-20 to +100	°C
Quiescent Bias Current	I _{DQ}	750	mA

ELECTRICAL CHARACTERISTICS (V_{DD} = 28 Vdc, V_{BIAS} = 8 V Set for Supply Current of 600 mA, T_C = 25°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

Freescale Semiconductor, Inc.

TYPICAL CHARACTERISTICS

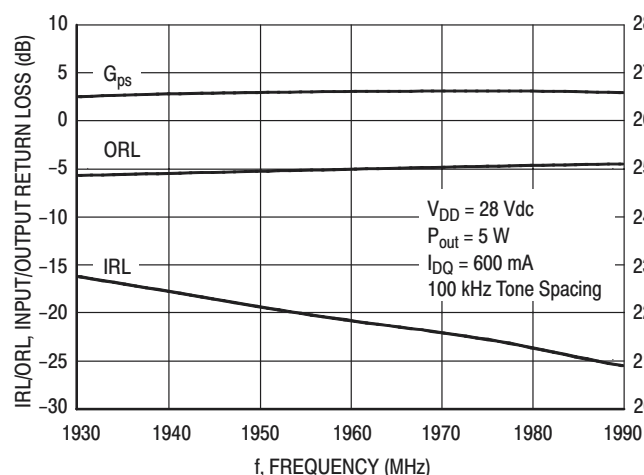


Figure 1. Two-Tone Power Gain, Input Return Loss and Output Return Loss versus Frequency

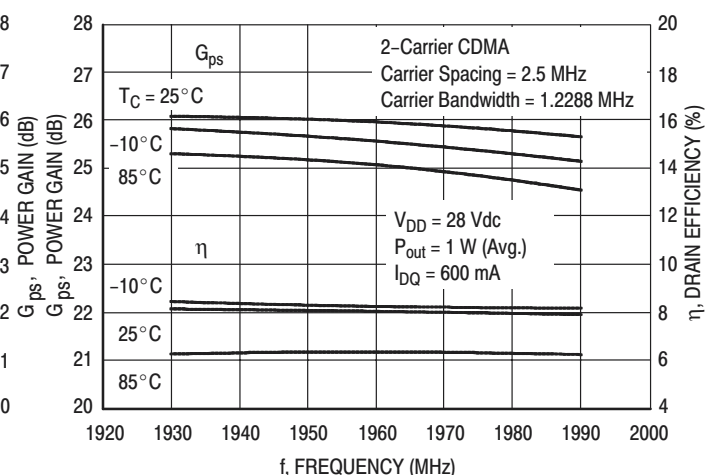


Figure 2. 2-Carrier CDMA Power Gain and Efficiency versus Frequency

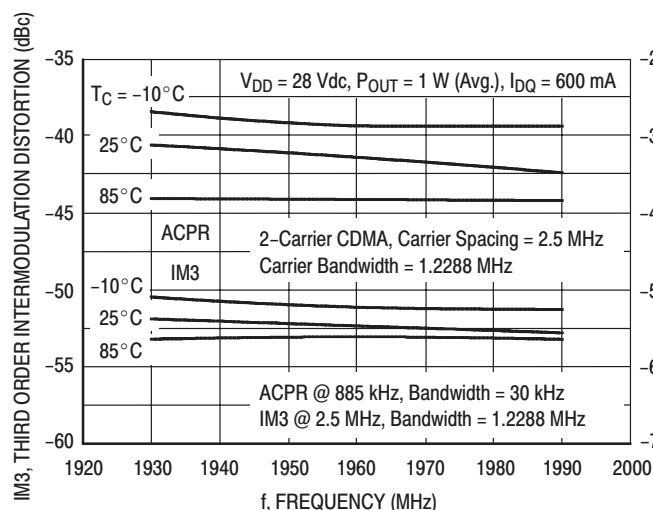


Figure 3. 2-Carrier CDMA IM3 and ACPR versus Frequency

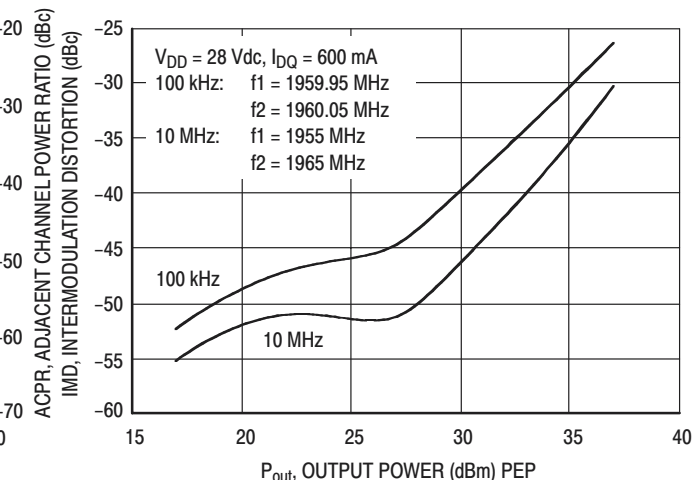


Figure 4. Two-Tone CDMA IMD versus Output Power

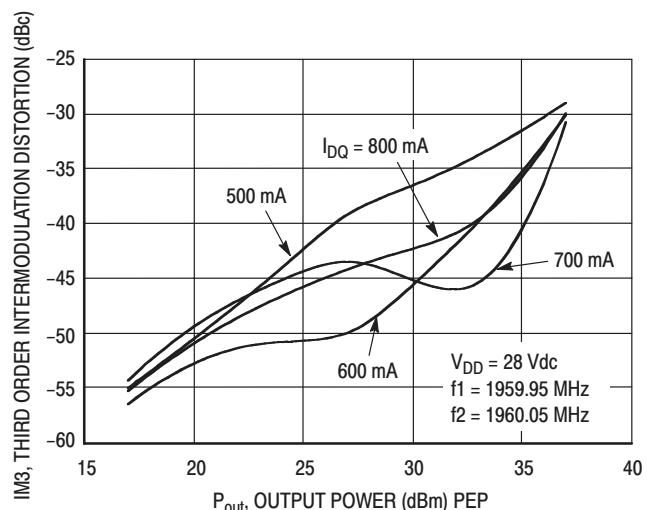


Figure 5. Third Order Intermodulation Distortion versus Output Power

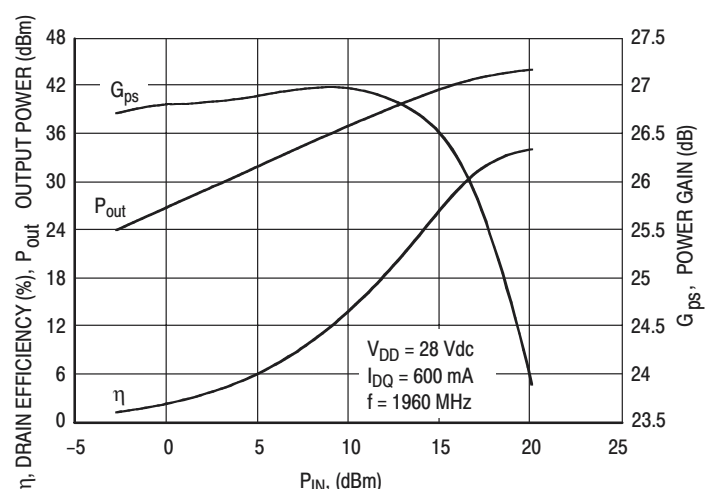


Figure 6. CW Output Power, Efficiency and Gain versus Input Power

Freescal Semiconductor, Inc.

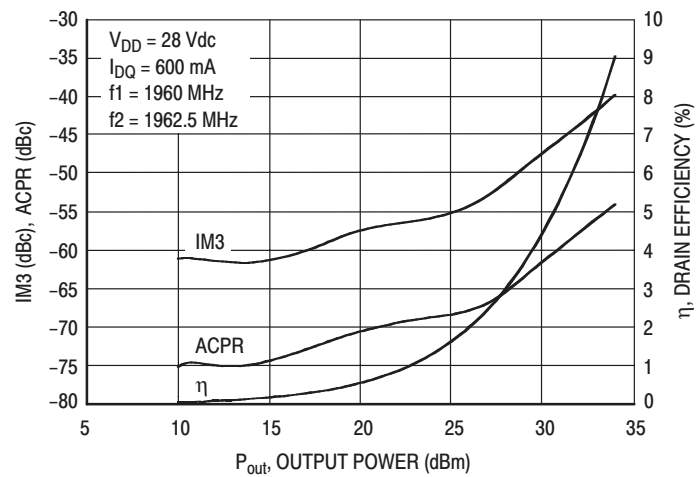


Figure 7. 2-Carrier CDMA ACPR, IM3 and Efficiency versus Output Power

Technical drawing of a mechanical part, likely a bearing housing or similar component, showing dimensions and feature control frames.

Dimensions:

- A:** Overall length
- B:** Distance from left face to center of hole
- C:** Distance from right face to center of hole
- D:** Distance from left face to center of hole (labeled 4X D)
- E:** Distance from right face to center of hole
- F:** Distance from right face to center of hole
- G:** Distance from left face to center of hole
- H:** Distance from left face to center of hole
- I:** Distance from left face to center of hole
- J:** Distance from left face to center of hole
- K:** Distance from left face to center of hole
- L:** Distance from left face to center of hole
- M:** Distance from left face to center of hole
- N:** Distance from left face to center of hole
- O:** Distance from left face to center of hole
- P:** Distance from left face to center of hole
- Q:** Distance from left face to center of hole
- R:** Distance from left face to center of hole
- S:** Distance from left face to center of hole
- T:** Distance from left face to center of hole
- U:** Distance from left face to center of hole
- V:** Distance from left face to center of hole
- W:** Distance from left face to center of hole
- X:** Distance from left face to center of hole
- Y:** Distance from left face to center of hole
- Z:** Distance from left face to center of hole

Feature Control Frames:

- Top Left:** $\text{Ø } 0.020 (0.51) \text{ (M) T A (M)}$
- Top Right:** $2X \text{ Ø } 0.008 (0.20) \text{ (M) T S (M) A (M)}$
- Bottom Left:** $\text{Ø } 0.020 (0.51) \text{ (M) T B (M)}$
- Bottom Right:** $\text{Ø } 0.020 (0.51) \text{ (M) T}$

Notes:

- INTERPRET DIMENSIONS PER ASME Y14.5
- CONTROLLING DIMENSION
- DIMENSION "F" T

Table:

DIM	INCH
A	1.760
B	1.370
C	0.245
D	0.017
E	0.080
F	0.086
G	1.650
H	1.290
I	0.266
J	0.125
K	0.990
L	0.390
M	0.008
N	0.118
O	0.535
P	0.445
Q	0.090
R	
S	
T	
U	
V	
W	
X	
Y	
Z	

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
L	0.990 BSC		25.15 BSC	
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	

CASE 301AP-02
ISSUE C

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