RMPA1901-53
PCS CDMA GaAs MMIC Power Amplifier

Description

The RMPA1901-53 is a monolithic high efficiency power amplifier for PCS CDMA applications. Performance parameters may be slightly adjusted by "tweaking" the off-chip matching components. The amplifier circuit design is a single ended configuration that utilizes harmonic tuning for increased power added efficiency and linearity. The device uses Raytheon's Pseudomorphic High Electron Mobility Transistor (pHEMT) process.

Features

- Positive supply voltage of 5.8V, nominal
- Efficiency of 34%, typical, for digital CDMA power out of 28.5 dBm
- ACPR of 50 dBc, typical, for digital CDMA power out of 28.5 dBm
- Small outline metal based quad plastic package

Electrical Characteristics

(Specifications at 25°C unless otherwise stated)

Parameter	Min	Typ	Max	Unit
Frequency Range	1850		1910	MHz
	1710		1785	MHz
Gain (Small Signal)		29		dB
Gain Variation vs Temp		-0.03		dB/°C
Gain Linearity				
(0 dBm ≤ Pout ≤ 28.5 dBm)	-1.0		+1.0	dB
Noise Power (1930-1990 MHz)				
(All Power Levels)			-135	dBm/Hz
Input VSWR (50Ω)			2.0:1	--
Stability (All spurious)[1]			-70	dBc
Harmonics (Po ≤ 28.5 dBm)				
2fo, 3fo, 4fo		-30		dBc
Efficiency				
Po = 800 mW, Vdd=5.8V		34		%
Po = 40 mW, Vdd=5.8V		5		%
ACPR (Offset ≤ ± 1.25 MHz)[2]		50		dBc
Noise Figure (over temp.)			7.0	dB
Quiescent Current		80		mA
Vdd		5.8		Volts
Vg1/Vg2, Vg3 (<5 mA)[3]	-1.5		-0.3	Volts
Case Operating Temp	-30		+90	°C

Product Information

Notes:

1. Source/Load VSWR ≤ 3:1 (All Angles, -50 dBm<Po<28.5 dBm) or Load VSWR ≥ 20:1 (Out of Band, All Angles, Tc=-40 to +110°C)
2. Po ≤ 28.5 dBm at Vdd=5.8V; CDMA Waveform measured using the ratio of the average power within the 1.23 MHz channel and within a 30 kHz bandwidth at a 1.25 MHz offset.
3. Vg1=Vg2 and Vg3 adjusted for Quiescent Current of Idq1 & Idq2 = 35 mA, and Idq3 = 45 mA.

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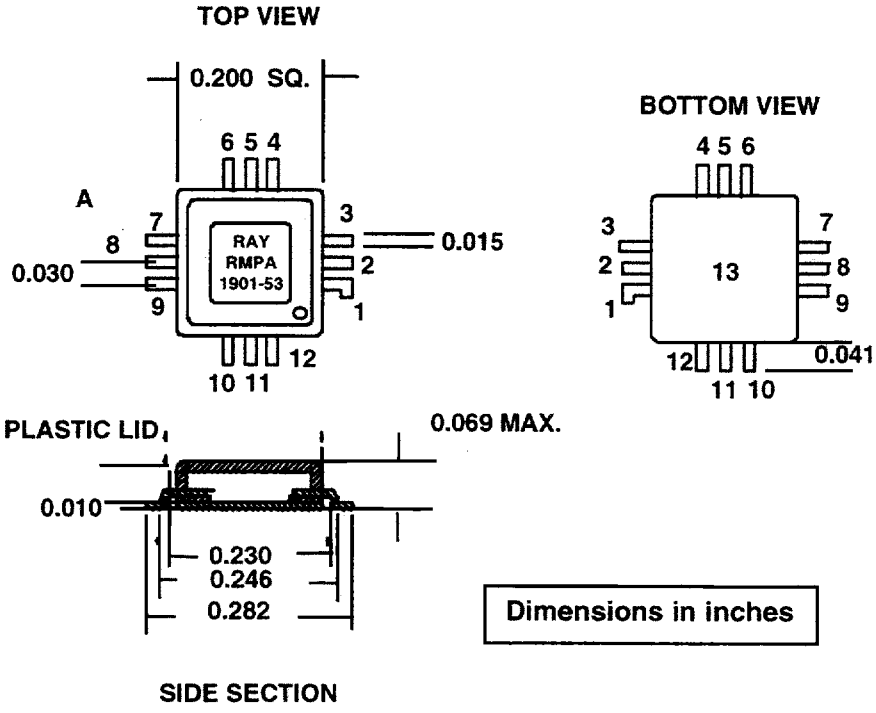
Product Information

Package Data



Pin#	Description
1	NC
2	RF Out & Vd3
3	RF Out & Vd3
4	Vd1
5	GND
6	Vg1
7	RF In
8	GND
9	Vg2
10	Vd2
11	GND
12	Vg3
13	GND (METAL BASE)