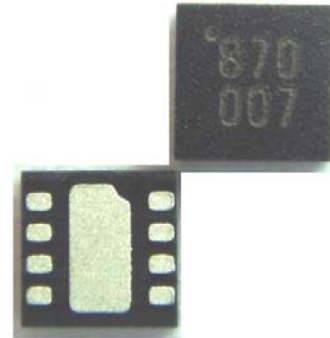


2.4 GHz RF Power Amplifier

Introduction

The EPA2414A is a two-stage linearized power amplifier optimized for 802.11b/g wireless LAN(WLAN) applications in the 2.4 GHz band. It features 25 dB of gain and delivers up to 26 dBm of output power.

The device is sold in a RoHS compliant miniature 2 x 2 x 0.45 mm 8-pin SON package to make automated assembly simple. Its small and thin package size makes the device an ideal solution for radios built in small form factors for mobile applications.



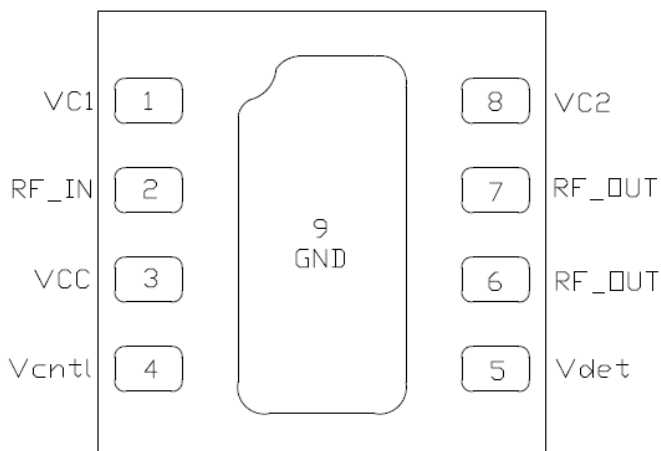
Applications

- IEEE 802.11b/g/n WLAN Mobile
- 2.4 GHz Cordless Phones
- 2.4 GHz ISM Radios

Features

- 2.4 to 2.5 GHz Operating Range
- 25 dB Gain
- 3% EVM at Pout=+18 dBm with Icc = 100 mA @ 3.3V
- On-chip power detector
- +3.3V Single Supply
- 2 x 2 x 0.45 mm 8-pin SON Package
- RoHS compliant product

Pin Assignment



<Top View>



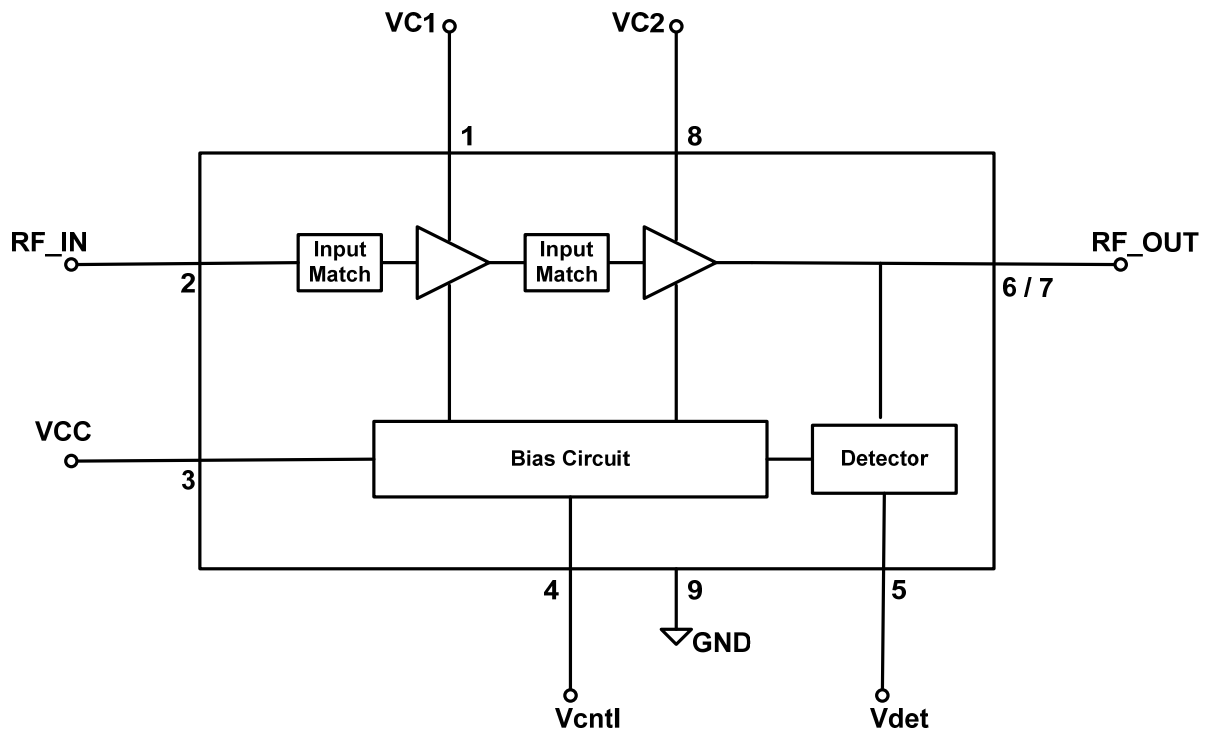
Caution!
ESD sensitive device



Pin Description

Pin	Pin Name	Pin Description
1	VC1	Supply voltage, 1 st stage of the PA
2	RF_IN	RF Input
3	VCC	Supply voltage for bias circuit
4	Vcntl	PA control voltage
5	Vdet	Detector output voltage
6	RF_OUT	RF Output
7	RF_OUT	RF Output
8	VC2	Supply voltage, 2 nd stage of the PA
9	GND	Package backside ground slug

Functional Diagram



Specifications

Absolute Maximum Ratings

PARAMETER	MIN.	MAX.	UNIT	COMMENTS
VC1, VC2, VCC	TBD	TBD	V	
Operating Temperature Range	-20	+85	°C	
Storage Temperature Range	-65	+125	°C	
Soldering Conditions	-	+260	°C	Peak for 20 seconds
ESD Tolerance (HBM)	TBD	-	V	All pins, forward and reverse voltage.

Note : Stress in excess of the absolute maximum ratings may cause permanent damage to the device.

DC Electrical Characteristics (Temp.=25°C)

PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
Supply Voltages					
VC1		3.0	3.3	3.6	Volts
VC2		3.0	3.3	3.6	Volts
VCC		3.0	3.3	3.6	Volts
Vcntl			2.85		Volts
Supply Currents					
Ic1 + Ic2	Quiescent (no RF)		66		mA
Icntl			2		mA

AC Electrical Characteristics (VC1=VC2=Vcc=3.3V, Vcntl=2.85V, Temp.=25°C)

PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
RF Frequency Range (Note 1)		2.4		2.5	GHz
Gain			25		dB
P1dB			25		dBm
S11 (Input Return Loss)			-15		dB
S22 (Output Return Loss)			-15		dB
Detector voltage range	Pout=18dBm		800		mV
ACPR 1 st Side Lobe at Pout= 22 dBm	802.11b, 1 Mbps CCK		-35		dB
ACPR 2 nd Side Lobe at Pout= 22 dBm	802.11b, 1 Mbps CCK		-56		dB
Total Current at Pout=18 dBm	64 QAM / 54 Mbps Duty cycle=80%		100		mA
EVM at Pout =18 dBm	64 QAM / 54 Mbps Duty cycle=80%		3		%
Second Harmonics	Pout=18 dBm		-35		dBc

Note 1: Operation outside this range is possible, but not guaranteed

Ordering Information

Ordering Number	Component Packing
EPA2414A	3000pcs / Tape & Reel
EPA2414A-EVB	EPA2414A Evaluation Kit

**For additional product information, please contact
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