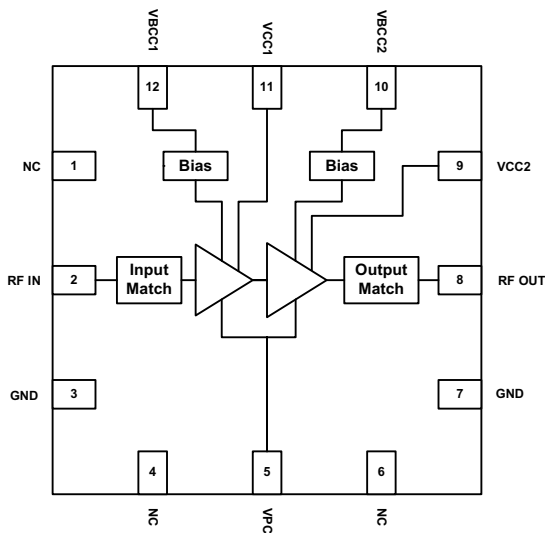


Applications

- 802.11b/g WLAN
- 2.4 GHz ISM band wireless equipment



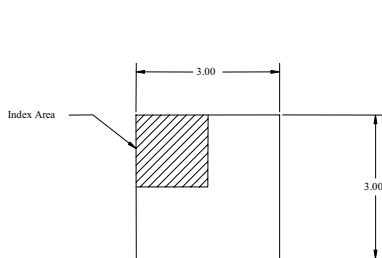
Functional Block Diagram

Product Description

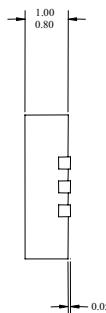
The RFSP2010 power amplifier is a high-performance GaAs HBT IC designed for use in transmit applications in the 2.4-2.5 GHz frequency band. With a P1dB of 25 dBm, the device is ideal as a final stage for wireless LAN applications requiring high transmit linearity. Designed with propriety linearizing techniques, the part is operable closer to P-1dB, which enables the device to achieve a specific error vector magnitude (EVM) with less backoff. The PA exhibits unparalleled linearity and efficiency for both 802.11b- and 802.11g-based WLAN systems. The part operates off a single +3.3V supply.

Product Features

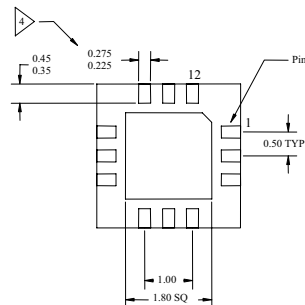
- 25 dBm P1dB@3.3V
- 21.5 dB gain
- 1.5 % EVM @ P_{OUT} = +18 dBm with 54 Mbps OFDM signal
- 95 mA @ P_{OUT} = +18 dBm with 54 Mbps OFDM signal
- Single +3.3V supply voltage
- PA power on/off logic
- Input and output matched to 50 ohms



Top View



Side View



Bottom View

1. All dimensions are in millimeters, angles in degrees.

2. The terminal #1 identifier and pad numbering convention shall conform to JESD 95-1 SPP-012

3. Lead coplanarity: 0.05 max.

4. Dimension applies to metallized pad and is measured between 0.25 and 0.30 mm from pad tip.

3x3 mm Package Outline

RFSP2010

2.4–2.5 GHz Power Amplifier

Parameter ¹	Specification			Unit	Condition
	Min.	Typ.	Max.		
Overall					
Frequency Range	2400		2500	MHz	
Output P1dB		25		dBm	
Gain		21.5		dB	P _{OUT} = +18 dBm
Error Vector Magnitude ²		1.5		%	P _{OUT} = +18 dBm; 54 Mbps OFDM signal
Gain Flatness		±0.5		dB	Across 100 MHz Band
Harmonics					
2 nd Harmonic		-27		dBc	@ P1dB
3 rd Harmonic		-45		dBc	@ P1dB
Spurious (Stability) ³		-60		dBc/30 kHz	P _{OUT} = -20 dBm to P1dB
Reverse Isolation	35			dB	
Input Return Loss	10			dB	
Output Return Loss	10			dB	With matching capacitor
Power Supply					
Operating Voltage		3.3		V	
Current Consumption		95		mA	P _{OUT} = +18 dBm; 54 Mbps OFDM signal
		180		mA	P _{OUT} = +24 dBm; meets 802.11b ACPR spec
Shutdown Control					
Device On Logic High		3.3		V	
Device Off Logic Low			0.7	V	
Device Off Current			1	uA	
Turn-On Time			500	ns	With 50Ω source
Turn-Off Time			500	ns	With 50Ω source

Note 1: Test Conditions: V_{CC} = 3.3V, Freq. = 2450 MHz, T = 25°C, Small Signal Conditions unless otherwise stated.

Note 2: Increase in EVM over system EVM floor.

Note 3: Load VSWR is set to 7:1 and the angle is varied 360 degrees.

Absolute Maximum Ratings

Parameter	Rating	Unit
DC Power Supply	6.0	V
DC Supply Current	400	mA
Maximum RF input level	+7	dBm
Operating Ambient Temperature	-40 to +85	°C
Storage Temperature	-55 to +150	°C



Ordering Information

Part Number	Temp. Range (°C)	Package Description	Quantity
PRFS-P2010-EVL	-40 to +85	Evaluation Board	1
PRFS-P2010-005	-40 to +85	13" Reverse Tape/Reel	2500 pcs.
PRFS-P2010-006	-40 to +85	13" Tape/Reel	2500 pcs.
PRFS-P2010-007	-40 to +85	7" Reverse Tape/Reel	1000 pcs.
PRFS-P2010-008	-40 to +85	7" Tape/Reel	1000 pcs.
PRFS-P2010-009	-40 to +85	Bulk – 4x4 mm 24-pin LPCC	1-999 pcs.

NOTES



ANADIGICS, Inc.

141 Mount Bethel Road
Warren, New Jersey 07059, U.S.A.
Tel: +1(908)668-5000
Fax: +1(908)668-5132

URL: <http://www.anadigics.com>
E-mail: Mktg@anadigics.com

IMPORTANT NOTICE

ANADIGICS, Inc. reserves the right to make changes to its products or to discontinue any product at any time without notice. The product specifications contained in Advanced Product Information sheets and Preliminary Data Sheets are subject to change prior to a product's formal introduction. Information in Data Sheets have been carefully checked and are assumed to be reliable; however, ANADIGICS assumes no responsibilities for inaccuracies. ANADIGICS strongly urges customers to verify that the information they are using is current before placing orders.

WARNING

ANADIGICS products are not intended for use in life support appliances, devices or systems. Use of an ANADIGICS product in any such application without written consent is prohibited.