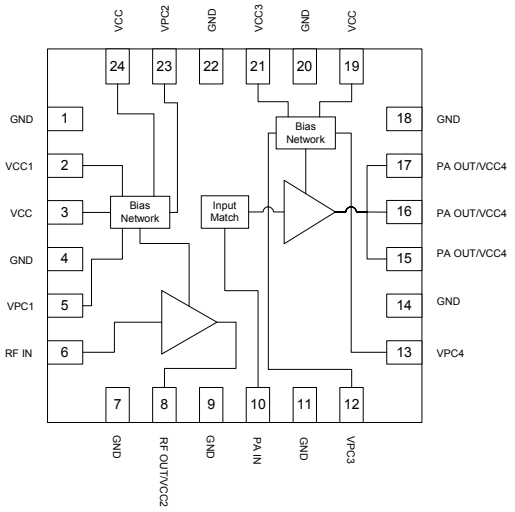
Advanced RFSP5032

5.15-5.85 GHz U-NII Power Amplifier

Applications

- 802.11a WLAN
- HiperLAN/2 WLAN
- U-NII fixed wireless equipment



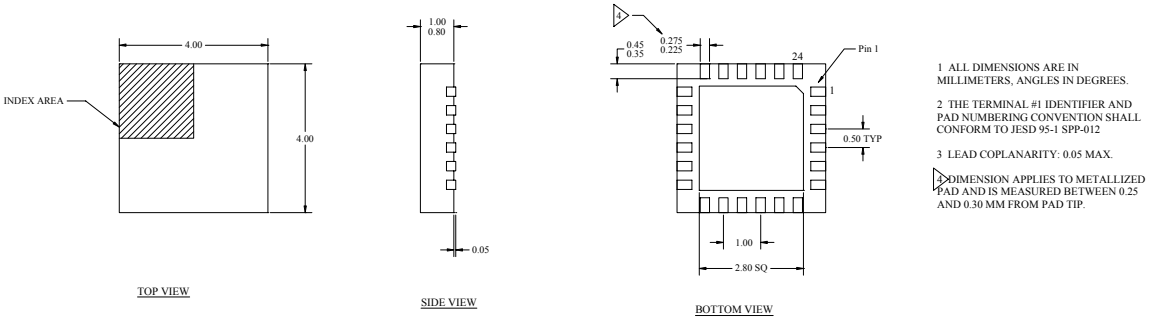
Functional Block Diagram

Product Description

The RFSP5032 power amplifier is a high-performance GaAs HBT IC designed for use in transmit applications in the 5.15-5.85 GHz frequency band. With a P1dB of 26 dBm, the device is ideal as a final stage for wireless LAN applications requiring high transmit linearity. The part demonstrates very low error vector magnitude (EVM) at the full 54 Mbps data rate for 802.11a. The input of the PA is matched to 50 ohms and the output can be easily matched for optimum linearity and power performance at the desired frequency of operation between 5.15 and 5.85 GHz. The part operates off a single +3.3V supply.

Product Features

- 26 dBm P1dB@3.3V
- 26 dB gain
- 2.5 % EVM @ P_{OUT} = 18 dBm; 54 Mbps
- 1.5 % EVM @ P_{OUT} = 18 dBm; 36 Mbps
- Single +3.3V supply voltage
- Input matched to 50 ohms
- PA power on/off logic



4x4 mm Package Outline

RF Solutions, Inc.
3145 Avalon Ridge Place, Suite200, Norcross, Georgia 30071
www.rf-solutions.com 770-263-2600p 770-248-1654f

Parameter [1]	Specification			Unit	Condition
	Min.	Typ.	Max.		
Overall					
Frequency Range	5150		5850	MHz	
Output P1dB		26		dBm	
Gain		26		dB	
Error Vector Magnitude (EVM)		2.5 1.5		% %	P_{OUT} = +18 dBm; 54 Mbps data rate P_{OUT} = +18 dBm; 36 Mbps data rate
Gain Flatness		±1.0		dB	Across 200 MHz Band
Harmonics					
2nd Harmonic		-30		dBc	@ P1dB
3rd Harmonic		-30		dBc	@ P1dB
Spurious (Stability)[2]		-60		dBc/30 kHz	P_{OUT} = -20 dBm to P1dB
Reverse Isolation	50			dB	
Noise Figure		6		dB	
Input Return Loss	15			dB	With matching capacitor
Output Return Loss	15			dB	With matching capacitor
Power Supply					
Operating Voltage		3.3		V	
Current Consumption		180 200		mA mA	P_{OUT} = +16 dBm P_{OUT} = +18 dBm
Shutdown Control					
Device On Logic High		3.3		V	
Device Off Logic Low			0.7	V	
Current Consumption			100	uA	
Turn-On Time			100	ns	
Turn-Off Time			100	ns	

Note 1: Test Conditions: V_{CC} = 3.3V, P_{OUT} = +18dBm, Freq. = 5250 MHz, T =25°C.
Note 2: Load VSWR is set to 7:1 and the angle is varied 360 degrees.

Absolute Maximum Ratings

Parameter		Unit
DC Power Supply	6.0	V
DC Supply Current	800	mA
Maximum RF input level	2	dBm
Operating Ambient Temperature	-40 to +85	°C
Storage Temperature	-55 to +150	°C