

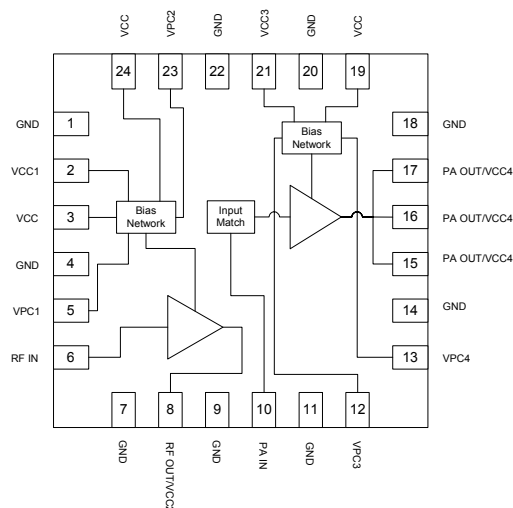


# Advanced RFSP5032

5.15-5.85 GHz U-NII Power Amplifier

## Applications

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



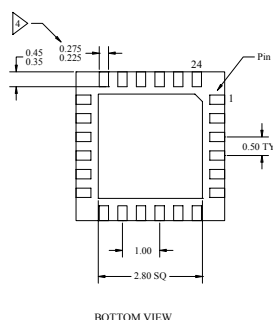
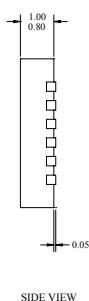
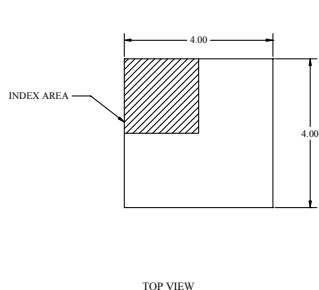
## Functional Block Diagram

## 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



- 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.
- DIMENSION APPLIES TO METALLIZED PAD AND IS MEASURED BETWEEN 0.25 AND 0.30 MM FROM PAD TIP.

## 4x4 mm Package Outline

Parameter <sup>1</sup>	Specification			Unit	Condition
	Min.	Typ.	Max.		
<b>Overall</b>					
Frequency Range	5150		5850	MHz	
Output P1dB		26		dBm	
Gain		26		dB	
Error Vector Magnitude (EVM)		2.5		%	P <sub>OUT</sub> = +18 dBm; 54 Mbps data rate
Gain Flatness		1.5		%	P <sub>OUT</sub> = +18 dBm; 36 Mbps data rate
Harmonics		±1.0		dB	Across 200 MHz Band
2 <sup>nd</sup> Harmonic		-30		dBc	@ P1dB
3 <sup>rd</sup> Harmonic		-30		dBc	@ P1dB
Spurious (Stability) <sup>2</sup>		-60		dBc/30 kHz	P <sub>OUT</sub> = -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
<b>Power Supply</b>					
Operating Voltage		3.3		V	
Current Consumption		180		mA	P <sub>OUT</sub> = +16 dBm
		200		mA	P <sub>OUT</sub> = +18 dBm
<b>Shutdown Control</b>					
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,  $T = 25^{\circ}C$ .

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



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