

## 5GHz Low Noise Amplifier

### DESCRIPTION

The JAZ10100 is designed in Jazz's SiGe90 process technology for WLAN/802-11(a) band (5.15GHz~5.35GHz) applications. The LNA has presented a high performance. With a 3.0V biasing supply, the LNA shows a 16dB power gain, -7.7dBm IIP3 and 2.6dB typical noise figure at only 5.0mA  $I_c$  current cost.

The LNA can also work at lower  $I_c$  conditions. With 3.7mA current biasing, the LNA achieves a 16dB power gain, -6.7dBm IIP3 and 2.9dB noise figure. This high performance allows it to be used as a first-stage LNA, a LO buffer, or a transmitter driver amplifier.

### CIRCUIT FEATURES

- 5.15GHz to 5.35GHz WLAN/802-11(a) band operation
- 2.7V to 3.3V single-supply
- 3.7mA minimal biasing current
- High power gain: 16dB
- Low noise figure: 2.3dB@5.15GHz
- High IIP3: -6.7dBm
- Package measuring & 50ohm input and output matching

### Electrical characteristics measured at 5.2GHz with $I_c=5.0mA$ & room temperature

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Power Gain	S21	Plus 0.7dB input and 1dB output loss		16.1		dB
Input Third Order Intercept	IIP3	Two tone at 5.2GHz and 5.201GHz		-7.7		dBm
Noise Figure	NF	Minus 0.7dB for test board input loss		2.6		dB
Reverse Isolation	S12			-28		dB
Biasing Voltage	Vcc			3.0		V

### Electrical characteristics measured at 5.2GHz with $I_c=3.7mA$ & room temperature

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Power Gain	S21	Plus 0.7dB input and 1dB output loss		15.9		dB
Input Third Order Intercept	IIP3	Two tone at 5.2GHz and 5.201GHz		-6.5		dBm
Noise Figure	NF	Minus 0.7dB for test board input loss		2.9		dB
Reverse Isolation	S12			-28		dB
Biasing Voltage	Vcc			3.0		V

## Electrical characteristics measured at 5.2GHz with $I_c=4.3mA$ & room temperature

Parameter	Symbol	Conditions	Min Max	Typ	Units
Power Gain	S21	Plus 0.7dB input and 1dB output loss		16.0	dB
Input Third Order Intercept	IIP3	Two tone at 5.2GHz and 5.201GHz		-7.0	dBm
Noise Figure	NF	Minus 0.7dB for test board input loss		2.8	dB
Reverse Isolation	S12			-28	dB
Biasing Voltage	Vcc			3.0	V