



### ■ General Description

The GW5515 is an InGaP/GaAs Heterojunction Bipolar Transistor (HBT) IC in a QFN 2.0 × 2.0 – 12 leads plastic package. The power amplifier is implemented as a two-stage monolithic microwave Integrated circuit (MMIC).

The GW5515 is designed to operate in 2.3 – 2.5GHz frequency range, compatible with 802.11n draft 8.0 and 802.11b/g wireless LAN system with high power, high gain. Power gain of 34dB is obtained with a low quiescent current of 80mA.

The GW5515 operate at 802.11n/g mode (OFDM 64QAM, 54Mbps), it provides a low EVM (Error-Vector magnitude) of 3% at +20dBm linear output power, and consumes 140mA total DC current.

### ■ Features

- 2.3 – 2.5GHz Operation
- Quiescent Current 80mA
- Small Signal Gain 34dB
- Total Current 140mA for POUT=20dBm OFDM
- EVM ~3 % 54Mbps / 64QAM
- Small Footprint: 2.0 × 2.0mm

### ■ APPLICATION

- IEEE 802.11n draft 8.0 WLAN
- IEEE 802.11b/g WLAN
- 2.4GHz ISM Band Application
- 2.4GHz Cordless Phones

### ■ Electrical Characteristics

The following test conditions:  $V_{CC} = 3.3V$ ,  $V_{ref} = 2.73V$ ,  $I_{CQ} = 80mA$ ,  $T_A = 25^{\circ}C$

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
Frequency Range		2.3	-	2.5	GHz
EVM @ POUT < 20dBm	802.11g OFDM 64 QAM		3.0		%
Output P <sub>1dB</sub>	1dB Gain compression		26		dBm
Total Current @ POUT = 20dBm	802.11g OFDM 64 QAM EVM = 2.5%		140		mA
Pout for 11g Spectral mask	802.11g OFDM 64 QAM		25		dBm
Quiescent Current			80		mA
Bias Control Reference Current	At $I_{CQ} = 80mA$		1.2		mA
Small Signal Gain	Pin=-30dBm		34		dB
Power Gain @ POUT = 20dBm			33.5		dB
Gain Flatness	2.3 – 2.5GHz		±0.2		dB
Input Return Loss	Pin=-30dBm		10		dB
Output Return Loss	Pin=-30dBm		10		dB
Second Harmonic	POUT = 20dBm		-45		dBc
Third Harmonic	POUT = 20dBm		-50		dBc
Total Current @ POUT = 23dBm	802.11b 11Mbps CCK		210		mA
2nd Side Lobe @ 22dBm			-50		dBc
Ramp-On Time			100		ns

- Notes: 1. All measurements made in 50Ω system, unless otherwise specified.  
2. All measured data was obtained on a 10mil FR4 evaluation board without heat sink.