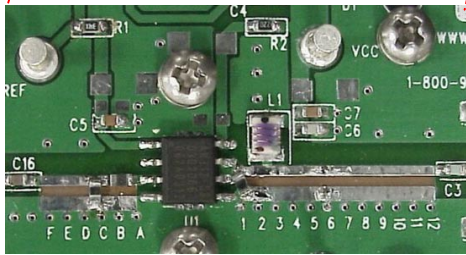
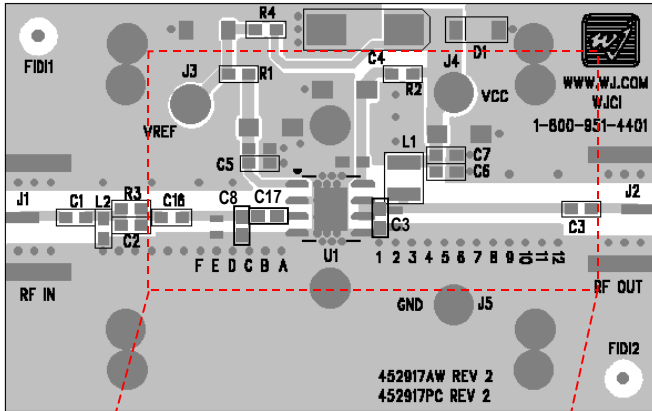




Summary

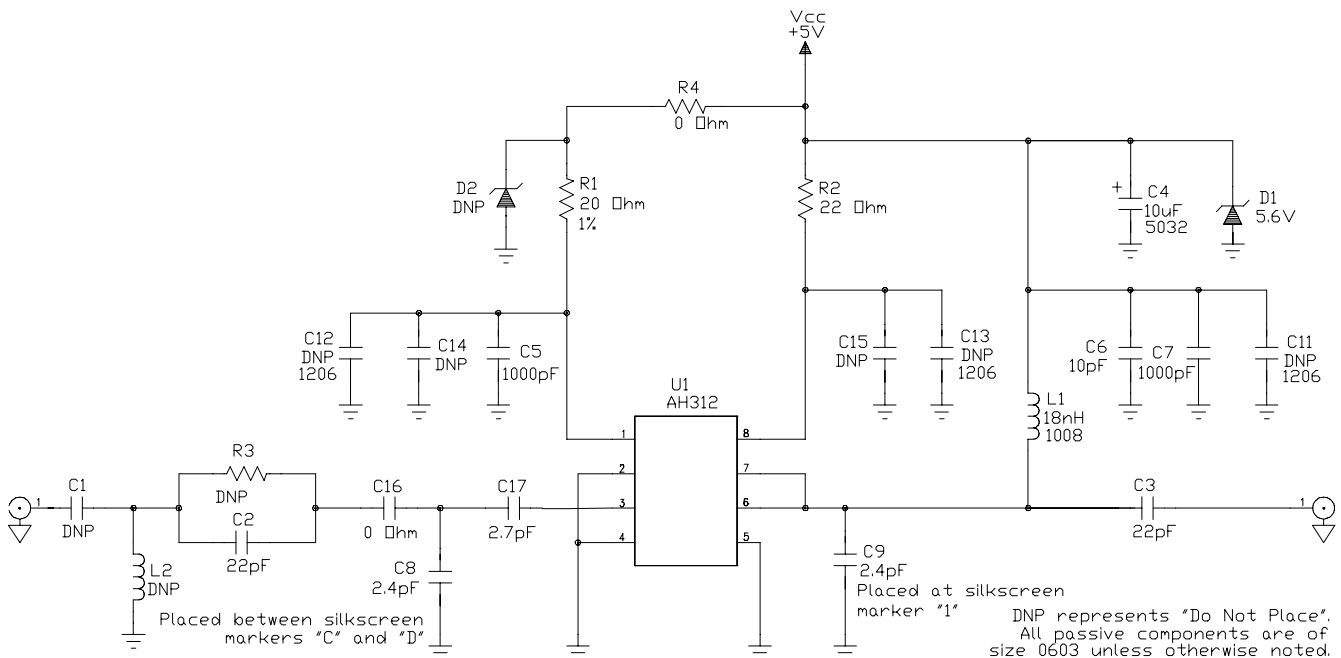
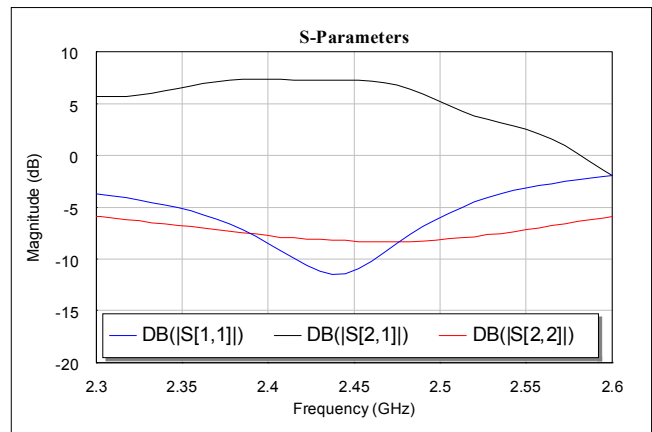
The AH312 is a high linearity 2-Watt MMIC amplifier targeted for 2nd and 3rd generation wireless mobile infrastructure as well as other applications requiring high output power. At 1.9 GHz, the amplifier typically has 12 dB gain, +33 dBm P1dB, and +49 dBm OIP3. On the product's datasheet, the amplifier is shown as having an operational frequency range between 400 – 2300 MHz. The higher end of the frequency range is set at 2.3 GHz because of the limited amount of available gain from the device. **This application note examines the performance of the AH312 tuned for 2450 MHz, often a popular frequency for applications such as fixed wireless and RFID.** At this frequency, the amplifier has 7.3 dB gain, +32.5 dBm P1dB, and +44.5 dBm OIP3. More details of the circuit application are shown below. For applications requiring lower quiescent current, R1 can be increased in value to bias the device in Class AB operation, although the OIP3 and P1dB performance may be slightly degraded.

Circuit Board Material: .014" Getek ML200DSS ($\epsilon_r = 4.2$), 1 oz copper
The main microstrip line has a line impedance of 50 Ω .



Measured RF Performance

Frequency	2450 MHz
S21 – Gain	7.3 dB
S11 – Input Return Loss	-11 dB
S22 – Output Return Loss	-8.3 dB
Output P1dB	+32.5 dBm
Output IP3 (+10 dBm / tone, 1 MHz spacing)	+44.5 dBm
Device / Supply Voltage	+5 V
Device Current	800 mA



Specifications and information are subject to change without notice.