



Application Note

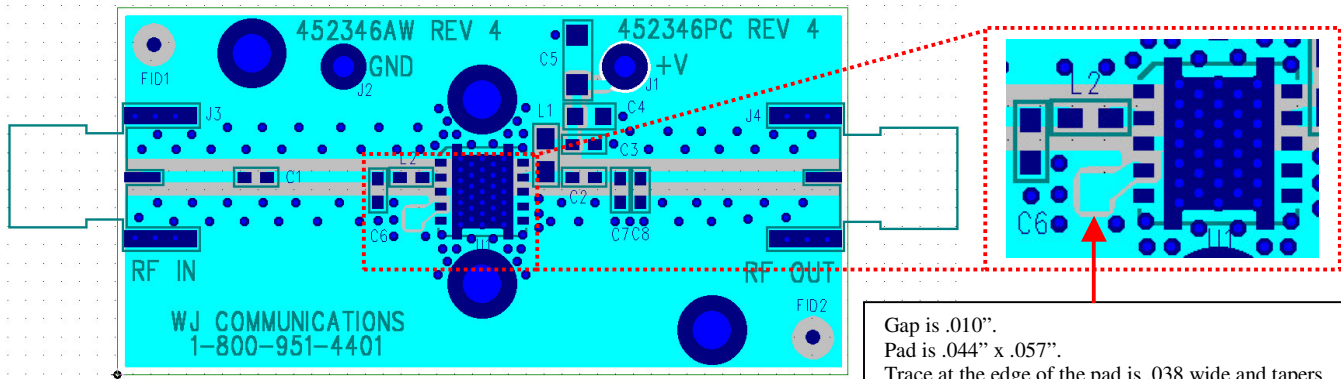
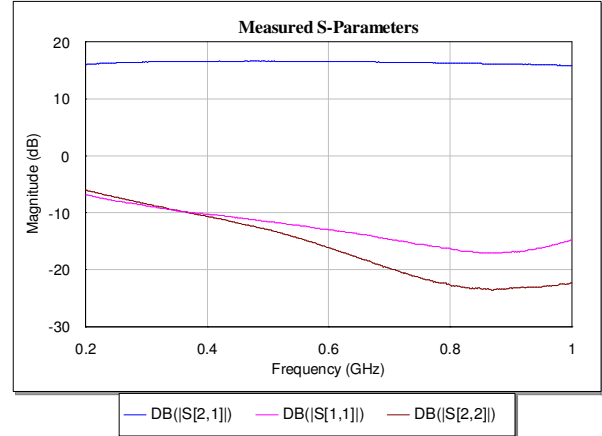
AH201 400 MHz to 900 MHz Reference Design

Summary

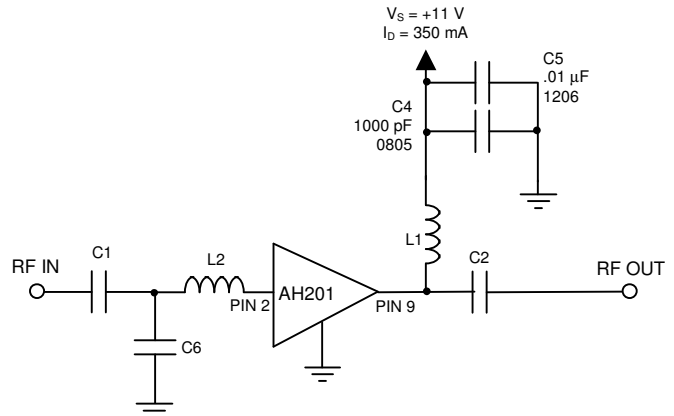
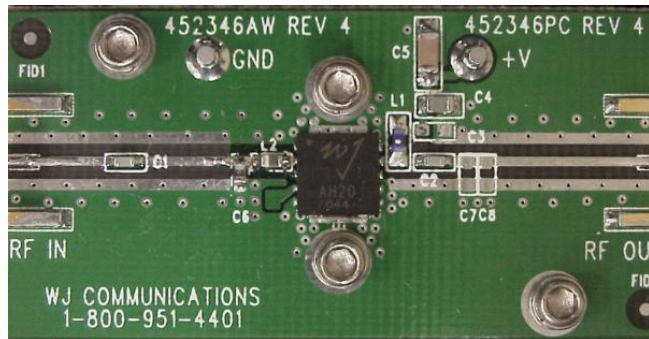
The AH201 is a high linearity 1-Watt MMIC amplifier targeted for 2nd and 3rd generation wireless mobile infrastructure as well as other applications requiring medium output power and high linearity. **This application note examines the performance of the AH201 tuned for wideband performance from 400 MHz to 900 MHz.** More details of the circuit application are shown below.

Measured RF Performance

Frequency	MHz	450	900
S21 – Gain	dB	16.6	16.1
S11 – Input Return Loss	dB	-10.9	-16.9
S22 – Output Return Loss	dB	-11.8	-23.2
Output P1dB	dBm	30.1	30.4
Output IP3 (+15 dBm / tone, 10 MHz spacing)	dBm	46.5	47.6
Device / Supply Voltage	V	+11	
Device Current	mA	350	



Circuit Board Material: .014" Getek ($\epsilon_r=4.2$), 4 layers (other layers added for rigidity), .062" total thickness, 1 oz copper
 Microstrip line details: width = .028", spacing = .036"
 The stub on pin 4 is added for additional external matching.
 This stub should not be grounded for proper operation.



Notes:

- Via holes are omitted for clarity.
- The microstrip line is weakly co-planar. Ground planes around it are not necessary for operation of the AH201.
- Adequate heat sinking is required for the device. Further mounting instructions are shown in the AH201 datasheet.
- The RF choke should be a wirewound ceramic type to insure sufficient current carrying capacity. Coilcraft's 0805 CS series is recommended.
- Pin 4 should contain a stub as shown above.

Frequency	400 – 900 MHz	Size
C1, C2	100 pF	0603
C4	1000 pF	0805
C5	0.1 μF	1206
C6	2.2 pF	0603
L1	33 nH	0805
L2	4.7 nH	0603

Specifications and information are subject to change without notice.