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# INA-30/50 RFIC Amplifier Demonstration Board

## Assembly and Operating Instructions

INA-30311  
INA-50311

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### Introduction

This demonstration board allows you to test and evaluate the performance of the INA-30311 and INA-50311 RFIC amplifiers under your specific application condition. This board is designed with 50  $\Omega$  input and output microstrip lines and accommodates a SOT-143 surface mount package (Hewlett-Packard package type 11, Outline 143).

Note that the INA-30311 amplifier is designed with a 50  $\Omega$  input and a 200  $\Omega$  output match. This board will only provide test results with the output connected to a 50  $\Omega$  load. A separate demonstration board is available for the INA-30311 that includes an output circuit to match the amplifier's 200  $\Omega$  output to a 50  $\Omega$  load.

Both the input and output of the INA-50311 amplifier are 50  $\Omega$ .

### Assembly

The amplifier and related components are assembled onto the printed circuit board as shown in Figure 1.

DC blocking capacitors may be used at the input and output of the RFIC to isolate device voltages from adjacent circuits or test equipment. The breaks in the 50  $\Omega$  input and output microstrip lines will allow mounting of common sizes of chip capacitors. Capacitors of approximately 820 pF or greater will work well down to frequencies below 100 MHz.

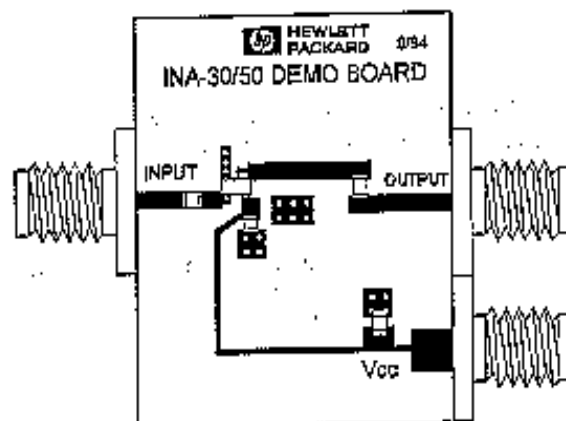


Figure 1. Assembly Drawing

A bypass capacitor must also be placed from the  $V_{cc}$  connection at the package to ground. Space is provided on the circuit board to add an optional bypass capacitor to the bias line near the  $V_{cc}$  connection to the board.

The board layout is designed to use SMA connectors intended for PCB mounting (such as the EF Johnson Type 142). The connectors slip over the edge of the board without the need for drilling any holes. The center conductor is soldered to the input or output microstrip line and the grounding pins of the connectors are soldered to the ground planes on the backside of the board.