

Evaluation Board Assembly Biasing Configuration

Introduction

This application note provides information on the evaluation board assembly supplied by RFMD. This information covers NBB Series HBT Broadband Feedback Amplifiers and NDA Series HBT Distributed Amplifiers.

The evaluation board assembly provided by RFMD is intended for customers to evaluate our product using a network analyzer.

NBB Series HBT Broadband Feedback Amplifiers

1. What is provided with the evaluation board assembly?
 - a. An NBB part mounted on a PCB with connectors.
 - b. S-parameter data (provided with all evaluation boards).

Note: The s-parameter data gain results include device performance as well as evaluation board and connector loss variations. The insertion losses of the evaluation board and connectors are as follows.

1. 1 GHz to 4GHz=-0.06dB
2. 5GHz to 9GHz=-0.22dB
3. 10GHz to 14GHz=-0.50dB
4. 15GHz to 20GHz=-1.08dB

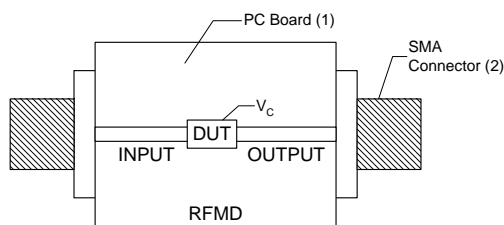


Figure 1. NBB-Series Evaluation Board

2. Bill of Materials for NBB Series evaluation board assembly:
 - a. NBB series component.
 - b. Two (2) SMA connectors.
 - c. One (1) PC board material, Rogers Corp. part number: TMM-6, 20mil thick or equivalent.
 - d. 60/40 tin-lead solder.

3. Figure of Evaluation Board with external biasing

Note: Biasing components are not supplied with evaluation board assembly.

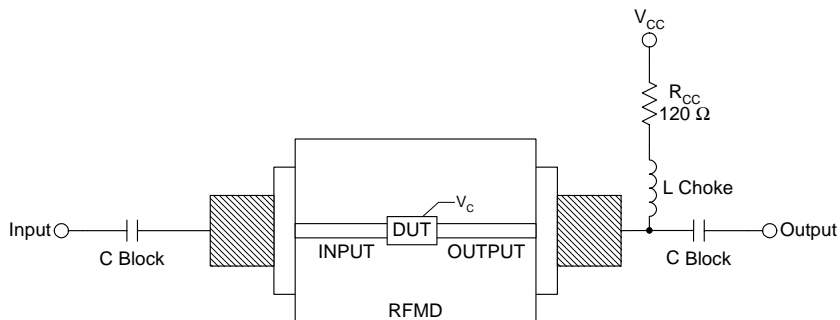


Figure 2. NBB-Series Evaluation Board with External Biasing

NDA Series HBT Distributed Amplifiers

1. What is provided with the evaluation board assembly?
 - a. An NDA part mounted on a PCB with connectors.
 - b. Biasing resistor R_{CC1} (120Ω).
 - c. S-parameter data (provided with all evaluation boards).

Note: The s-parameter data gain results include device performance as well as evaluation board and connector loss variations. The insertion losses of the evaluation board and connectors are as follows.

1. 1 GHz to 4GHz=-0.06dB
2. 5GHz to 9GHz=-0.22dB
3. 10GHz to 14GHz=-0.50dB
4. 15GHz to 20GHz=-1.08dB

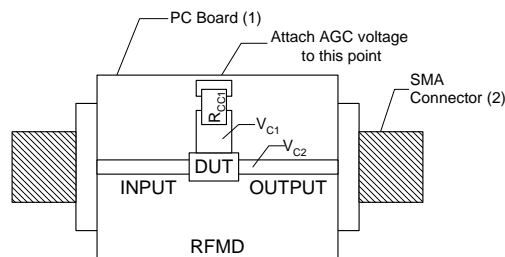


Figure 3. NDA-Series Evaluation Board

2. Bill of Materials for NDA Series evaluation board assembly:
 - a. NDA series component.
 - b. $120\Omega \pm 5\%$ surface-mount resistor.
 - c. Two (2) SMA connectors.
 - d. One (1) PC board material, Rogers Corp. part number: TMM-6, 20mil thick or equivalent.
 - e. 60/40 tin-lead solder.

3. Figure of Evaluation Board with external biasing

Note: Biasing components are not supplied with evaluation board assembly.

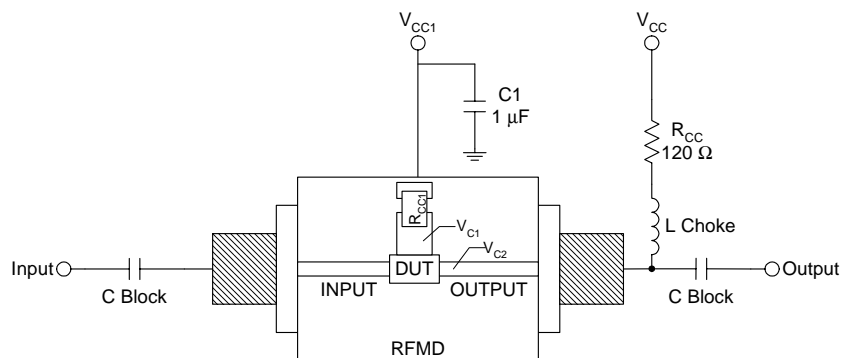


Figure 4. NDA-Series Evaluation Board with External Biasing