LNF-LNC0.3_14B s/n 5474H

0.3-14 GHz Cryogenic Low Noise Amplifier

2025-05-22

Absolute maximum ratings

Parameter	Min	Max
V_{ds}	-0.5 V	2.5 V
I_{ds}		100 mA
V_{gs}	-20 V	20 V
RF Input drive level		0 dBm

Nominal bias @ 296 K

Parameter	Value
V_{ds}	2.00 V
I_{ds}	45 mA
V_{gs}	1.38 V

Nominal bias @ 4 K

Parameter	Value
V_{ds}	1.20 V
I_{ds}	20 mA
V_{gs}	2.05 V

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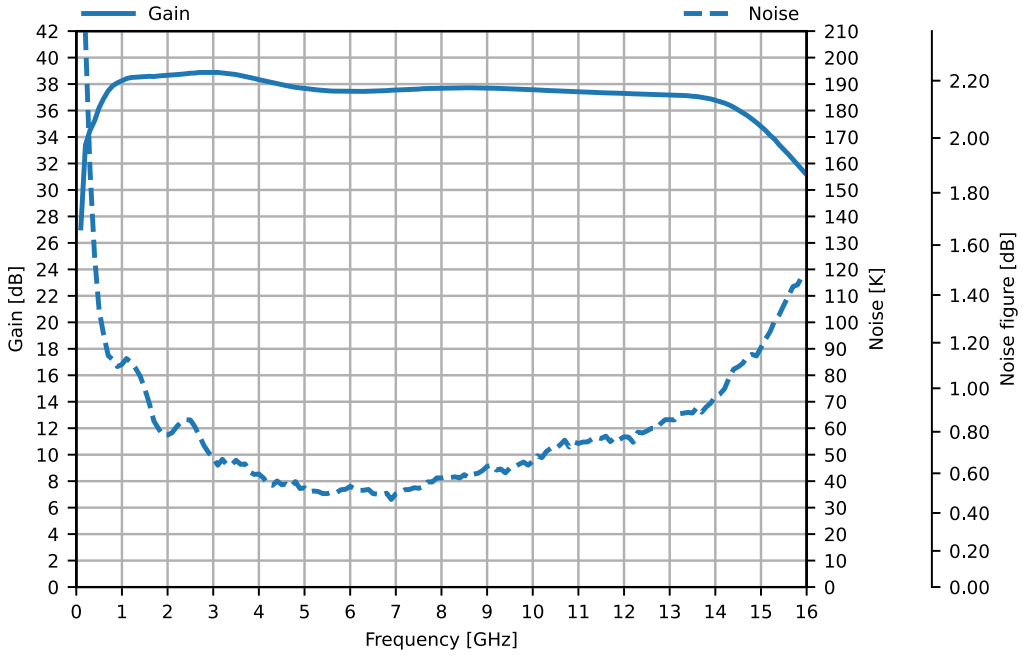
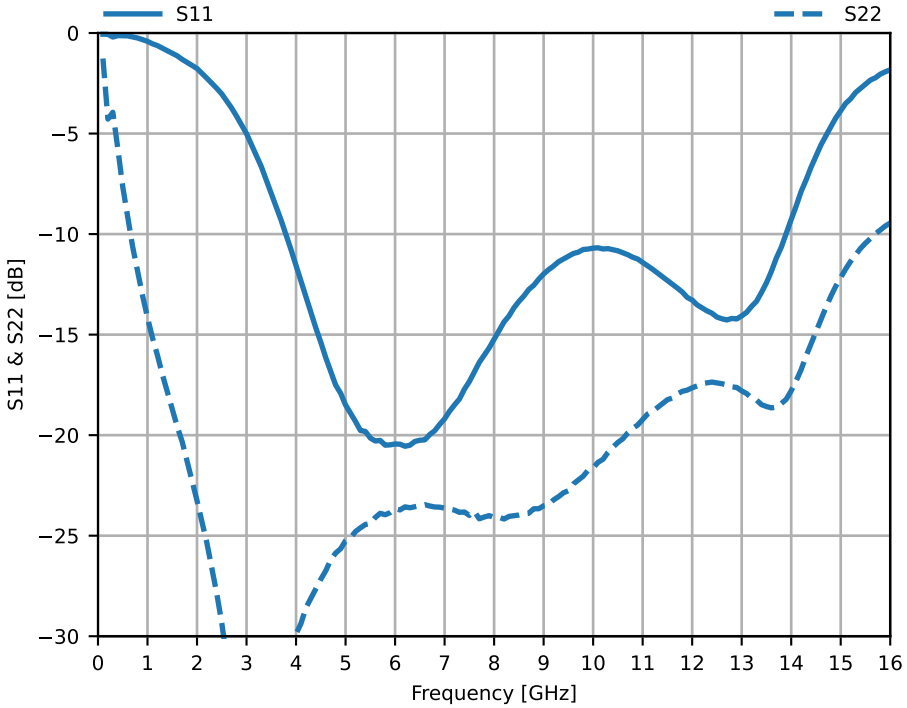
Measured data, Tamb=296 K





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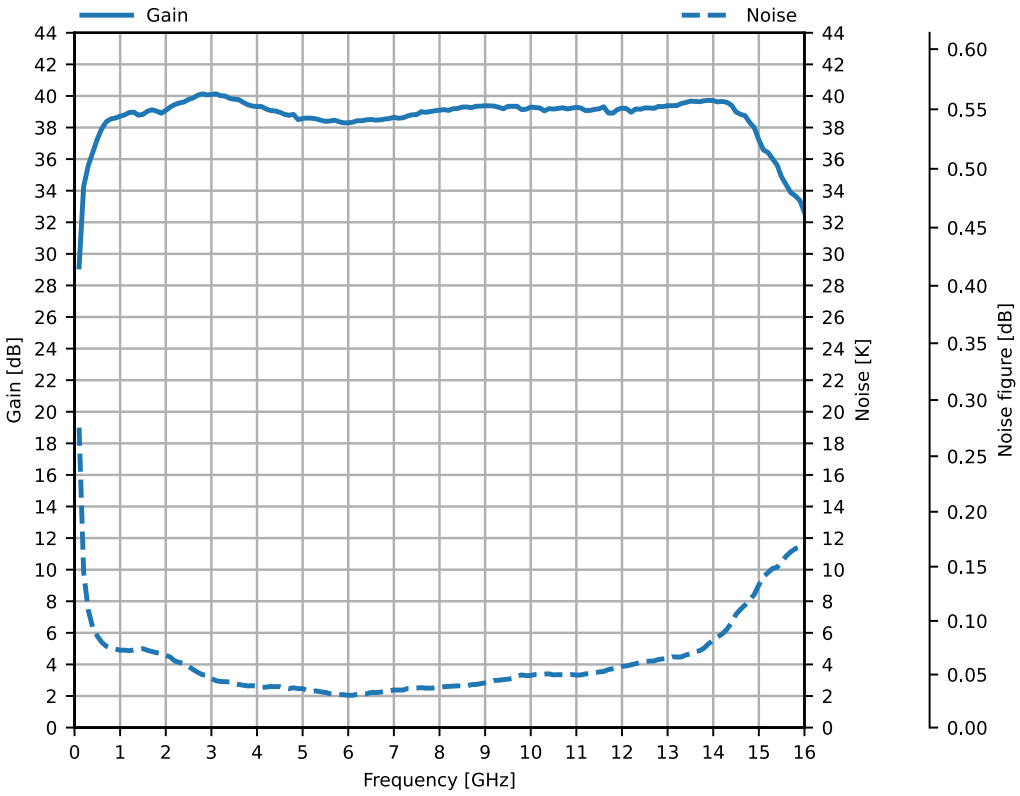
Measured data, Tamb=4 K



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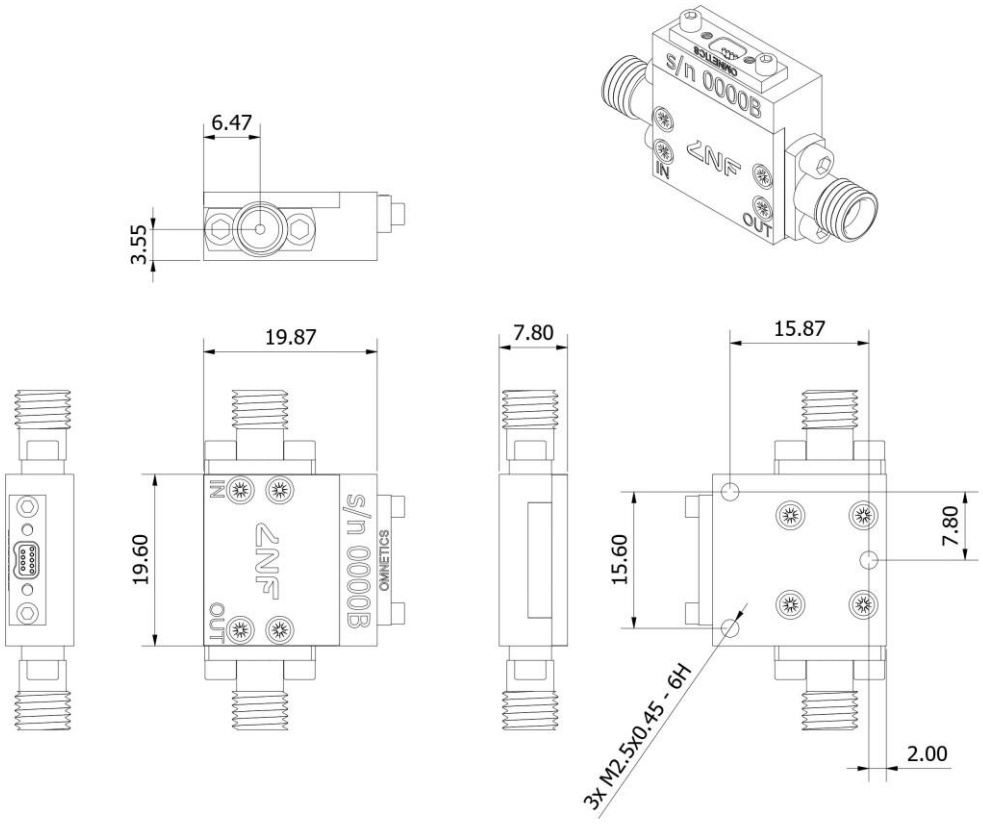

Dimensions are in millimeter

LNF-LNC0.3_14B s/n 5474H

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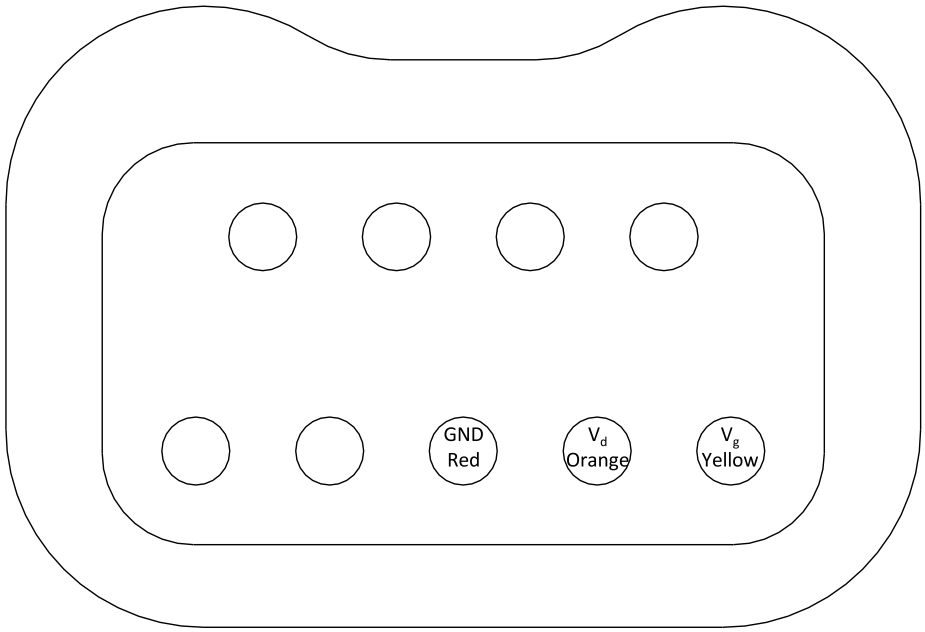
Nano-D panel connector seen from outside the LNA



2025-05-22

Biasing procedure

For safe operation of the LNA, please carefully follow the instructions below. Always honor the maximum ratings stated in the datasheet.

With constant current supply, e.g. LNF-PS_3, LNF-PS_4 and LNF-PS_EU2

Power up:

1. Switch on the power supply
2. Double check that Vd is set to the nominal voltage in the datasheet
3. Connect the LNA's RF input and output to your grounded test set-up
4. Connect the power supply to the LNA
5. Check that the measured Ids is equal to the nominal value in this datasheet. Tune to the correct value if necessary.
6. Before starting a cool down, make sure that the power supply is set to the stated values at 10K. Do not cool down with the power supply set to the room temperature values.

Power down:

1. Disconnect the power supply from the LNA
2. Disconnect the LNA's RF input and output
3. Switch off the power supply

With constant voltage supply, e.g. LNF-PS_1

Power up:

1. Switch on the power supply
2. Set Vd and Vg to the nominal voltages stated in this datasheet
3. Connect the LNA's RF input and output to your grounded test set-up
4. Connect the power supply to the LNA
5. Fine tune Vg to get the nominal Ids stated in this datasheet. The actual Vg can deviate a bit from the value in the datasheet depending on ground wire resistance in your set-up.
6. Before starting a cool down, make sure that the power supply is set to the stated values at 10K. Do not cool down with the power supply set to the room temperature values.

Power down:

1. Disconnect the power supply from the LNA
2. Disconnect the LNA's RF input and output
3. Switch off the power supply