

PSpice Model

Isolated Amplifier

TEXAS INSTRUMENTS

AMC1301

Model Information

Model A macro model
Call Name MDC_AMC1301_PS
Pin Assign 1:VDD1 2:VINP 3:VINN 4:GND1 5:GND2 6:VOUTN 7:VOUTP 8:VDD2
File List Model Library MDC_AMC1301_PS01.lib
 Model Report MDC_AMC1301_PS.pdf(this file)
Verified Simulator Version PSpice v17.2

Note

References

The information which was used for modeling is as follow:

[Data Sheet]

- Date/Version JAJSC88F –APRIL 2016–REVISED APRIL 2020
- Product name AMC1301
- Company name TEXAS INSTRUMENTS

[Characteristics listed]

- Characteristics
 - Input Offset Voltage vs Supply Voltage
 - Input Bias Current vs Common-Mode Input Voltage
 - Output Voltage vs Input Voltage
 - Pulse Response
 - Normalized Gain vs Input Frequency

Simulation Condition

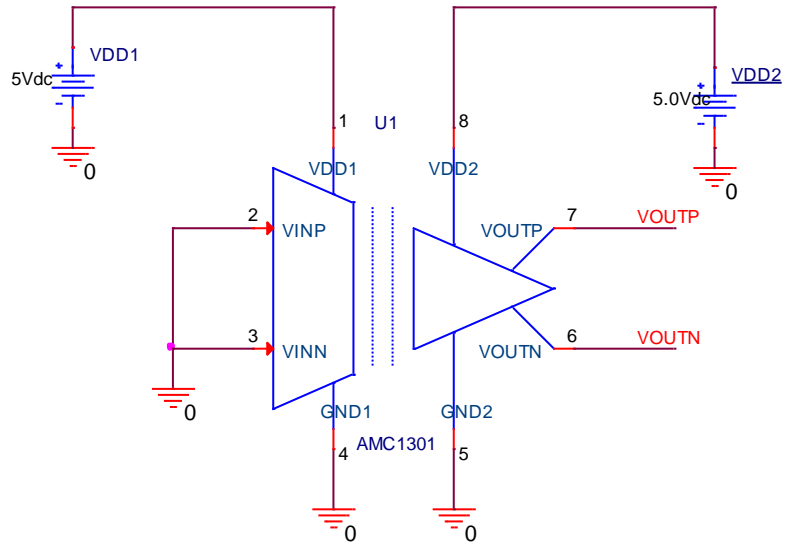
This table shows the range of evaluated simulation range that was not occurs any convergence problems in this area.

Item	Condition	Unit
Temperature	25	deg C

Model Functions Table

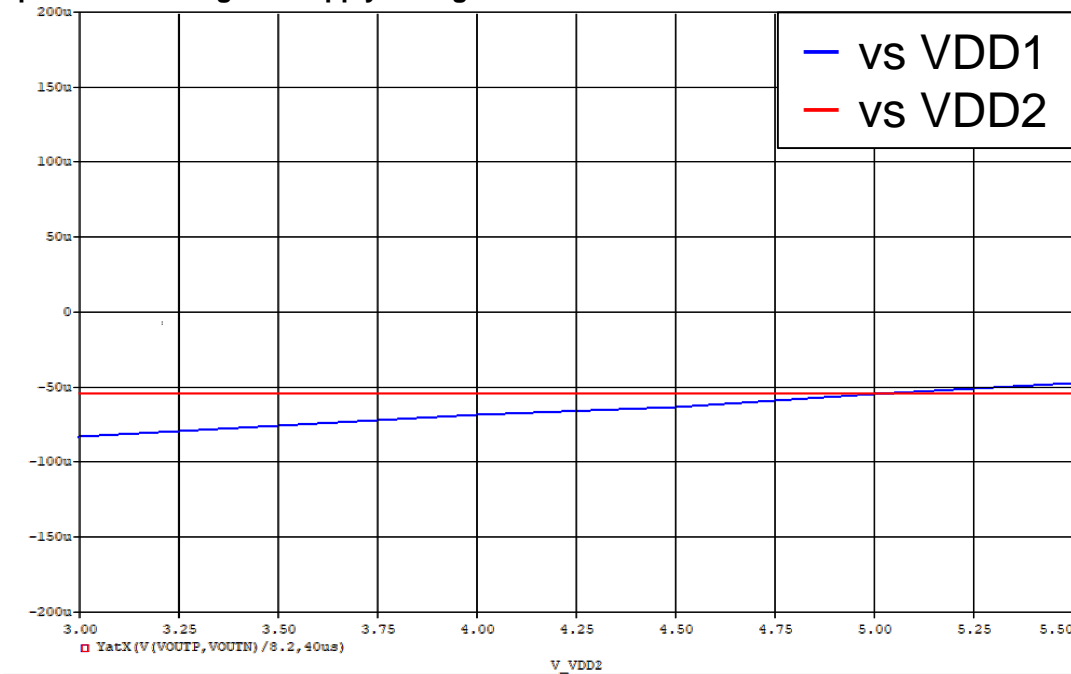
Functions	Implemented
± 250 -mV input voltage range	<input type="radio"/>
Low offset error	<input type="radio"/>
Fixed gain: 8.2	<input type="radio"/>
3.3-V operation	<input type="radio"/>
isolated input to output	<input type="radio"/>

Input Offset Voltage vs Supply Voltage Testbench

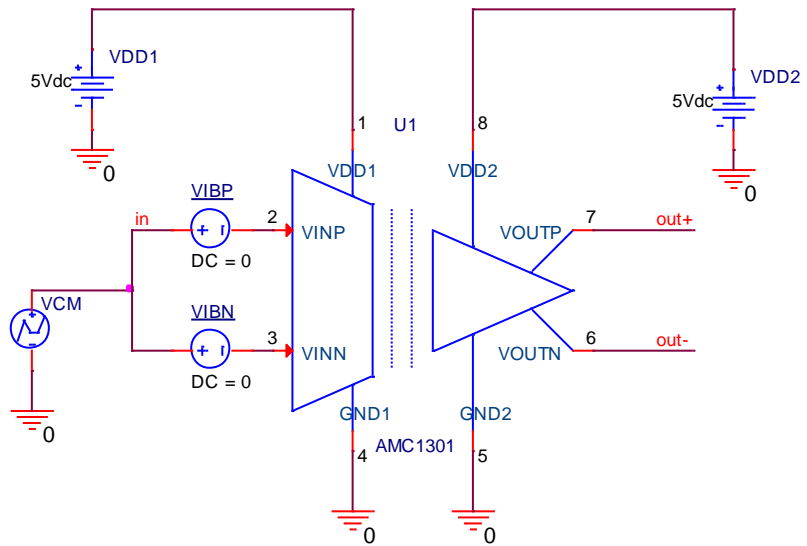


Simulation results are following.
 Explanatory notes — : simulated

Input Offset Voltage vs Supply Voltage

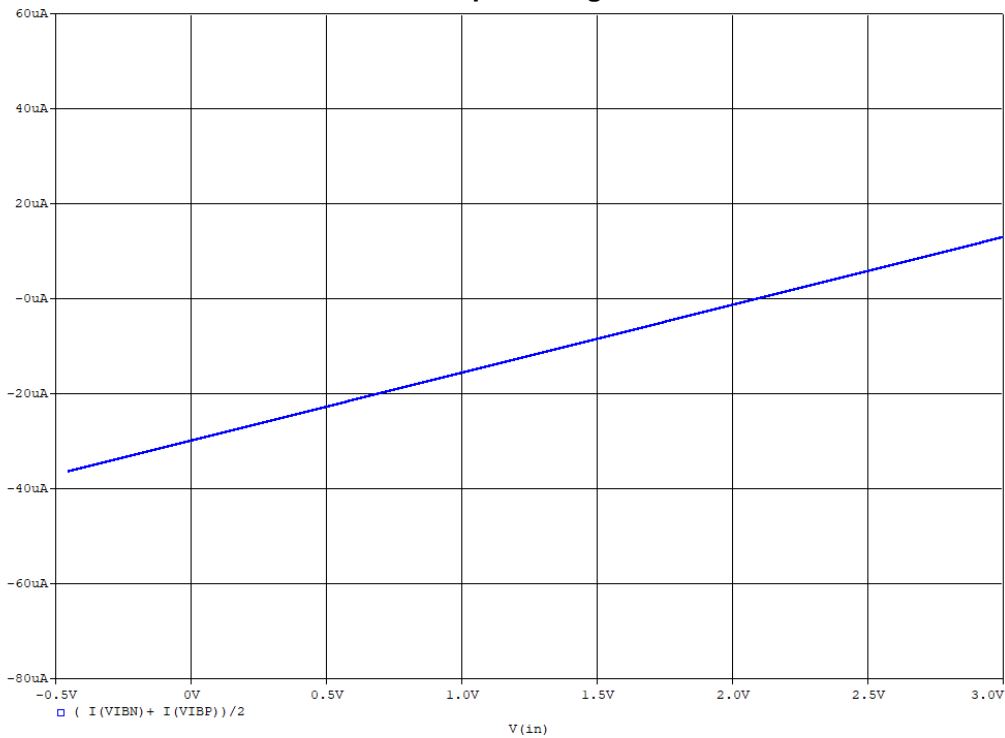


Input Bias Current vs Common-Mode Input Voltage Testbench

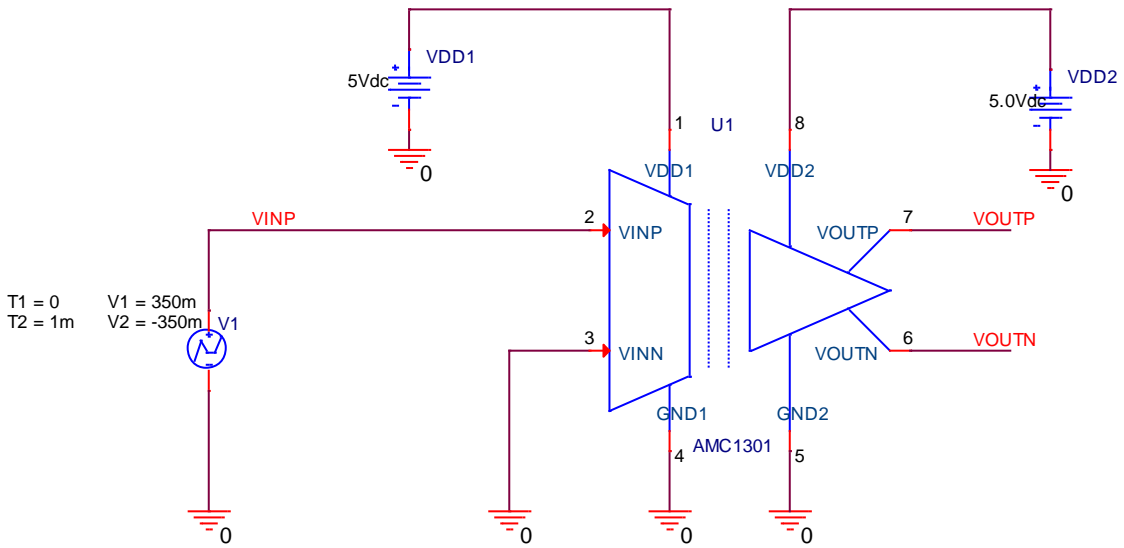


Simulation results are following.
 Explanatory notes — : simulated

Input Bias Current vs Common-Mode Input Voltage

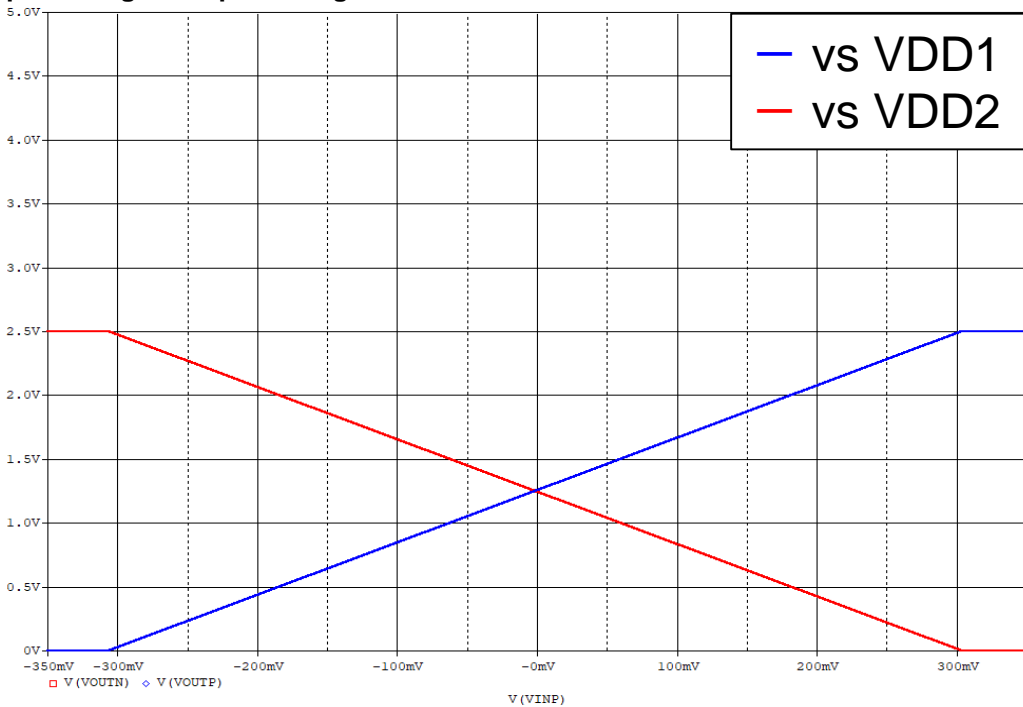


Output Voltage vs Input Voltage Testbench
Referred to Data Sheet

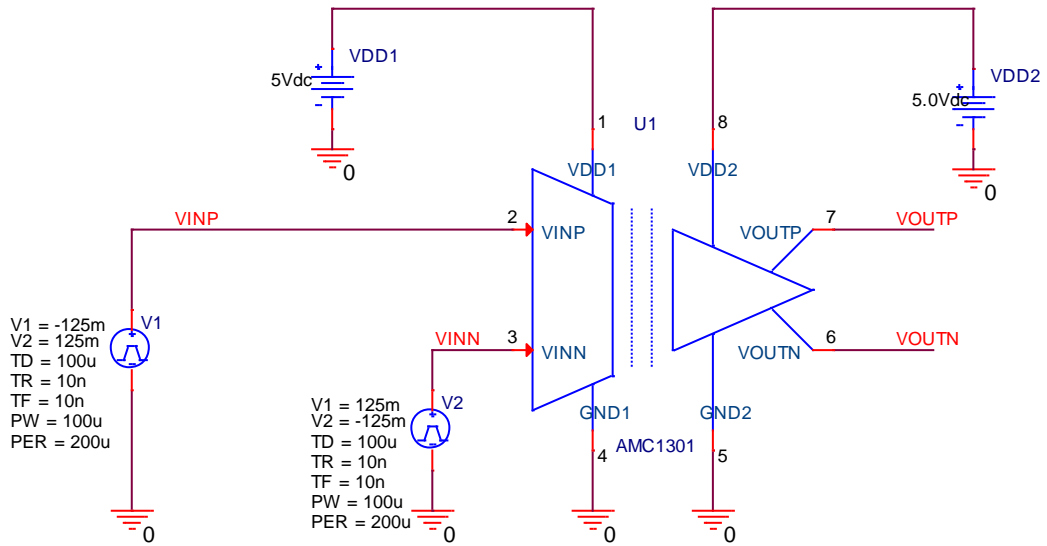


Simulation results are following.
 Explanatory notes — : simulated

Output Voltage vs Input Voltage

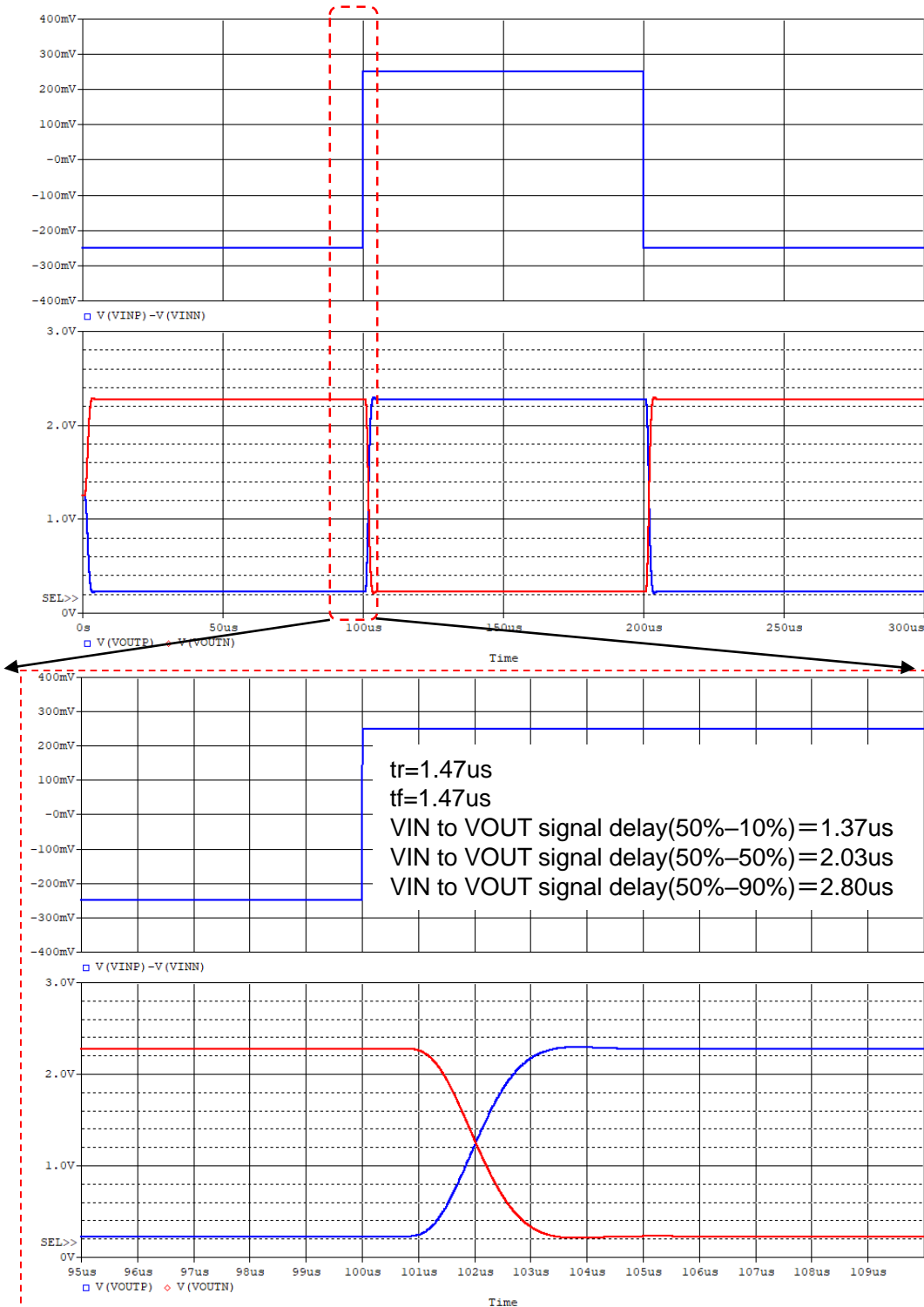


Pulse Response Testbench

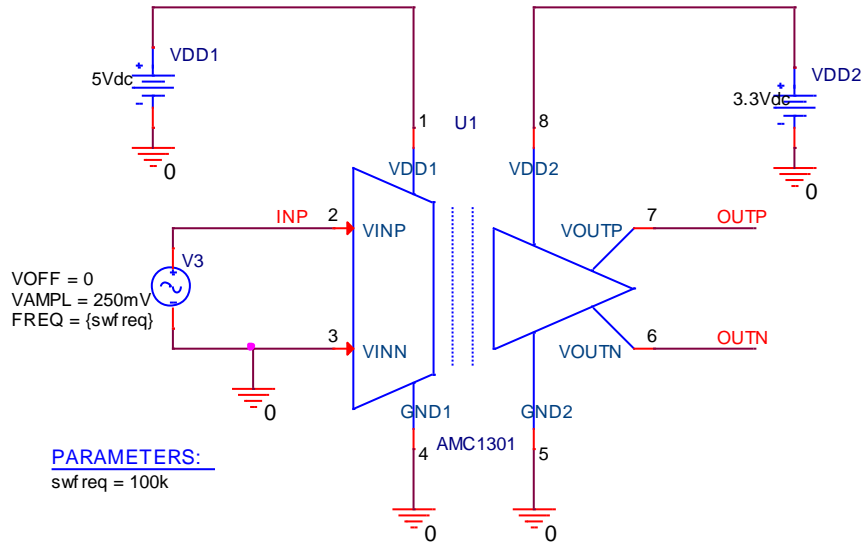


Simulation results are following.
 Explanatory notes — : simulated

Pulse Response

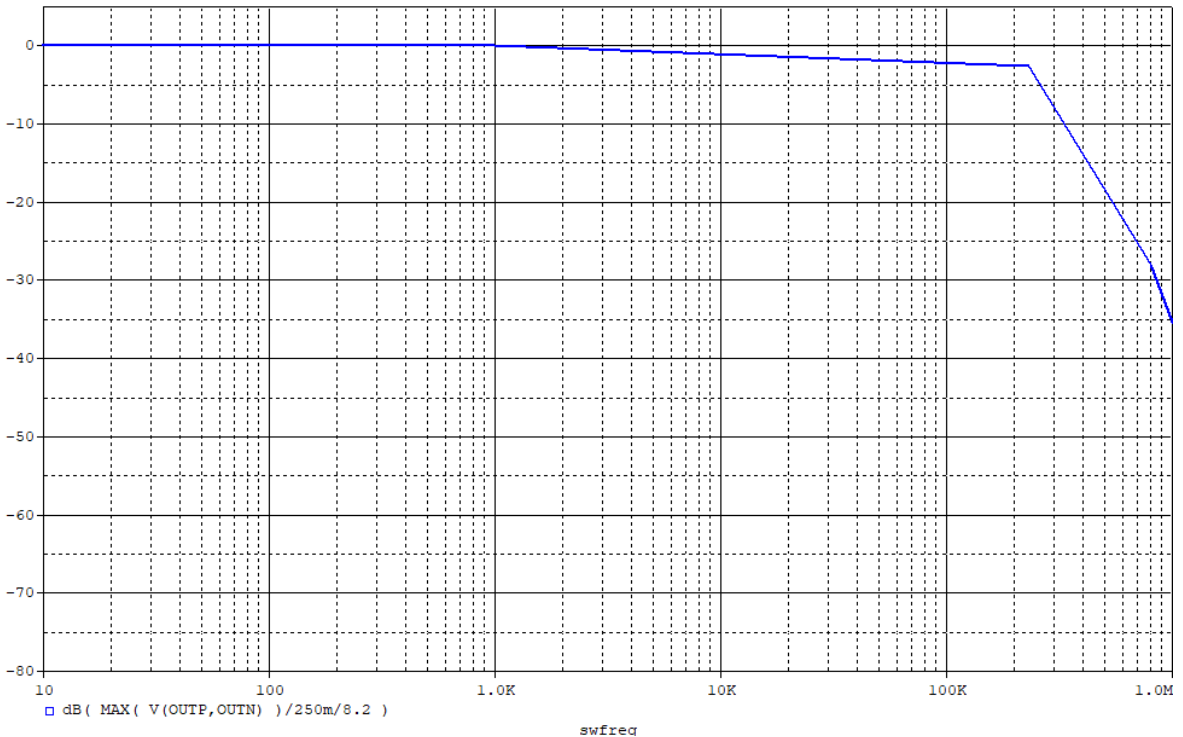


Normalized Gain vs Input Frequency Testbench



Simulation results are following.
 Explanatory notes — : simulated

Normalized Gain vs Input Frequency



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