LTspice Model
OpAmp
Texas Instruments
LM2904BQDGKRQ1

Model Information

Model A macro model
Call Name MDC_LM2904BQDGKRQ1_LT
Pin Assign 1:OUT1,2:IN1-,3:+IN1+,4:V-,5:IN2+,6:IN2-,7:OUT2,8:V+
File List Model Library MDC_LM2904BQDGKRQ1_LT.lib
Model Report MDC_LM2904BQDGKRQ1_LT.pdf(this file)

Verified Simulator Version LTspice XVII

Note

References

The information which was used for modeling is as follow:

[Data Sheet]
- ●Date/Version 2022/JAJSGZ8K
- ●Product name LM2904BQDGKRQ1
- ●Company name Texas Instruments Incorporated.

[Characteristics listed]
- ●Characteristics
  - Open Loop Gain , Phase
  - Closed Gain
  - Input Offset Voltage
  - Bias Current
  - Slew Rate

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

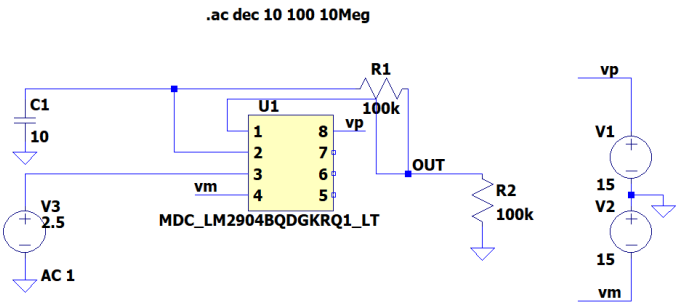
○ : Implemented
× : Not Implemented
— : Not applicable

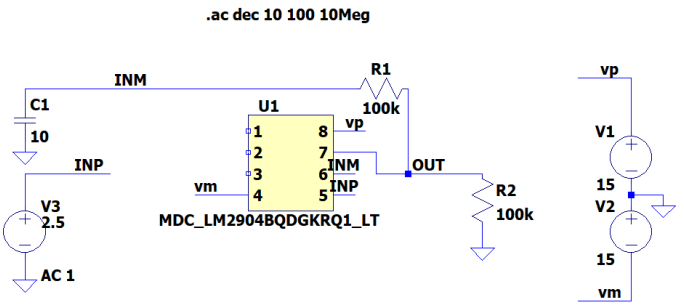
Model Functions Table

	RANK=1	
Functions	RANK	Implemented
Open Loop Gain	1	○
Unity Frequency	1	○
Phase Margin	1	○
Input Offset Voltage	1	○
Input Offset Current	1	○
Bias Current	1	○
Maximum output amplitude voltage	1	○
Slew Rate	1	○
Equivalent Input Noise Voltage	2	×
Equivalent Input Noise Current	2	×

Open Loop Gain , Phase Testbench

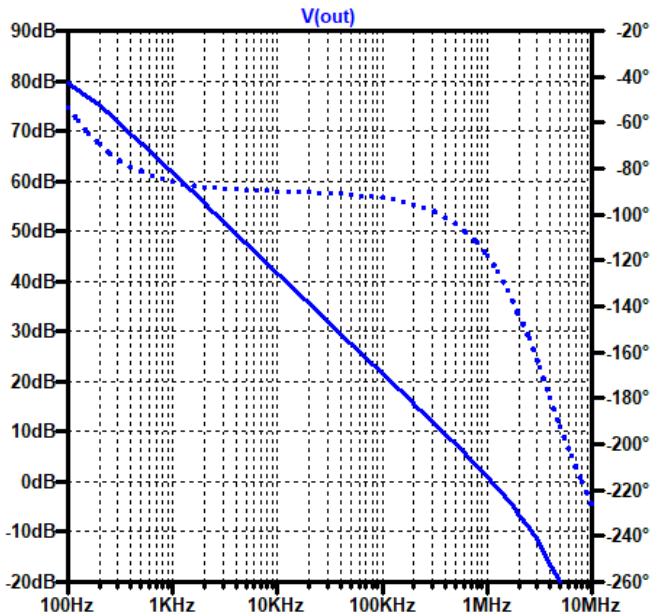
Referred to Data Sheet

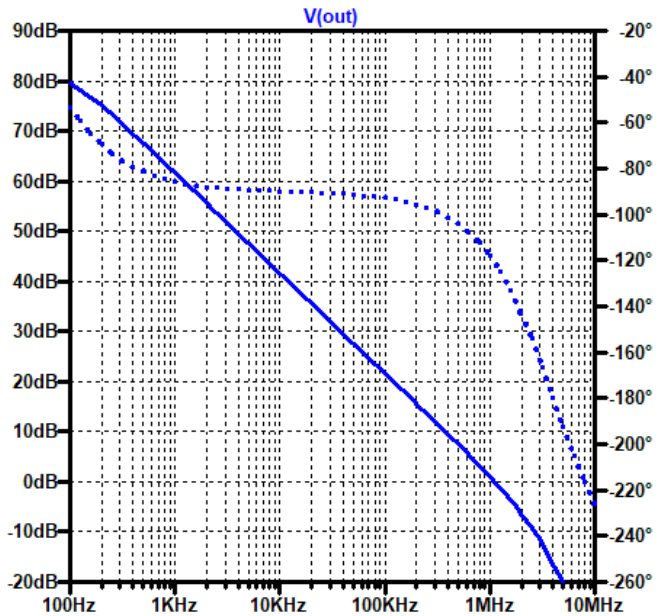




Simulation results are following.
Explanatory notes — : simulated

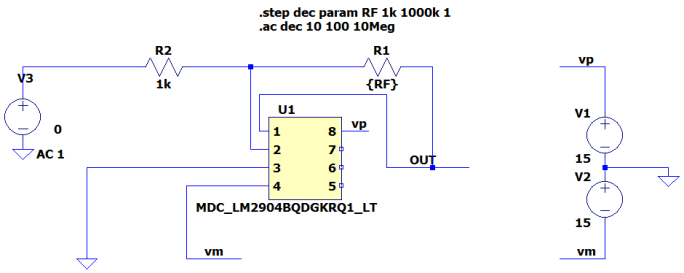
Open Loop Gain , Phase

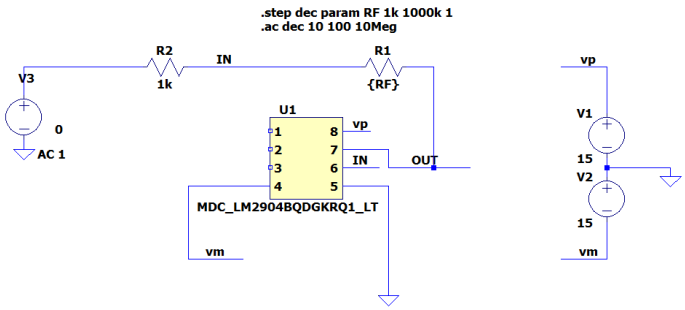




Closed Loop Gain Testbench

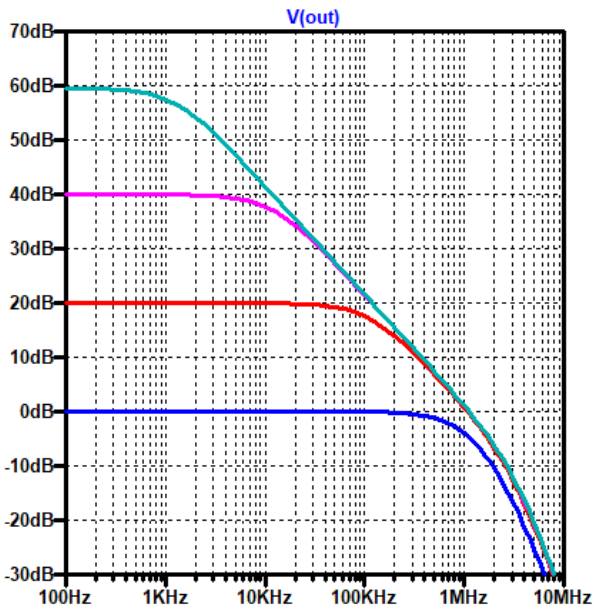
Referred to Data Sheet

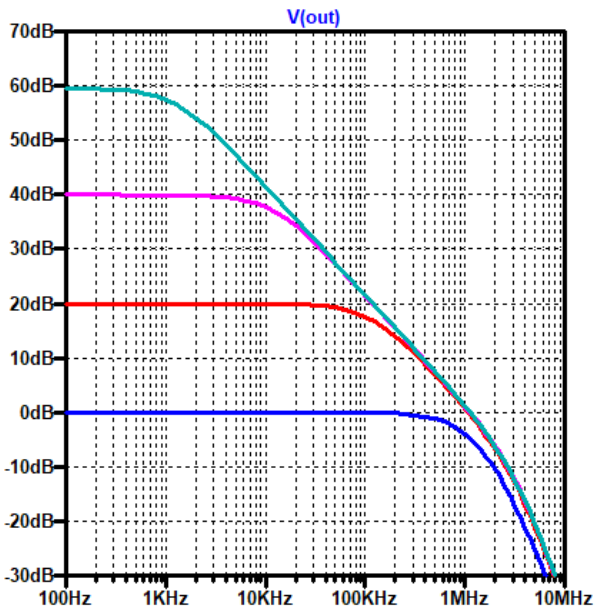




Simulation results are following.
Explanatory notes — : simulated

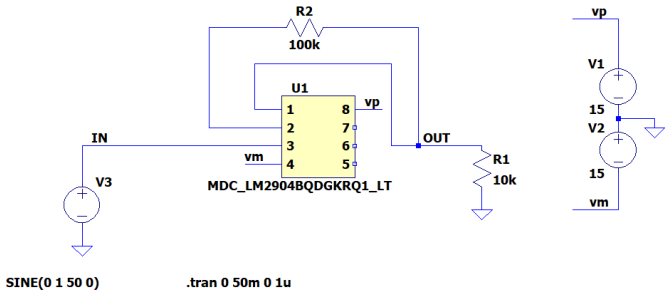
Closed Loop Gain

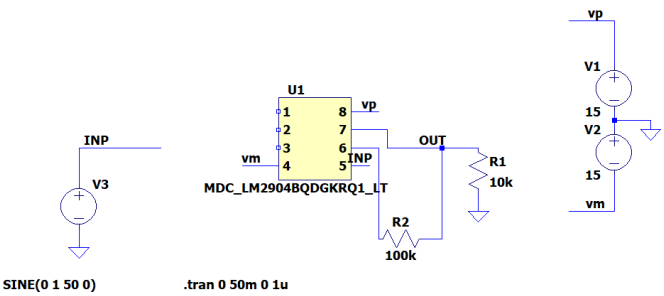




Input Offset Voltage Testbench

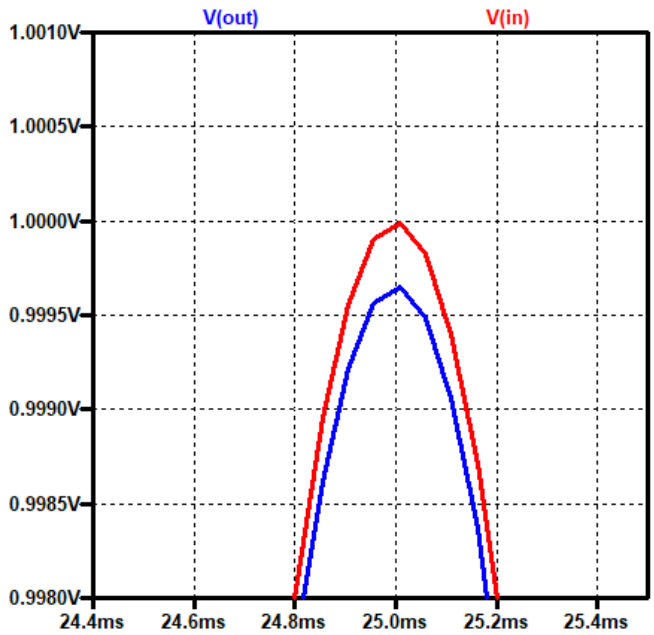
Referred to Data Sheet

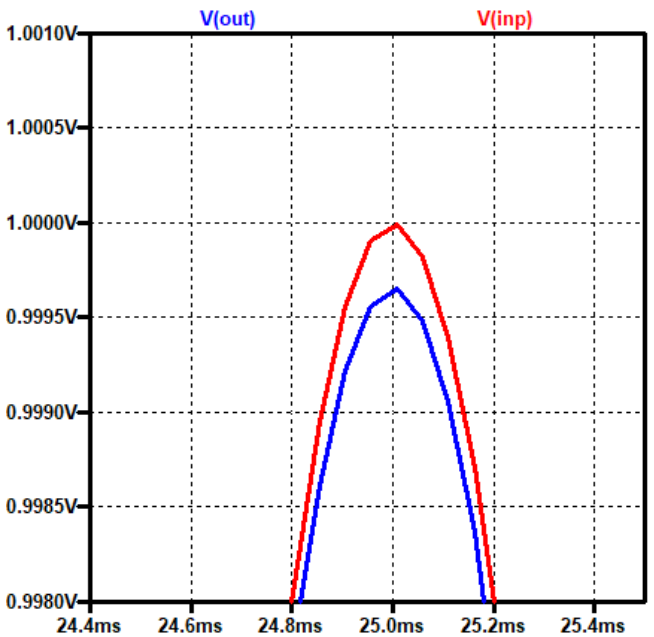




Simulation results are following.
Explanatory notes — : simulated

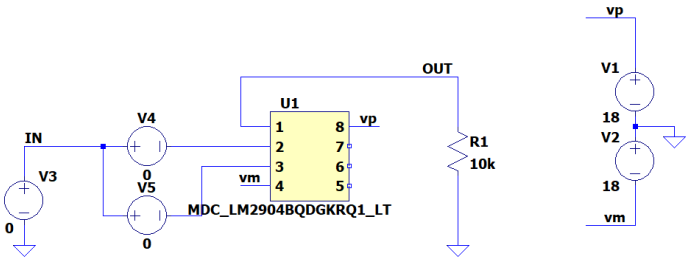
Input Offset Voltage



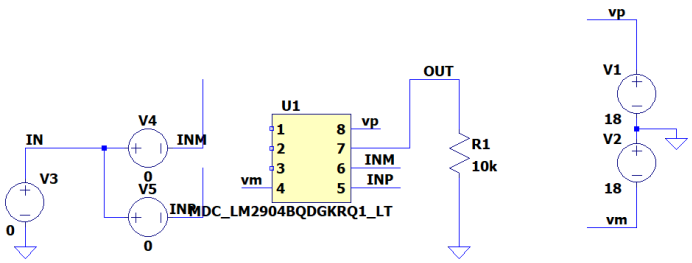


Bias Current Testbench

Referred to Data Sheet



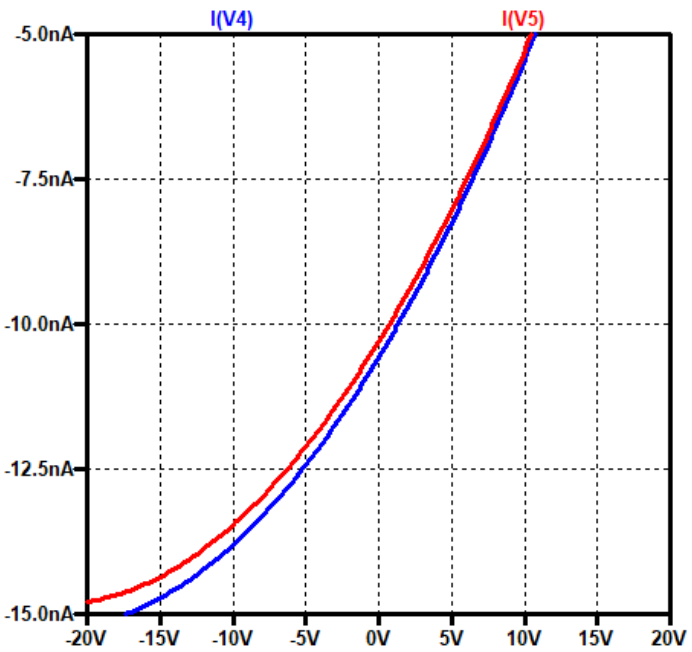
.dc V3 -20 20 0.1

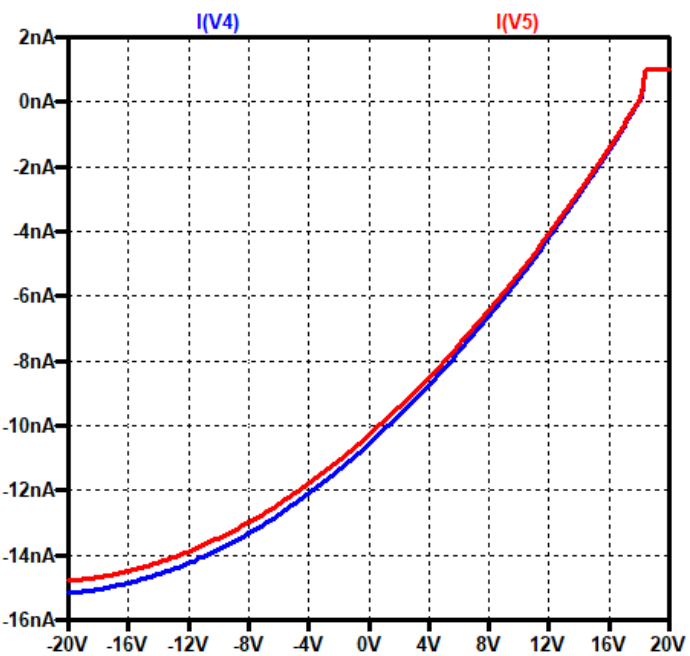


.dc V3 -20 20 0.1

Simulation results are following.
Explanatory notes — : simulated

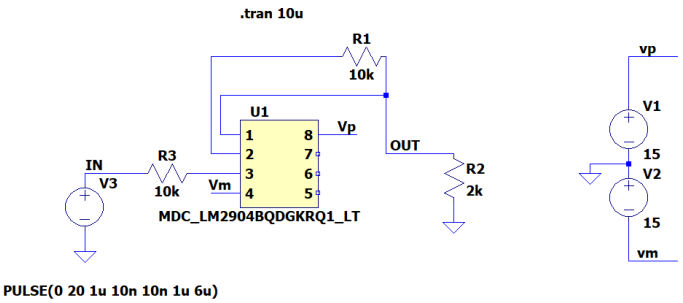
Bias Current

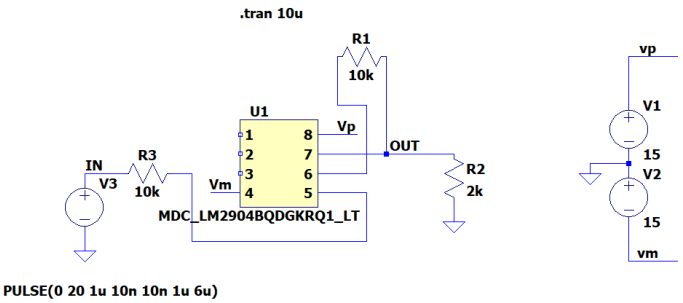




Slew Rate Testbench

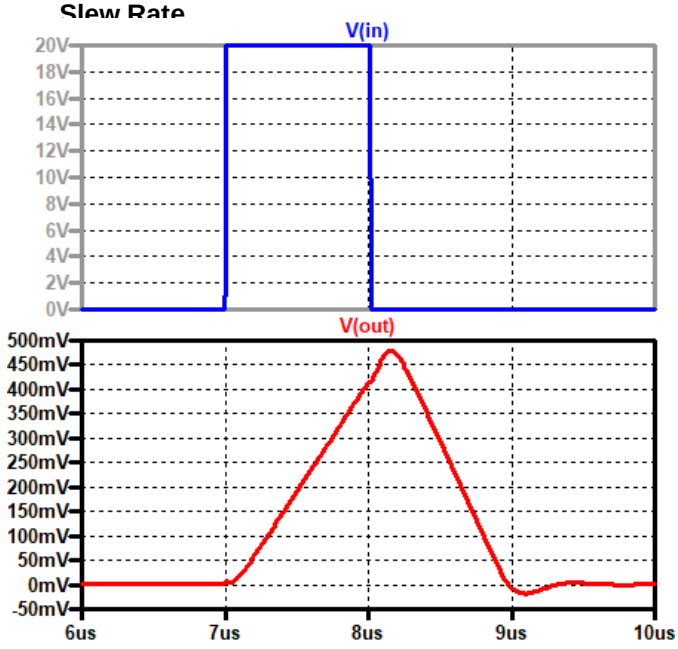
Referred to Data Sheet

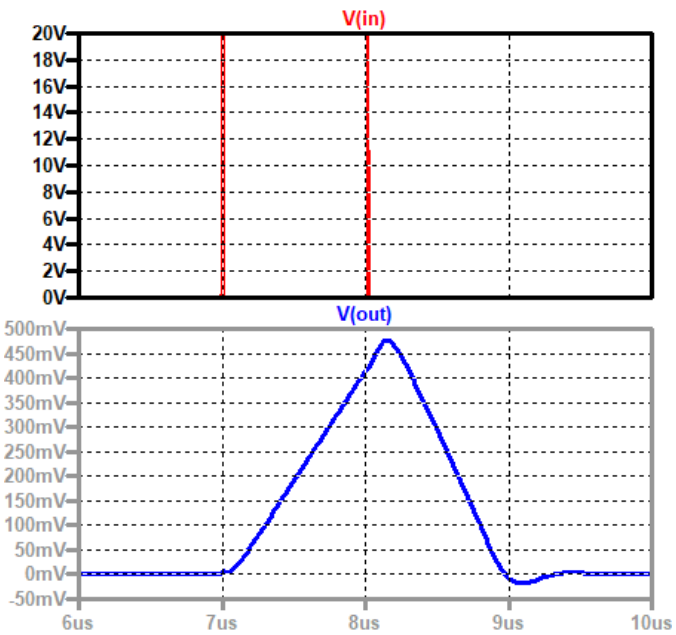




Simulation results are following.
Explanatory notes — : simulated

Slew Rate





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