

Device Modeling Report

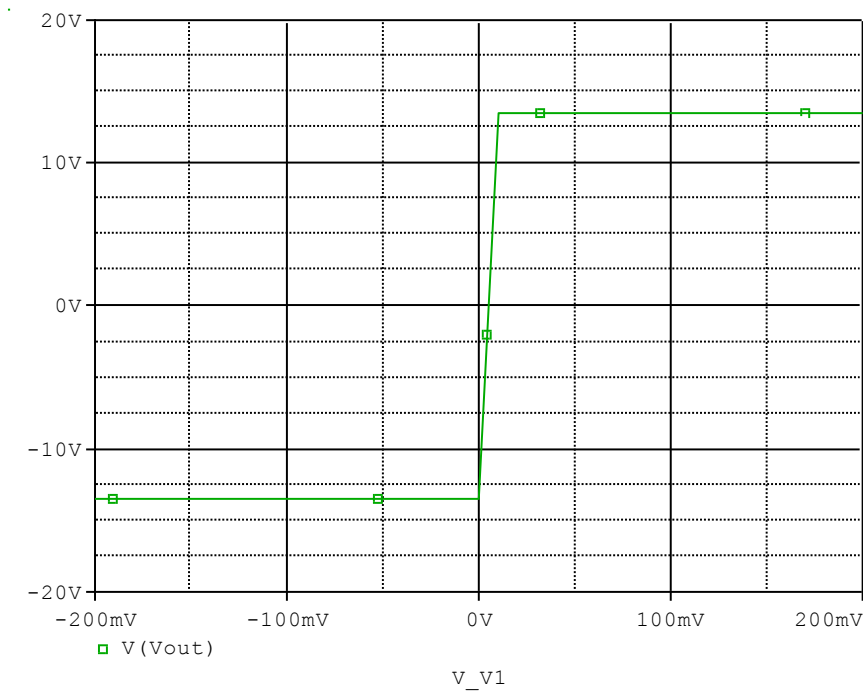
COMPONENTS: OPERATIONAL AMPLIFIER
PART NUMBER: uPC4072HA
MANUFACTURER: NEC



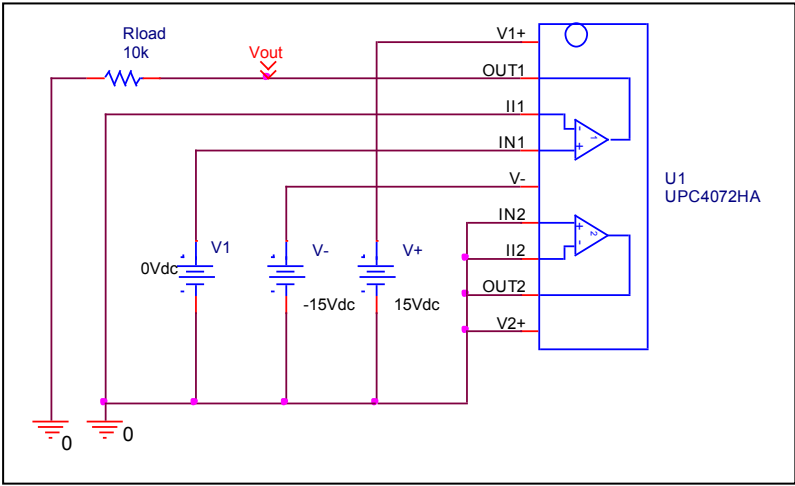
Bee Technologies Inc.

Output Voltage Swing

Simulation result



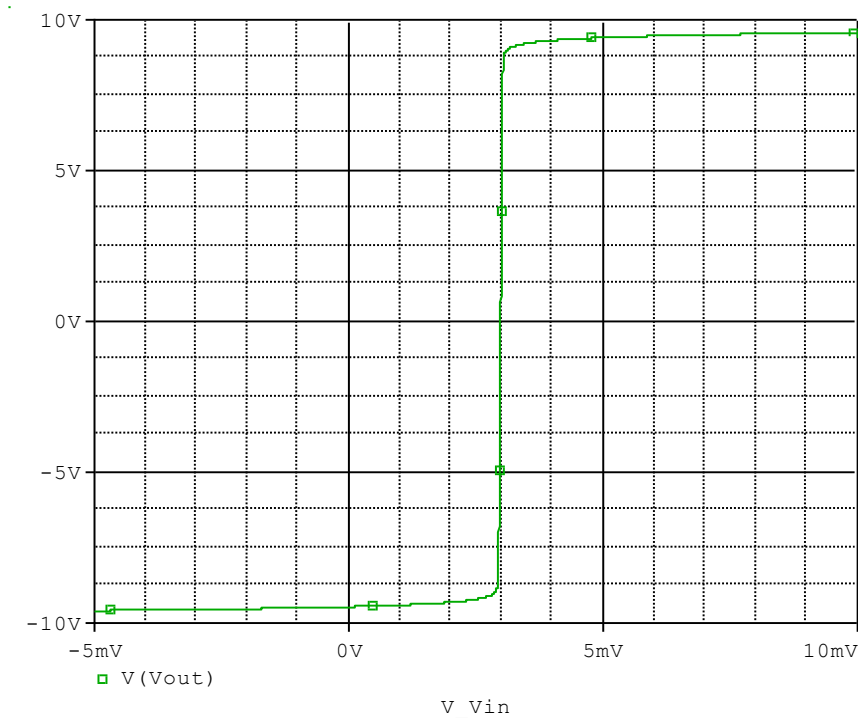
Evaluation circuit



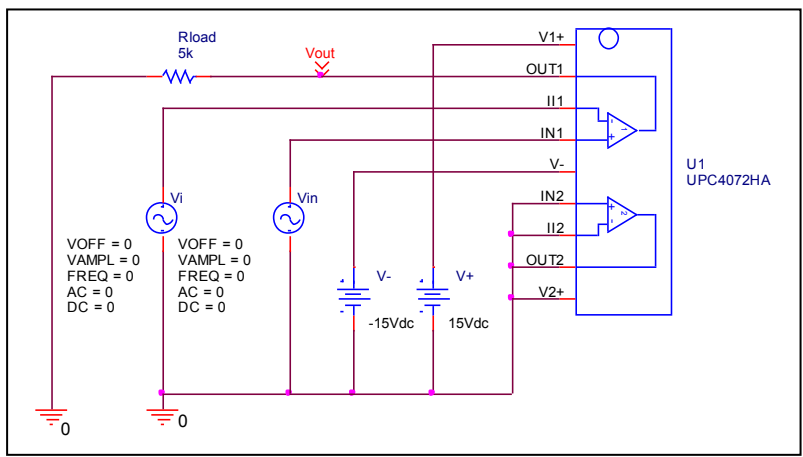
Output Voltage Swing	Measurement	Simulation	%Error
+ $V_{out}(V)$	+13.500	+13.481	-0.140
- $V_{out}(V)$	-13.500	-13.481	-0.140

Input Offset Voltage

Simulation result



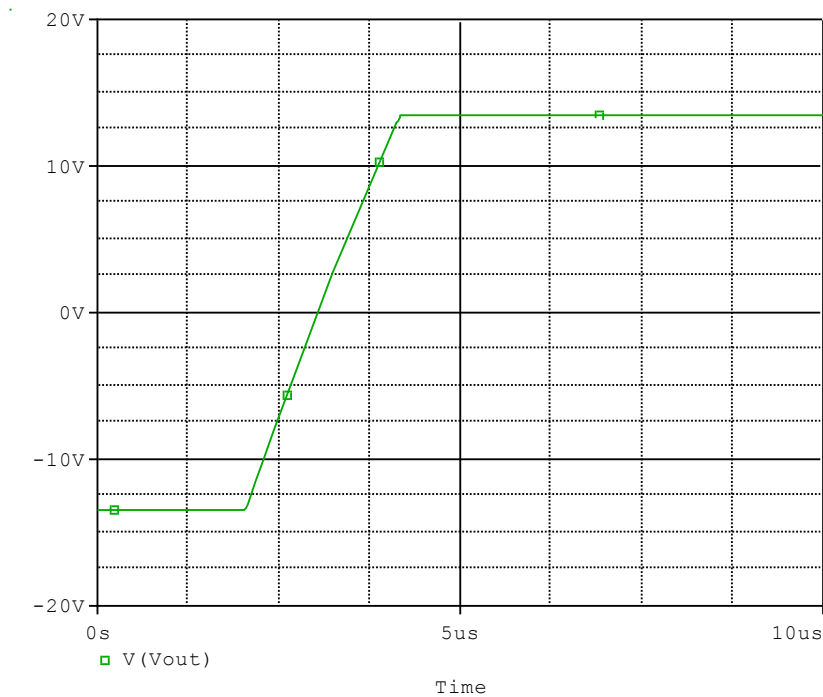
Evaluation circuit



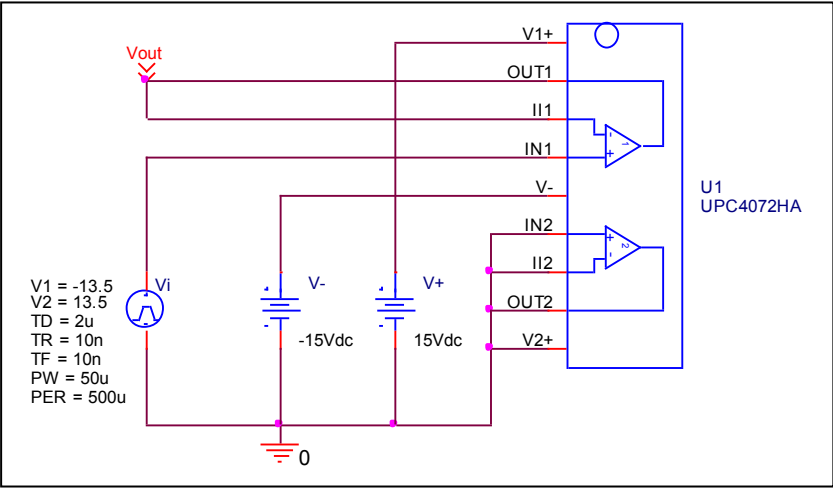
Vos	Measurement		Simulation		Error	
	3.000	mV	2.985	mV	-0.500	%

Slew Rate

Simulation result



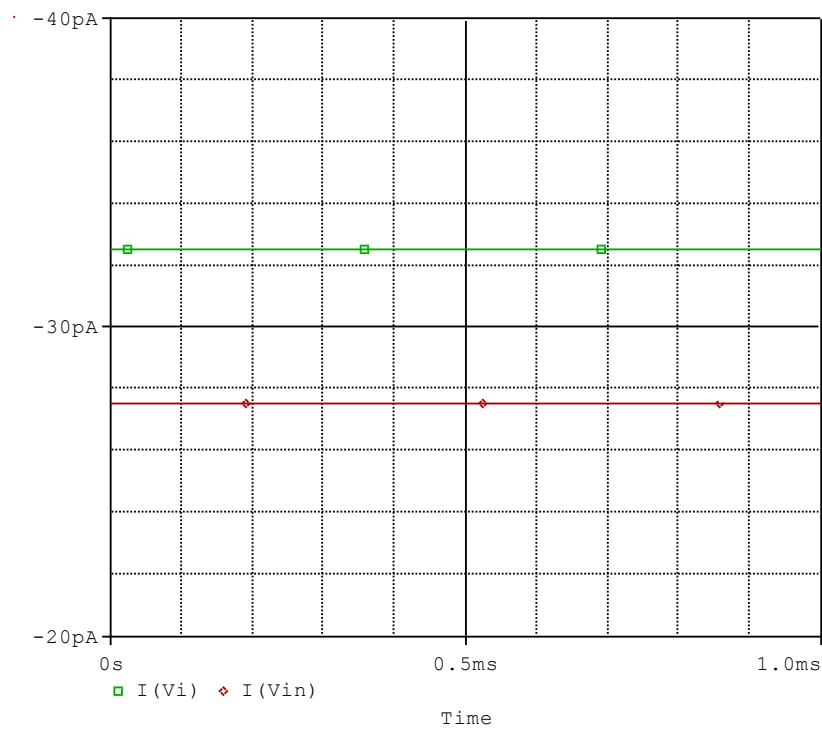
Evaluation circuit



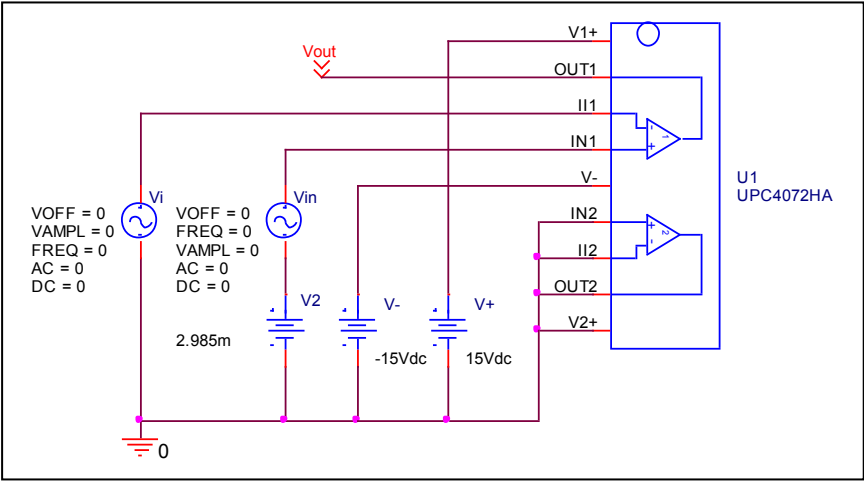
Slew Rate(v/us)	Measurement	Simulation	%Error
	13.000	12.665	-2.580

Input current Ib, Ibos

Simulation result



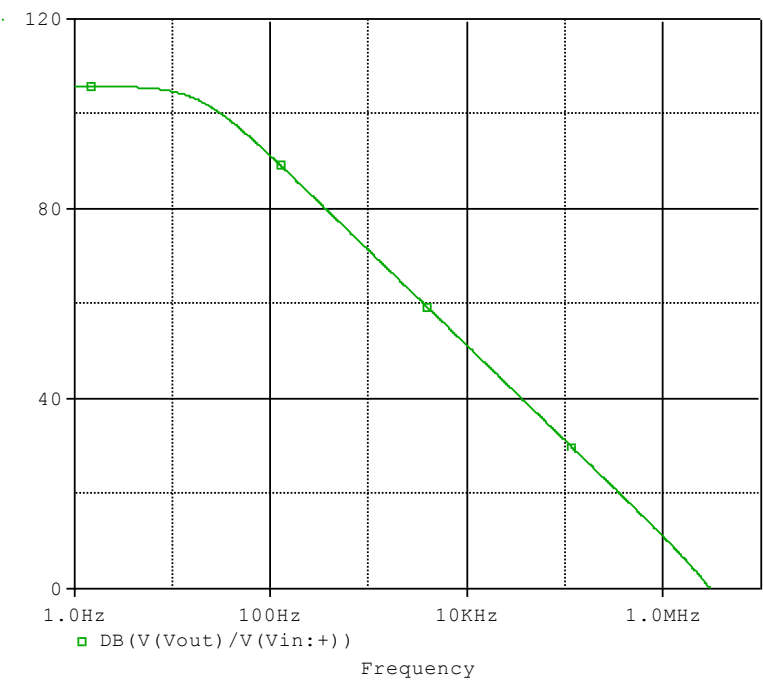
Evaluation circuit



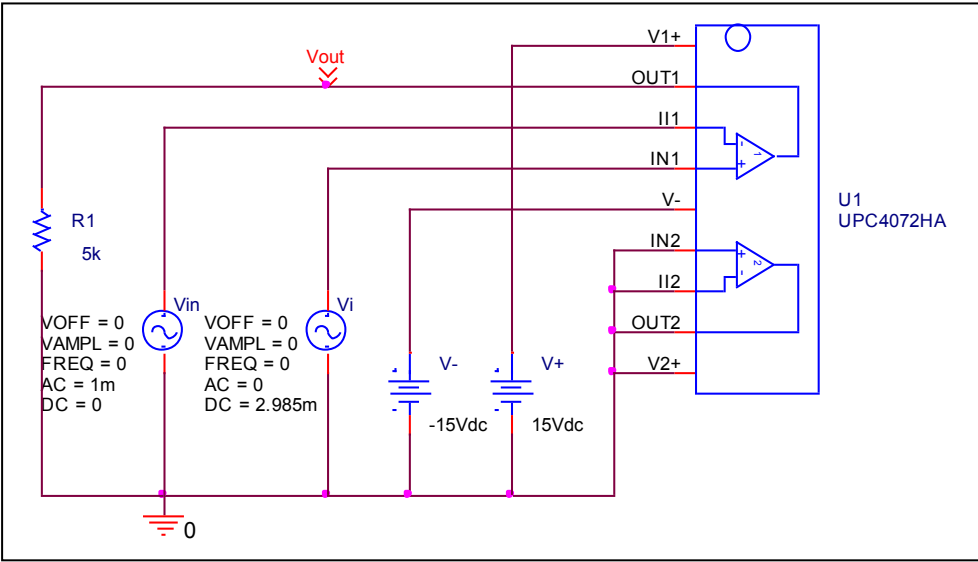
	Measurement	Simulation	%Error
Ib(nA)	30.000	30.036	0.120
Ibos(nA)	5.000	4.994	-0.120

Open Loop Voltage Gain vs. Frequency , Av-dc, f-0dB

Simulation result



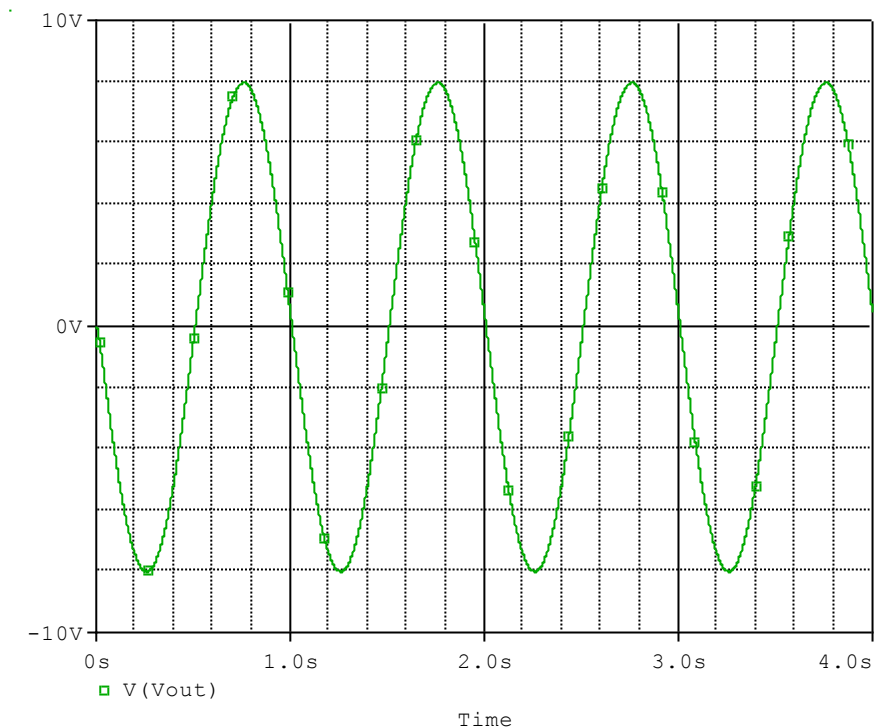
Evaluation circuit



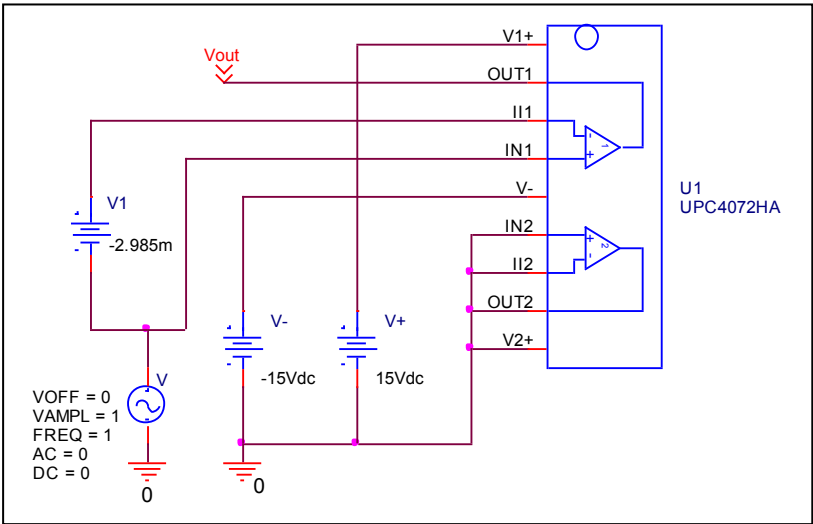
	Measurement	Simulation	%Error
f-0dB(MHz)	3.000	3.011	0.370
Av-dc(dB)	106.000	105.797	-0.190

Common-Mode Rejection Voltage gain

Simulation result



Evaluation circuit



$$CMRR=20*\text{LOG}(194917.1264/(13.978/2)) = 88.909 \text{ dB}$$

CMRR (dB)	Measurement	Simulation	%Error
	86.000	88.909	3.380