

Device Modeling Report

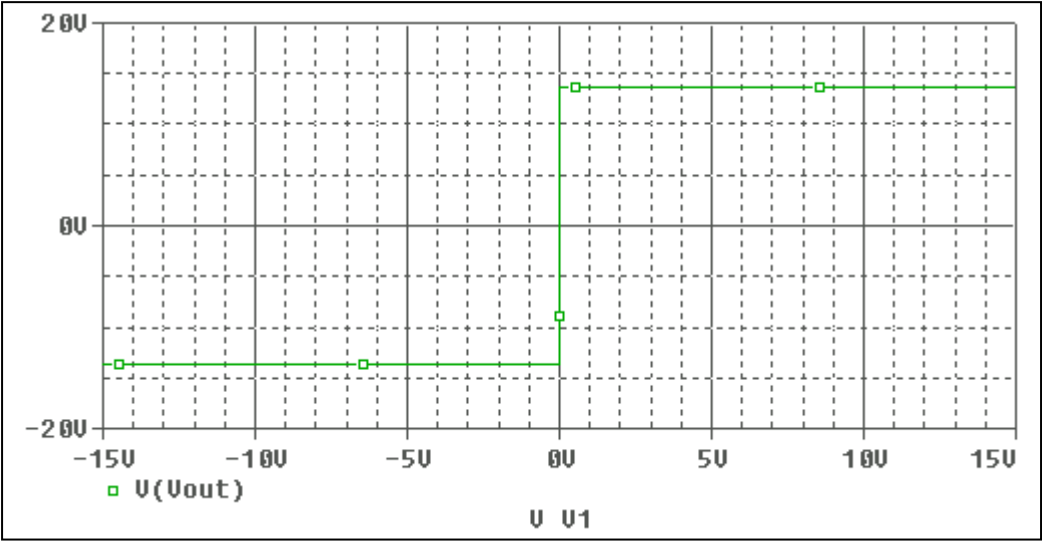
COMPONENTS:MOSFET: OPERATIONAL AMPLIFIER
PART NUMBER:NJM4741M
MANUFACTURER: NEW JAPAN RADIO CO.,LTD



Bee Technologies Inc.

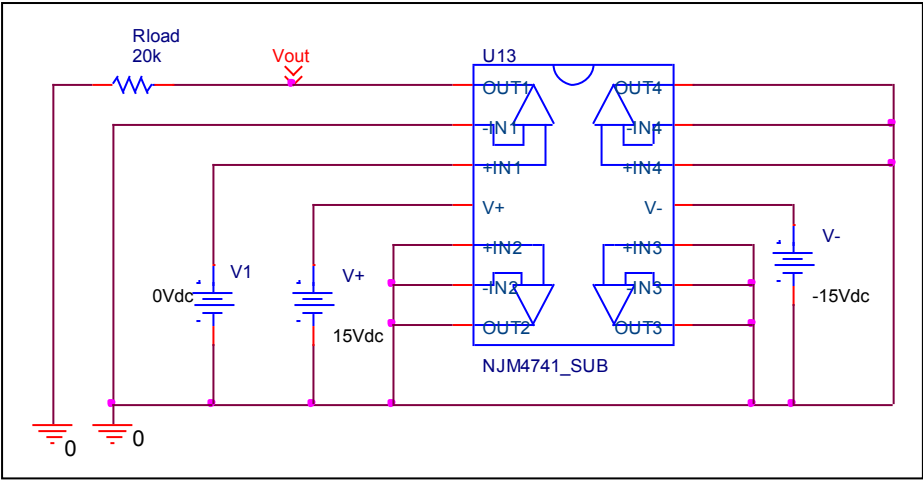
Output Voltage Swing, +Vout and -Vout

Simulation result



These simulation results are compared with $\pm V_{out}$

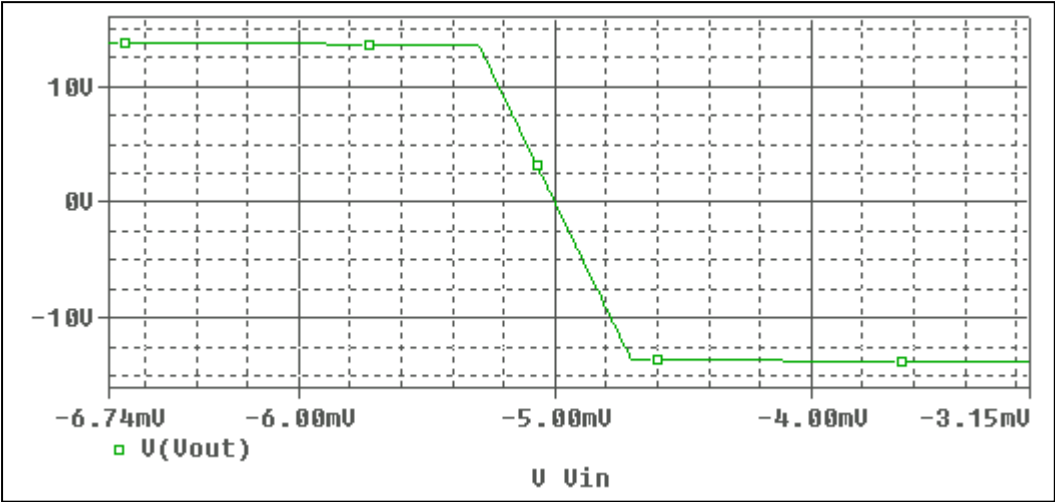
Evaluation circuit



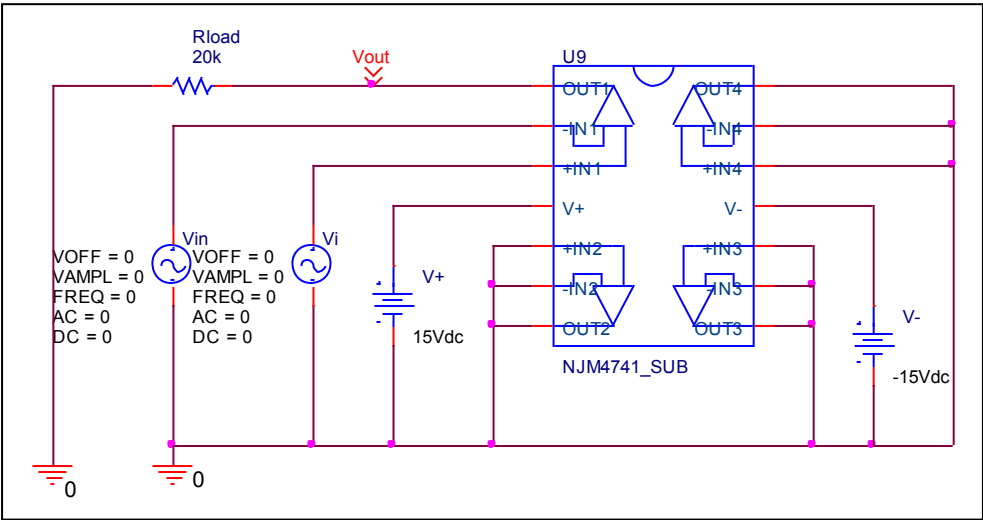
Output Voltage Swing	Data sheet	Simulation	%Error
+Vout(V)	+13.7	13.699	0.007
-Vout(V)	-13.7	-13.699	0.007

Input Offset Voltage

Simulation result



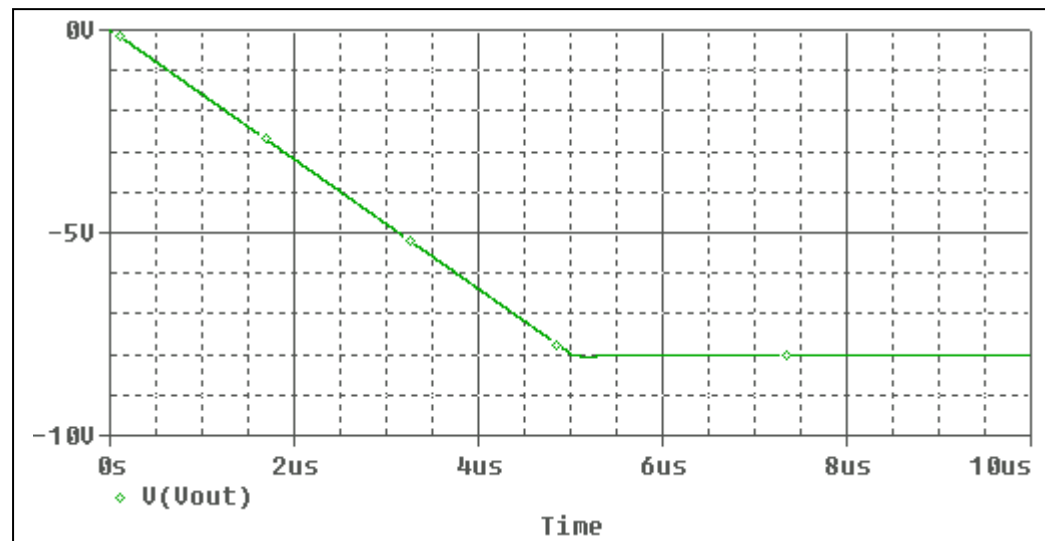
Evaluation circuit



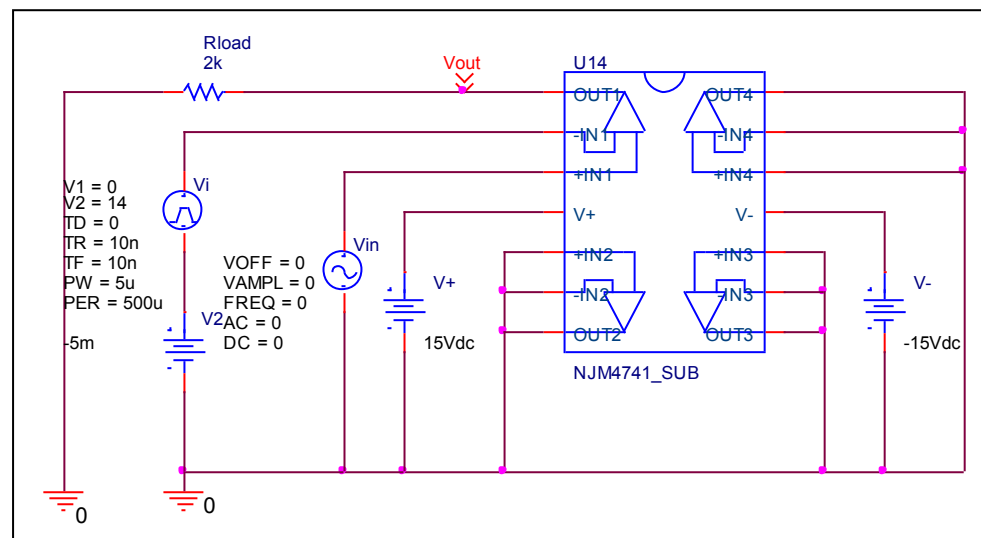
Vos	Measurement		Simulation		Error	
	5	mV	5	mV	0	%

Slew Rate, +SR, -SR

Simulation result



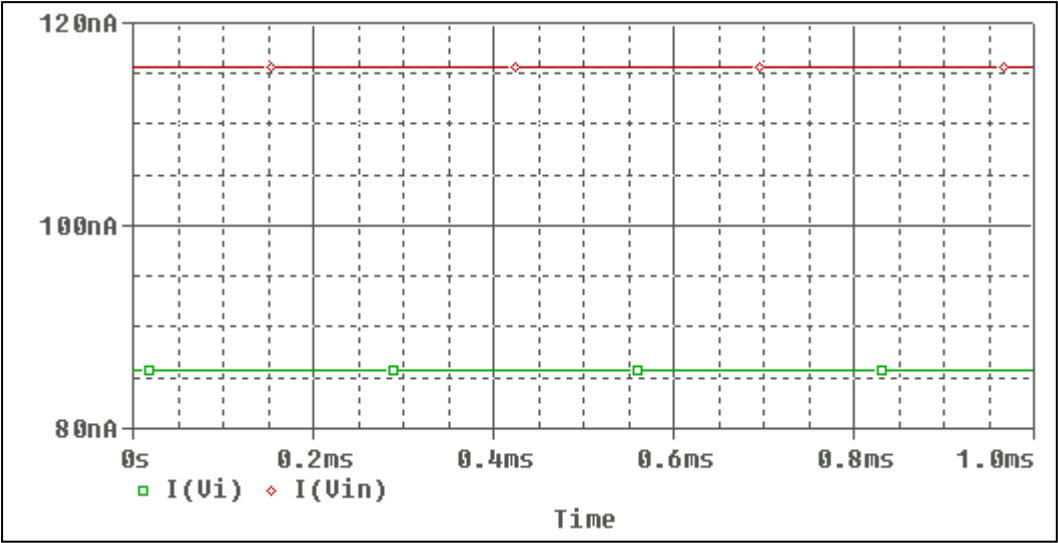
Evaluation circuit



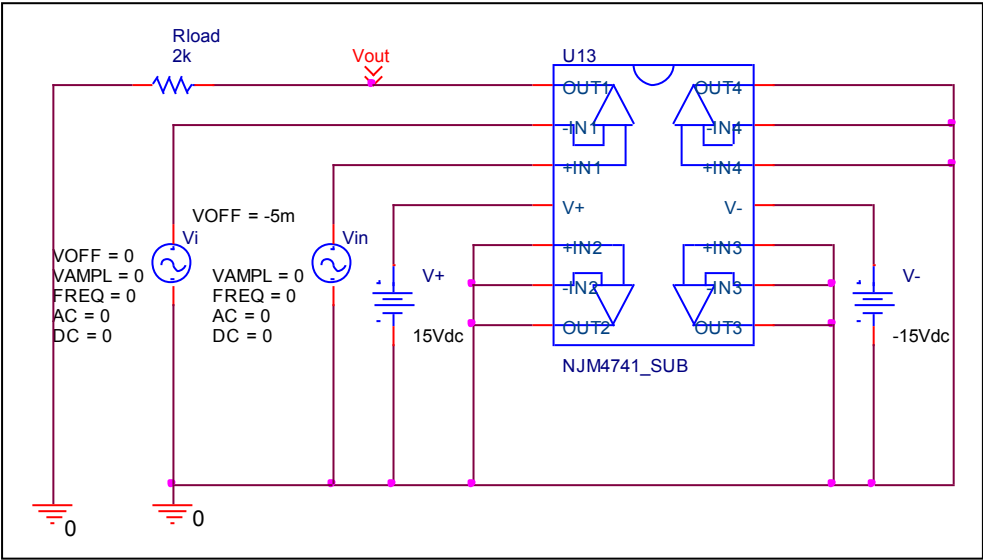
Slew Rate(v/us)	Data sheet	Simulation	%Error
	1.6V/us	1.58V/us	1.25

Input current Ib, Ibos

Simulation result



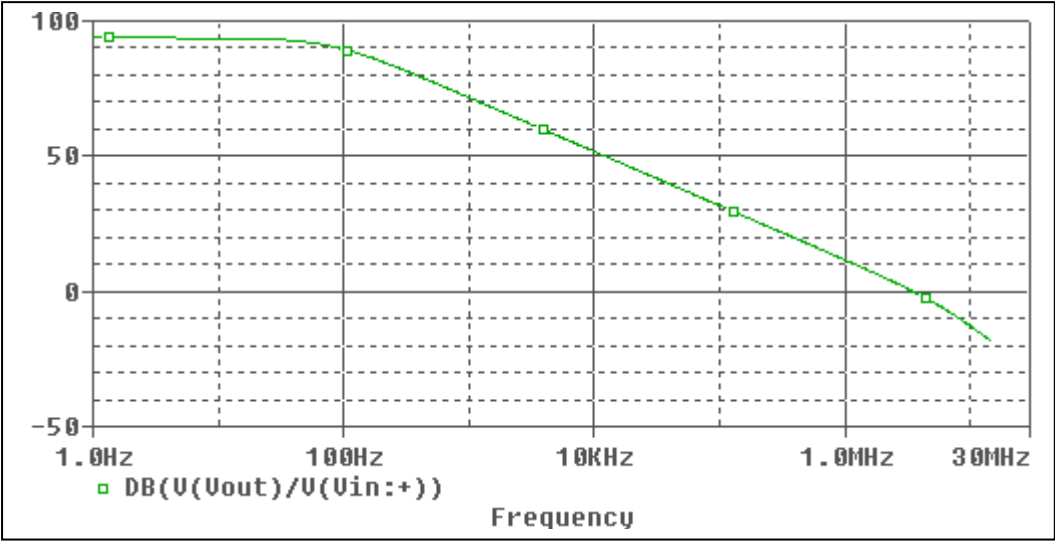
Evaluation circuit



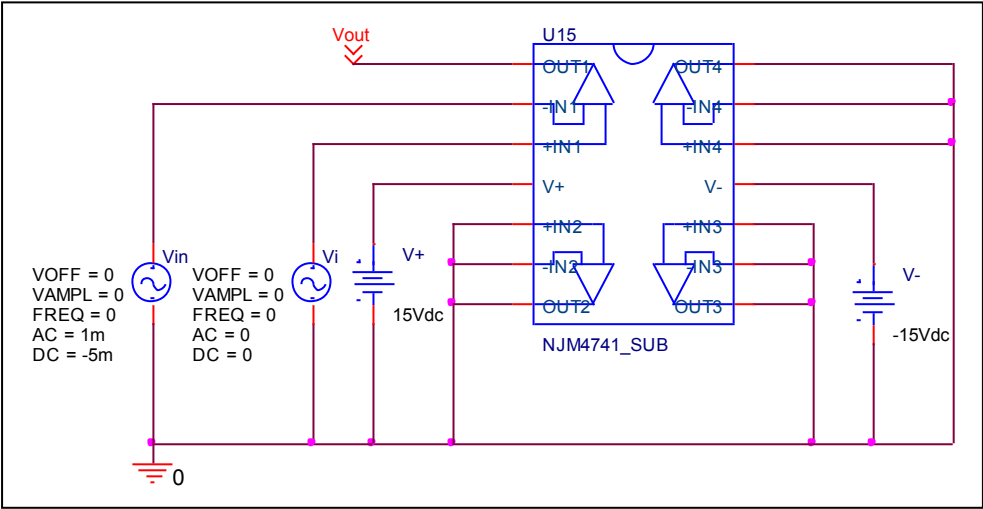
	Data sheet	Simulation	%Error
Ib(nA)	100	100.6	0.6
Ibos(nA)	30	29.87	0.433

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

Simulation result



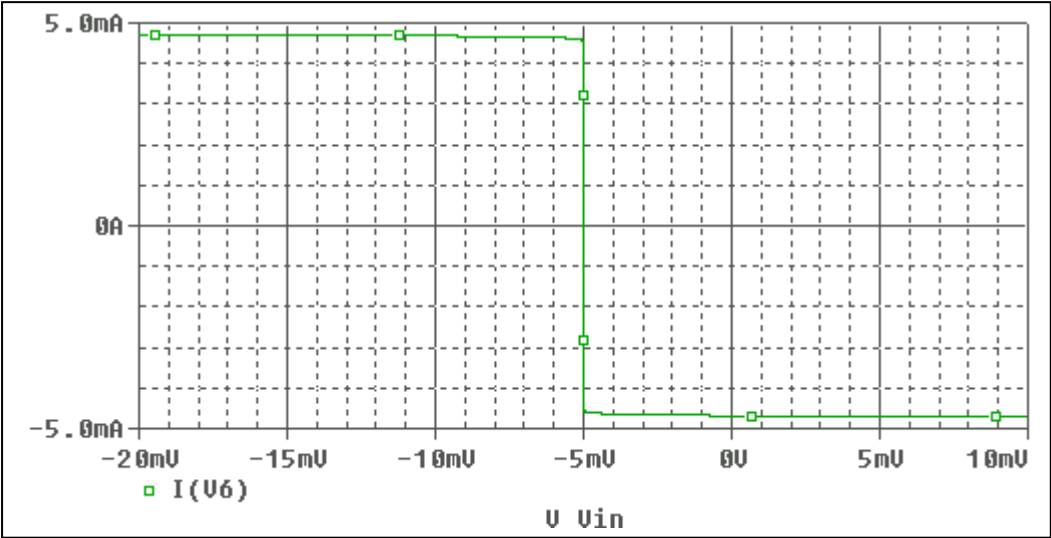
Evaluation circuit



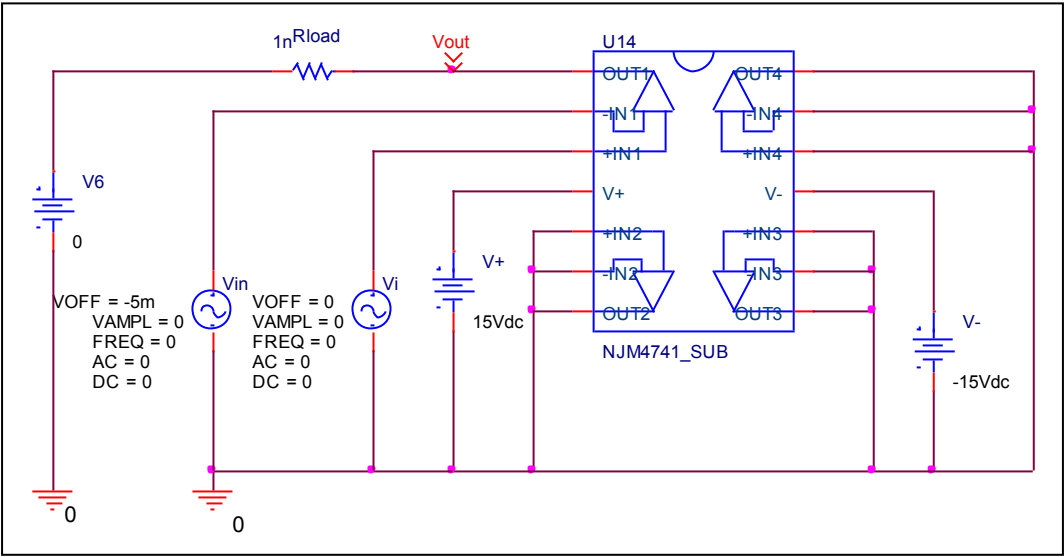
	Data sheet	Simulation	%Error
f-0dB(MHz)	3.5	3.487	0.371
Av-dc(dB)	94	93.7	0.319

Output Short Circuit Current - Ios

Simulation result



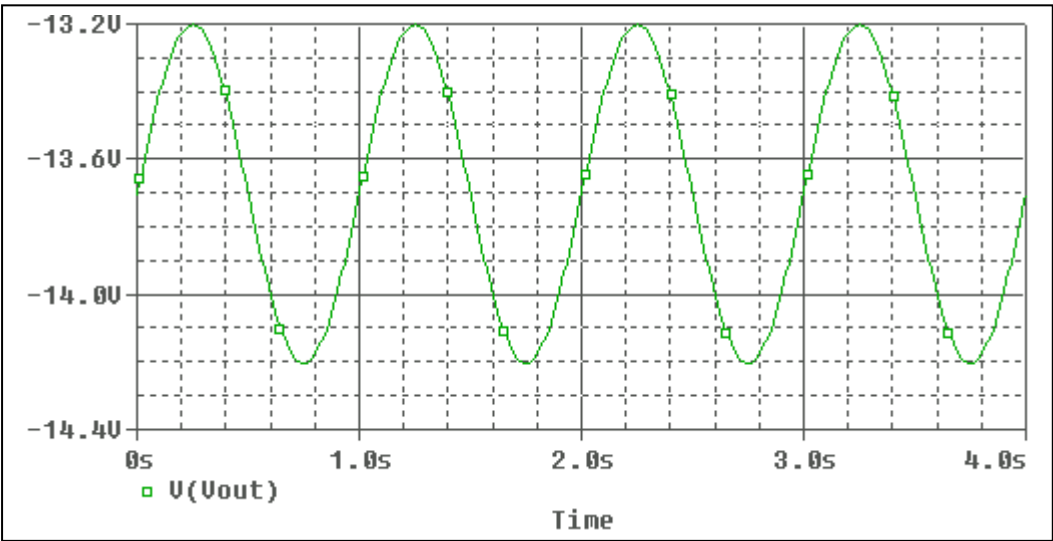
Evaluation circuit



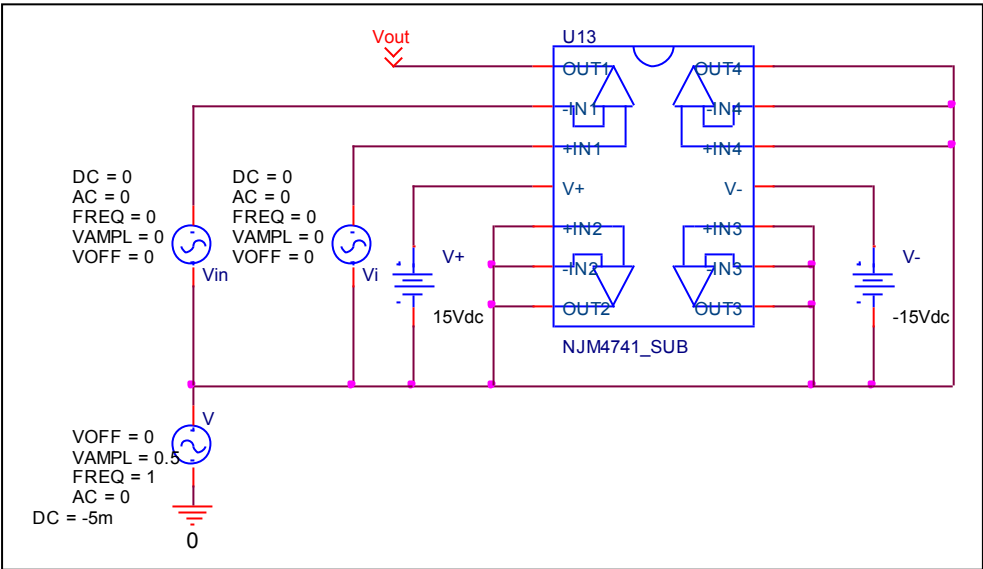
Short Circuit Current	Data sheet	Simulation	%Error
	4.7mA	4.71mA	0.212

Common-Mode Rejection Voltage gain

Simulation result



Evaluation circuit



Common mode gain=0.050118/1

Common Mode Reject Ratio=48417/0.050118=966060

CMRR	Data sheet	Simulation	%Error
	1000000	966060	3.394