

Device Modeling Report

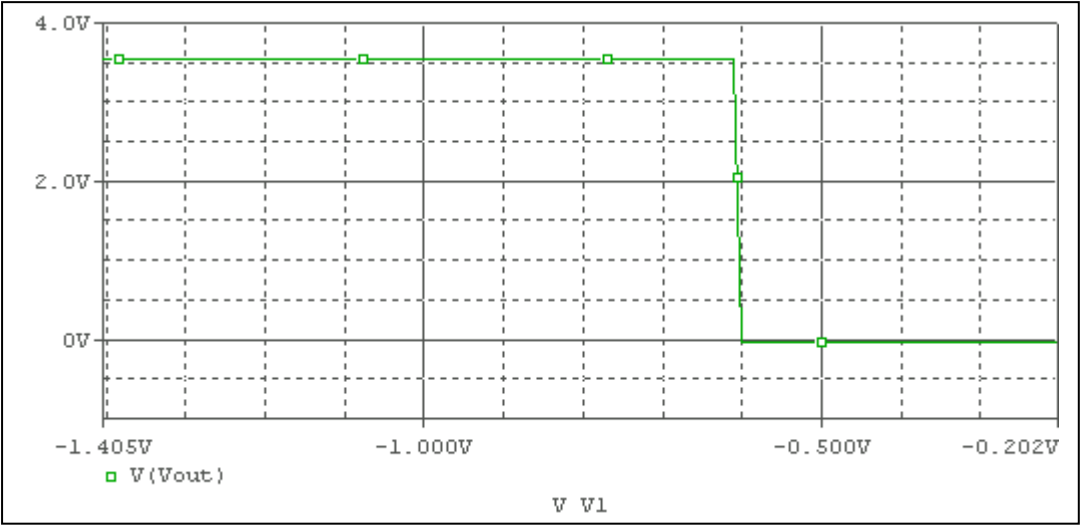
COMPONENTS:MOSFET: OPERATIONAL AMPLIFIER
PART NUMBER:NJM2904M
MANUFACTURER: NEW JAPAN RADIO CO.,LTD



Bee Technologies Inc.

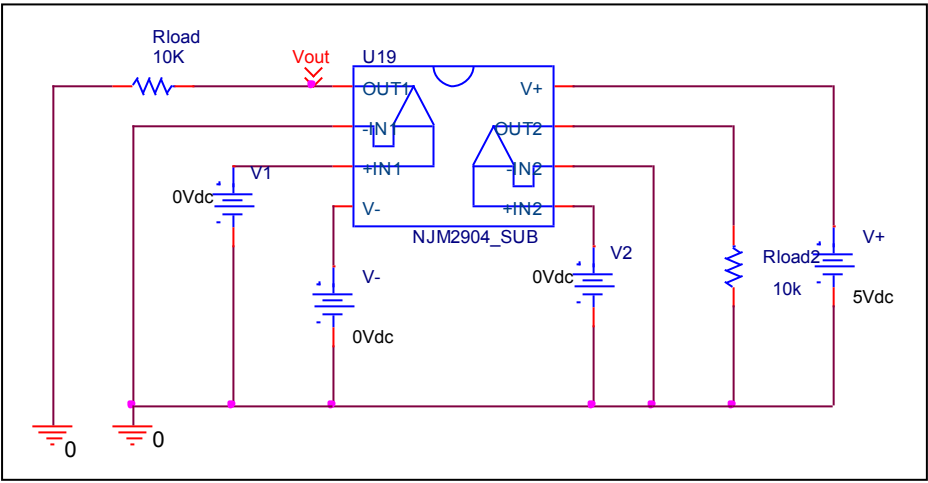
Output Voltage Swing, +Vout and –Vout

Simulation result



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

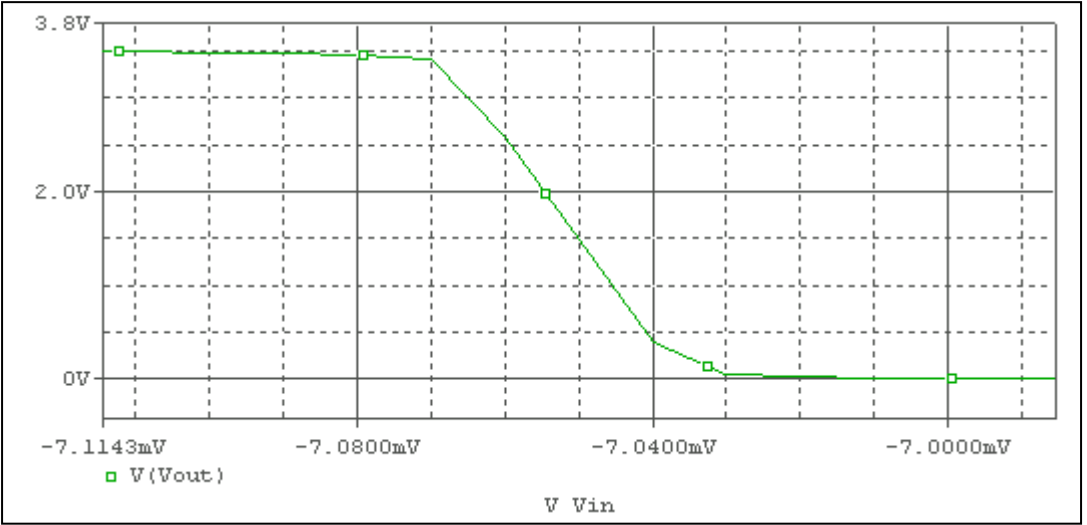
Evaluation circuit



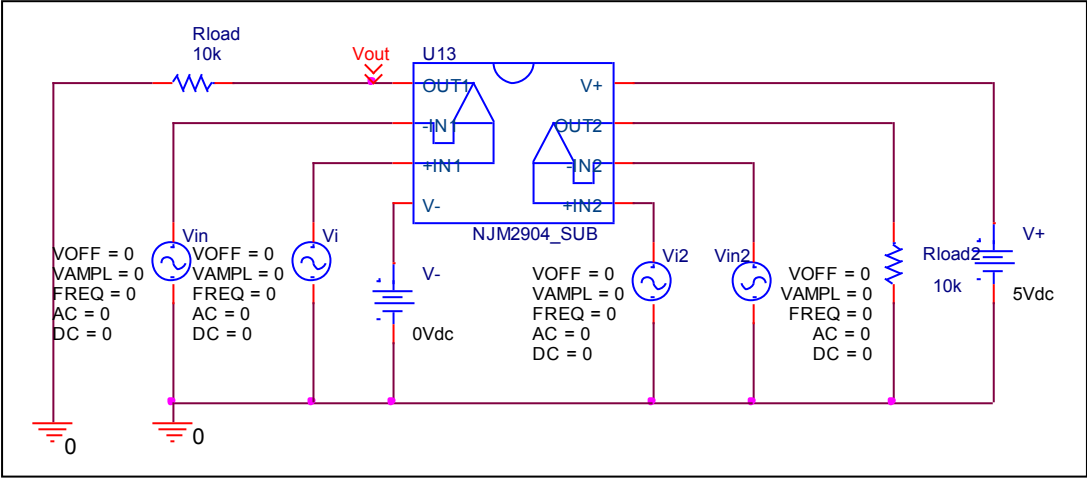
Output Voltage Swing	Data sheet	Simulation	%Error
+Vout(V)	+3.5	3.53	0.857
-Vout(V)	0	0	0

Input Offset Voltage

Simulation result



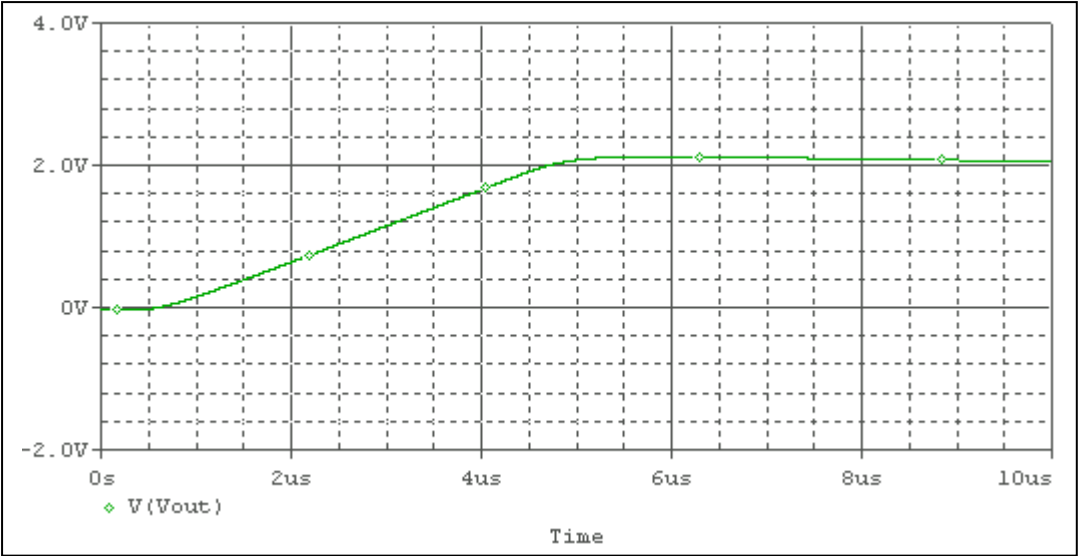
Evaluation circuit



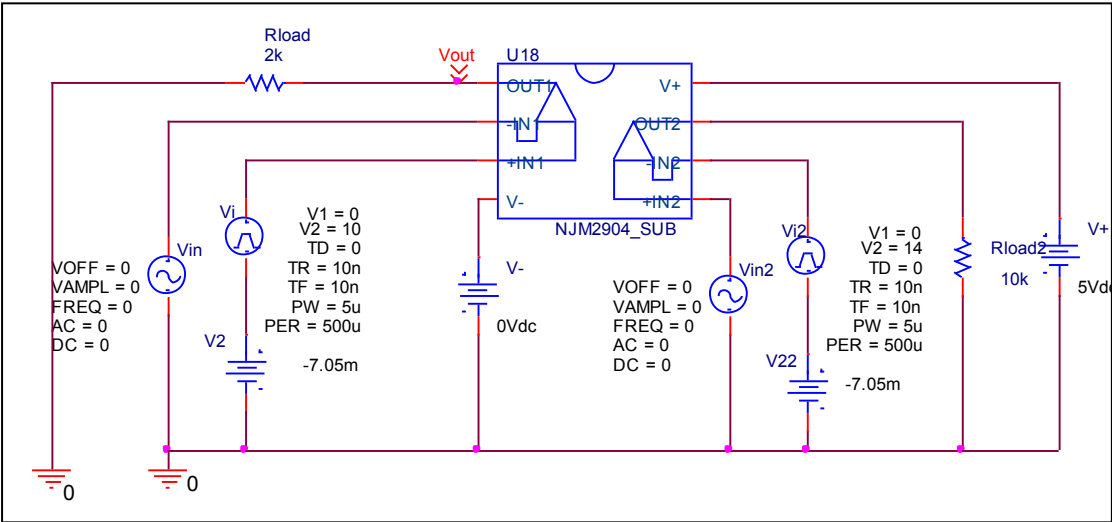
Vos	Measurement		Simulation		Error	
	7	mV	7.05	mV	0.714	%

Slew Rate, +SR, -SR

Simulation result



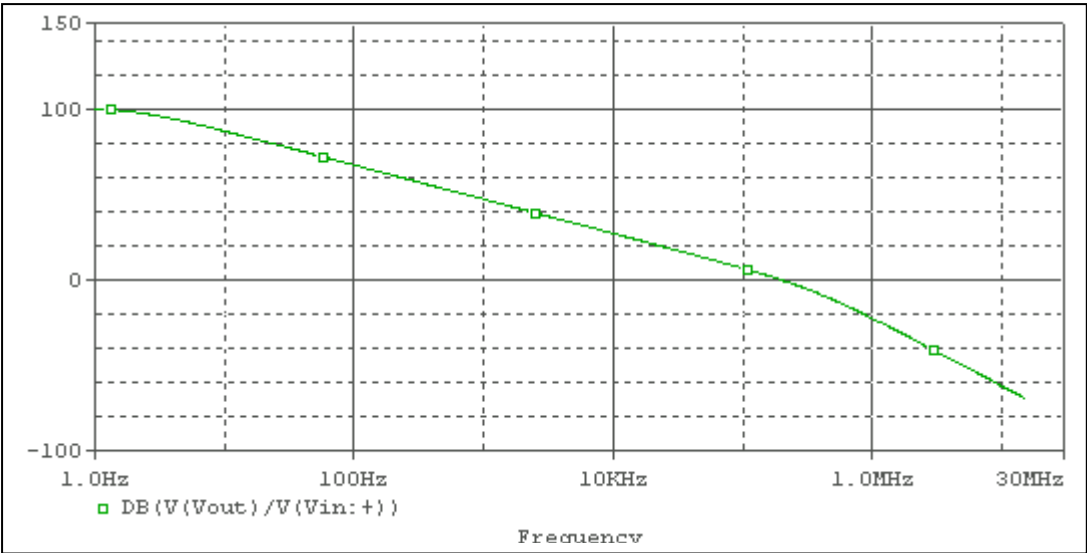
Evaluation circuit



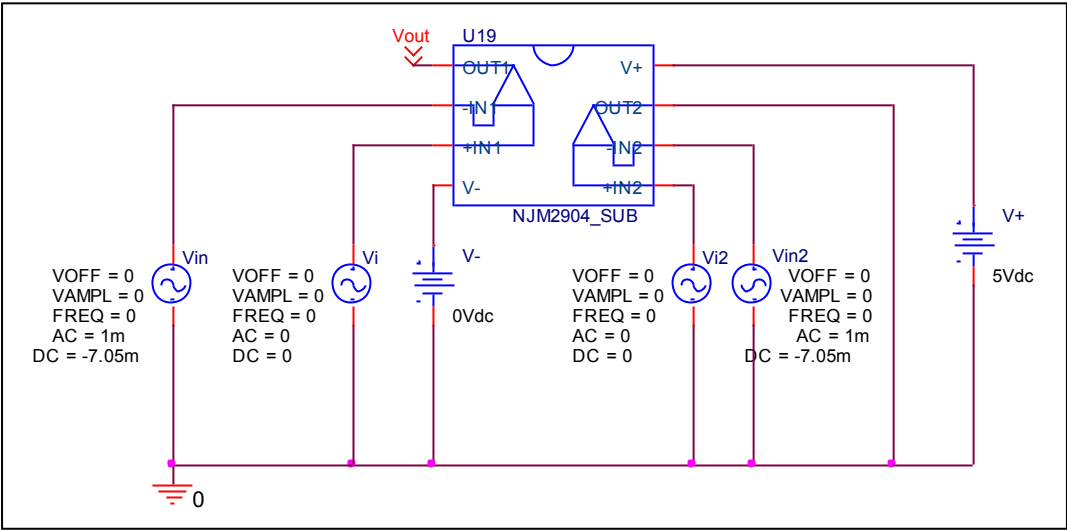
Slew Rate(v/us)	Data sheet	Simulation	%Error
	0.5V/us	0.486V/us	2.8

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

Simulation result



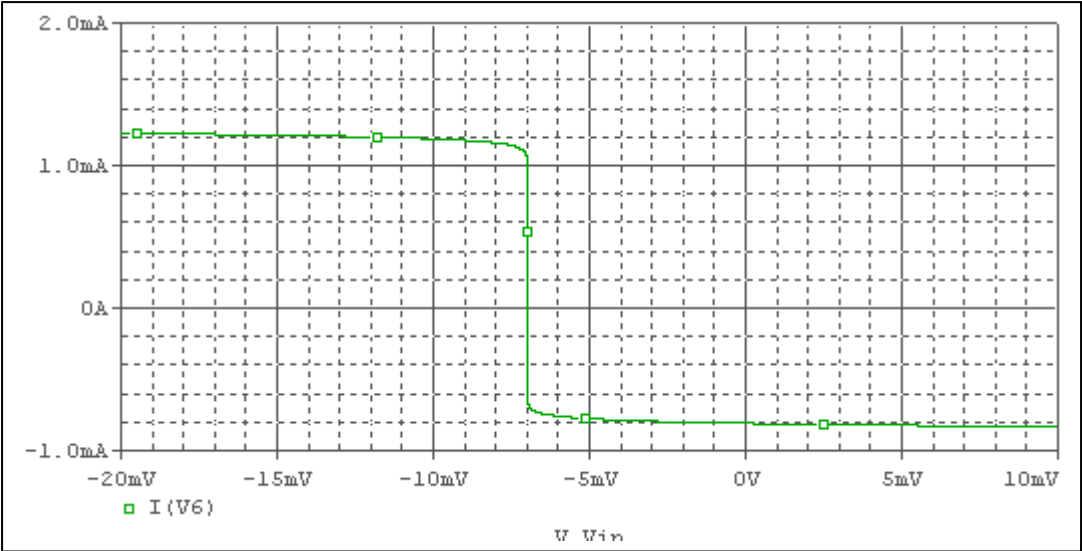
Evaluation circuit



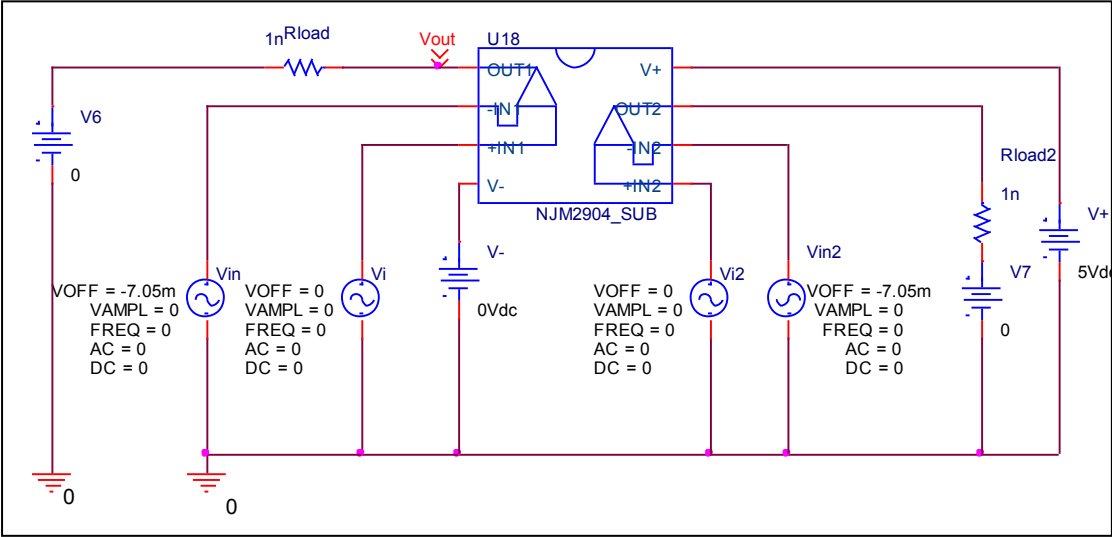
	Data sheet	Simulation	%Error
f-0dB(MHz)	0.2	0.195	2.5
Av-dc(dB)	100	99.917	0.083

Output Short Circuit Current - Ios

Simulation result



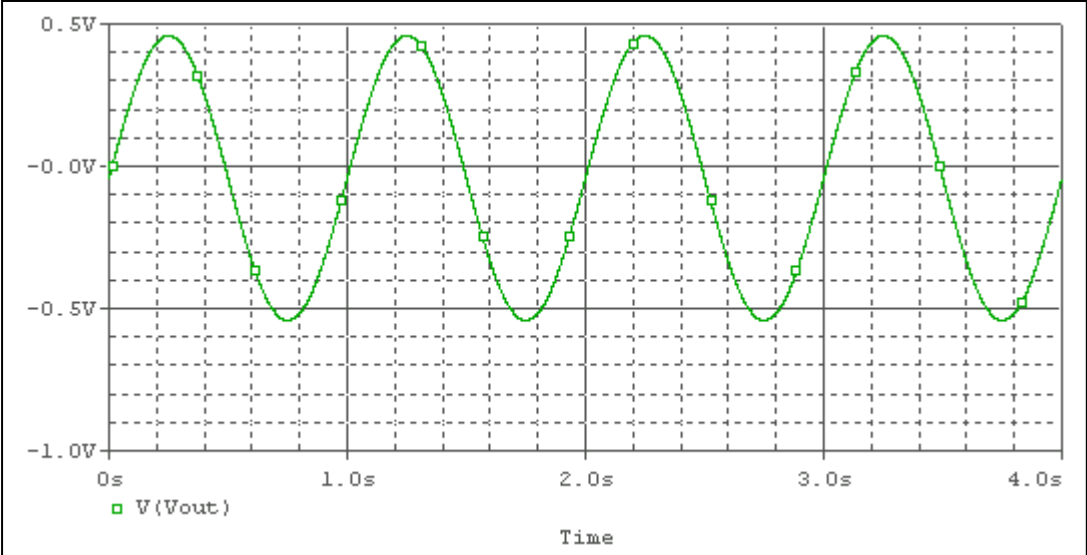
Evaluation circuit



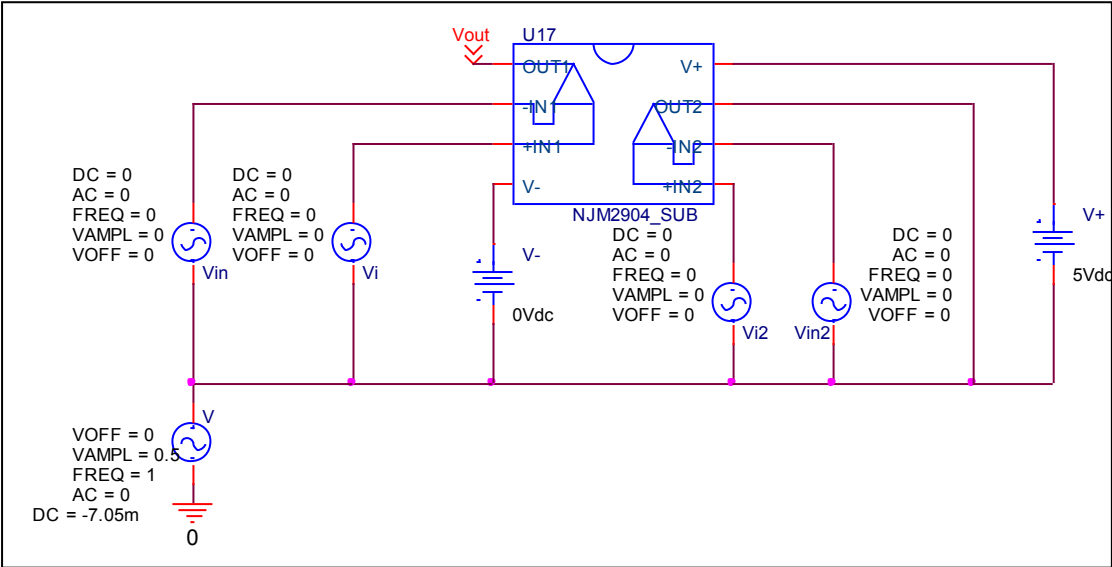
Short Circuit Current	Data sheet	Simulation	%Error
	1.2mA	1.225mA	2.083

Common-Mode Rejection Voltage gain

Simulation result



Evaluation circuit



Common mode gain=5.623/1
Common Mode Reject Ratio=99048/5.623=17614

CMRR	Data sheet	Simulation	%Error
	17782	17614	0.944