

Device Modeling Report

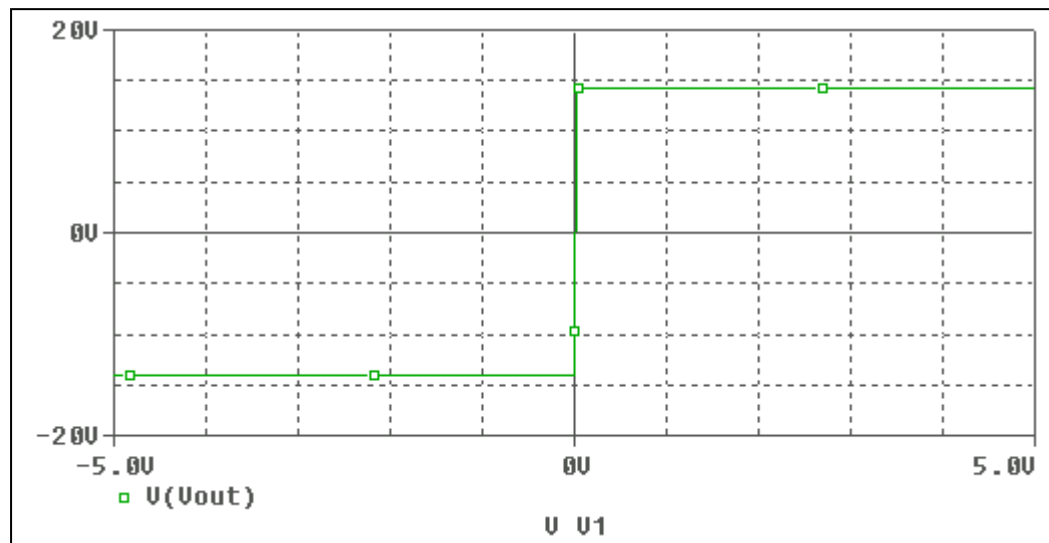
COMPONENTS: OPERATIONAL AMPLIFIER
PART NUMBER: NJM064M
MANUFACTURER: NEW JAPAN RADIO CO.,LTD



Bee Technologies Inc.

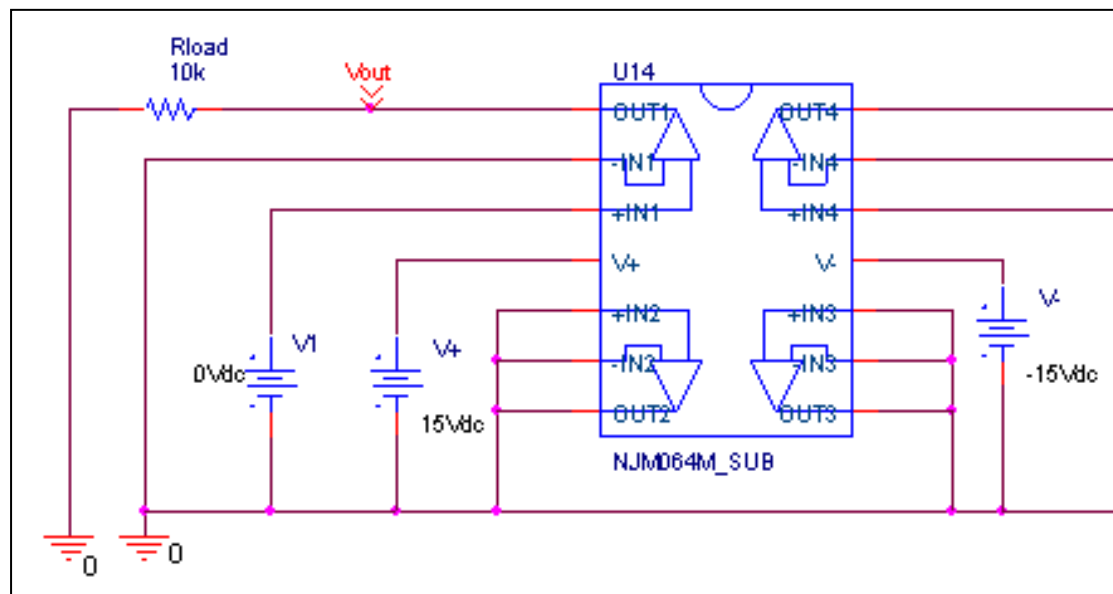
Output Voltage Swing, +Vout and -Vout

Simulation result



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

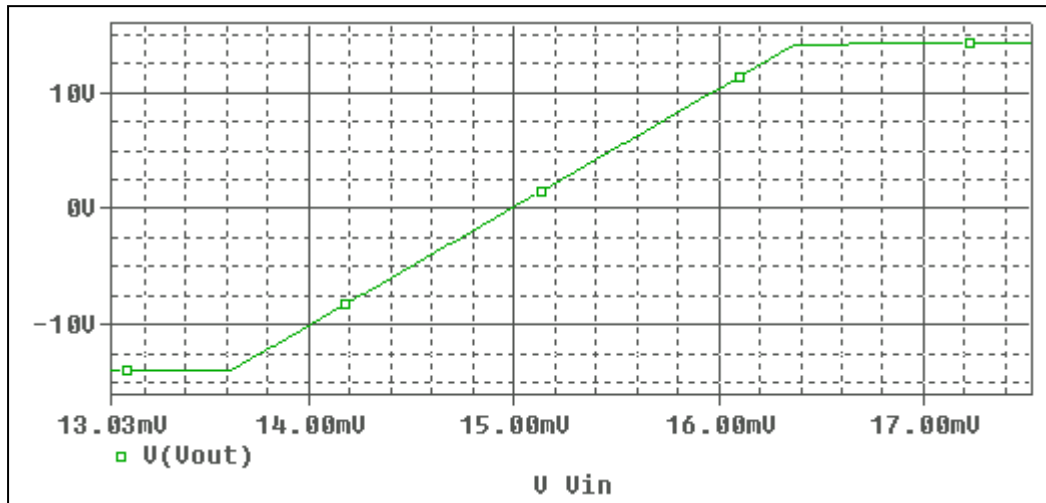
Evaluation circuit



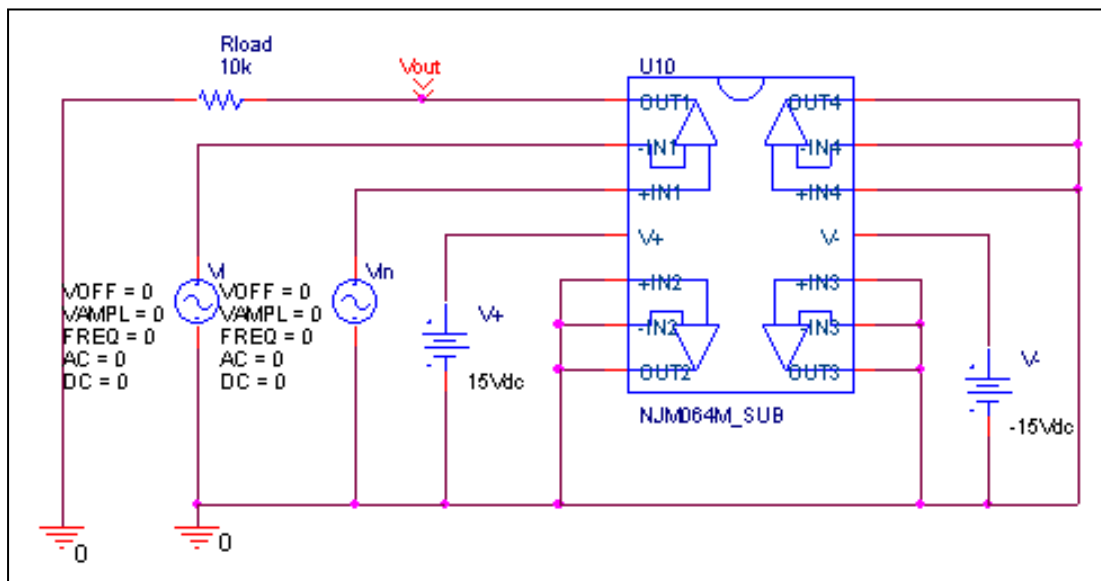
Output Voltage Swing	Data sheet	Simulation	%Error
+Vout(V)	+14.2	+14.29	0.633
-Vout(V)	-14	-14.09	0.642

Input Offset Voltage

Simulation result



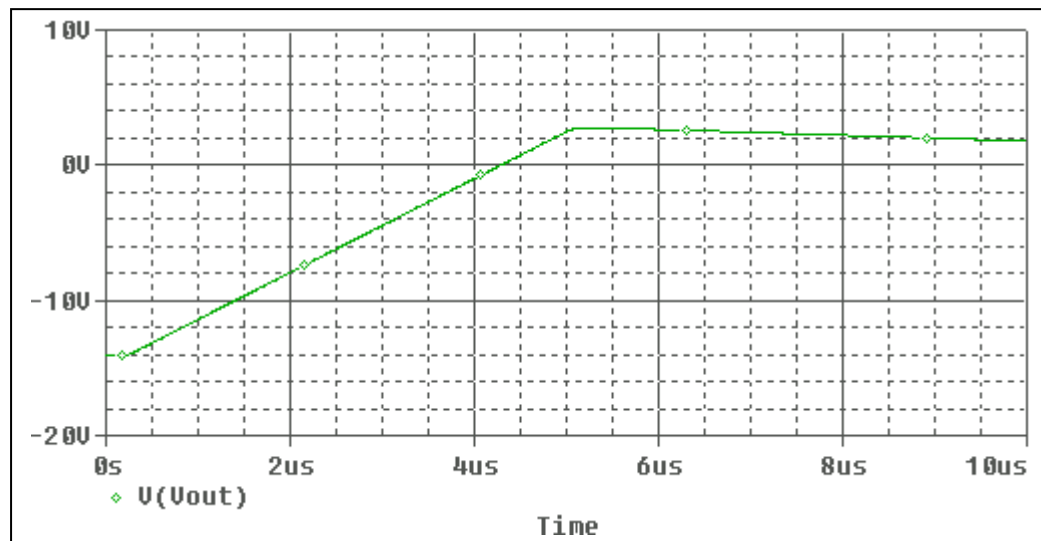
Evaluation circuit



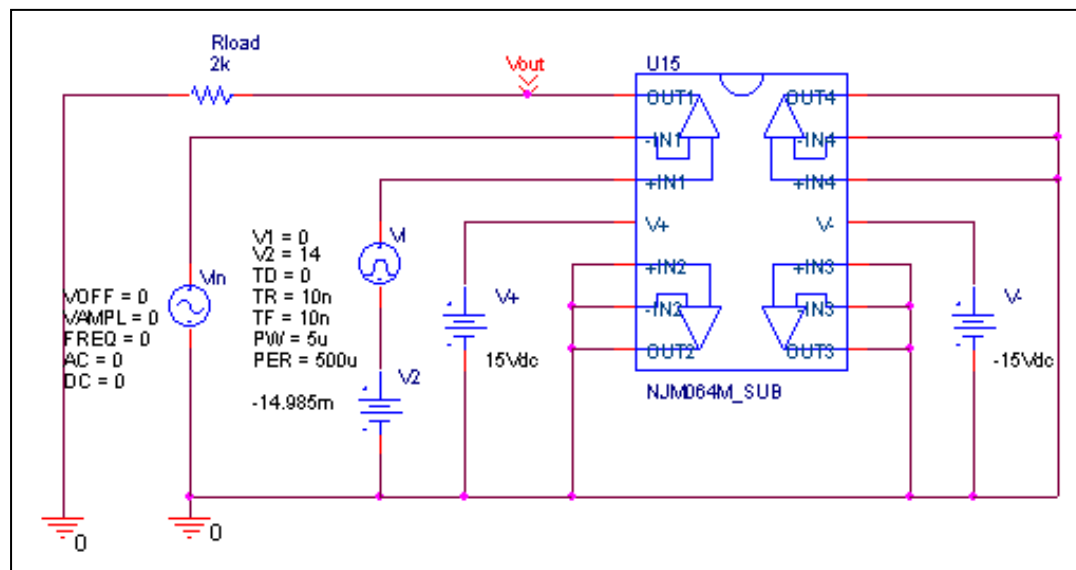
Vos	Measurement		Simulation		Error	
	15	mV	14.985	mV	0.1	%

Slew Rate, +SR, -SR

Simulation result



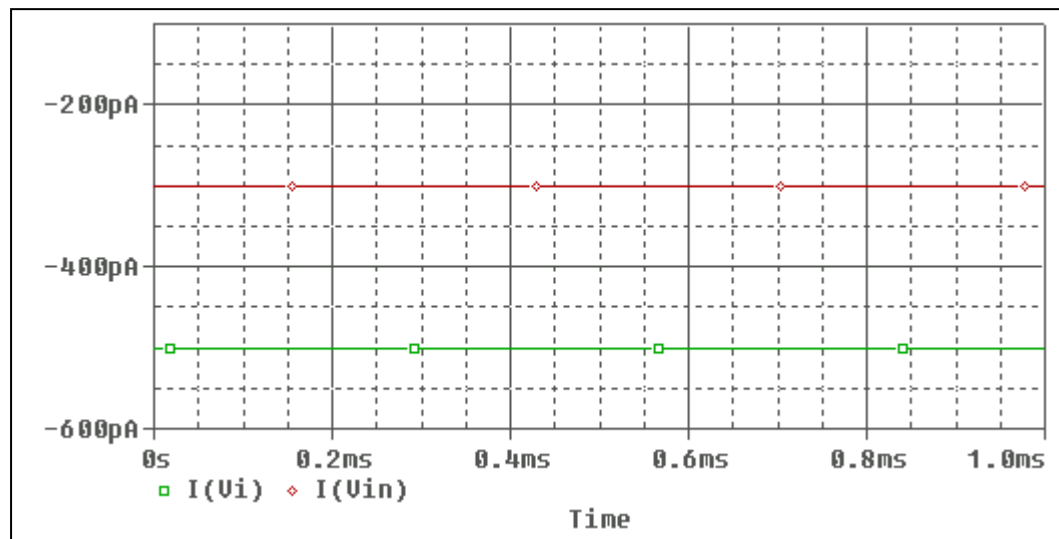
Evaluation circuit



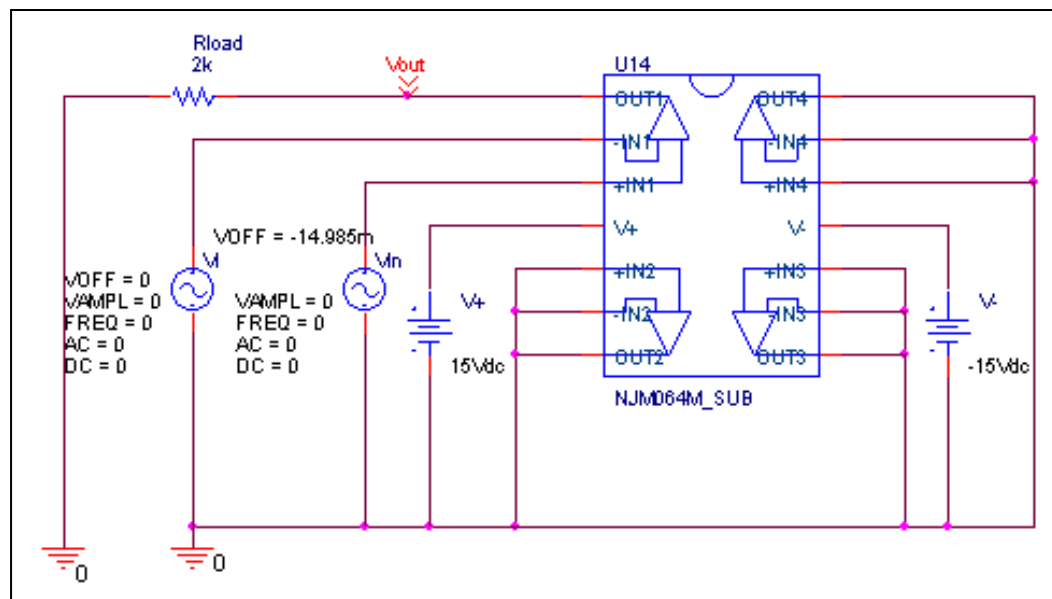
Slew Rate(v/us)	Data sheet	Simulation	%Error
		3.5V/us	3.475V/us

Input current I_b , I_{bos}

Simulation result



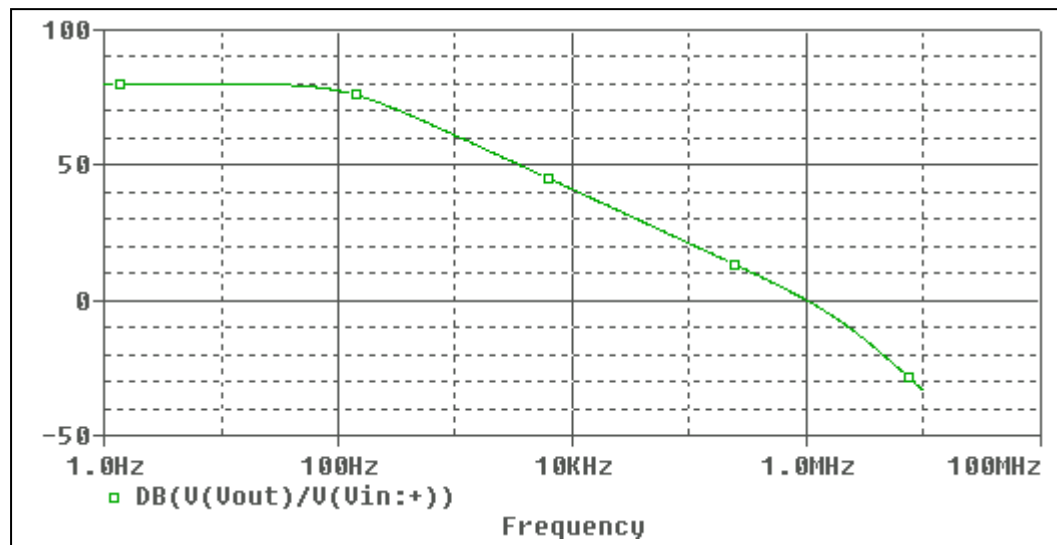
Evaluation circuit



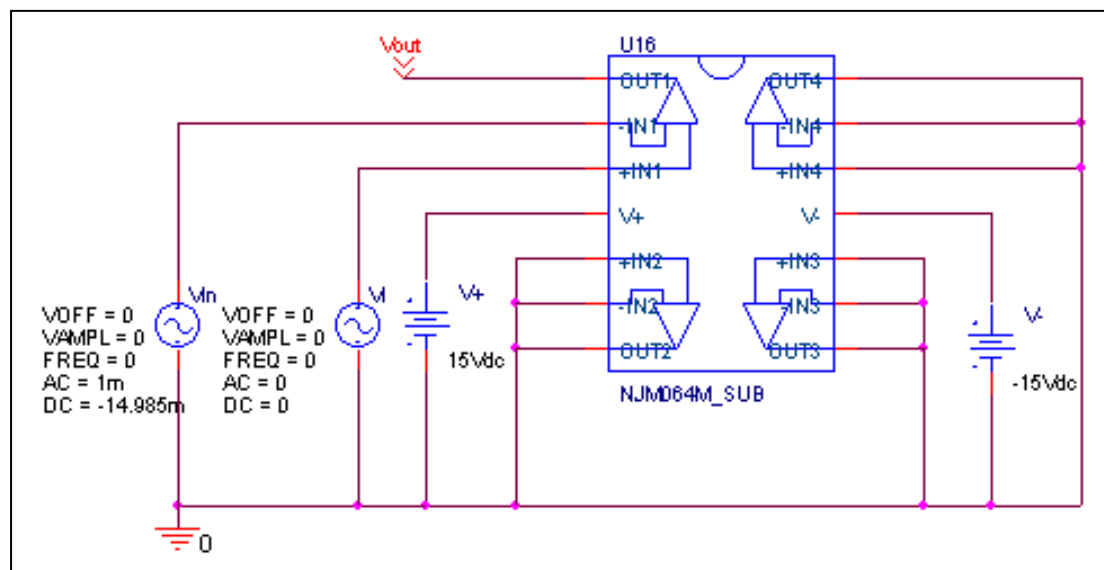
	Data sheet	Simulation	%Error
$I_b(\text{pA})$	400	400.15	0.037
$I_{bos}(\text{pA})$	200	200.06	0.03

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

Simulation result



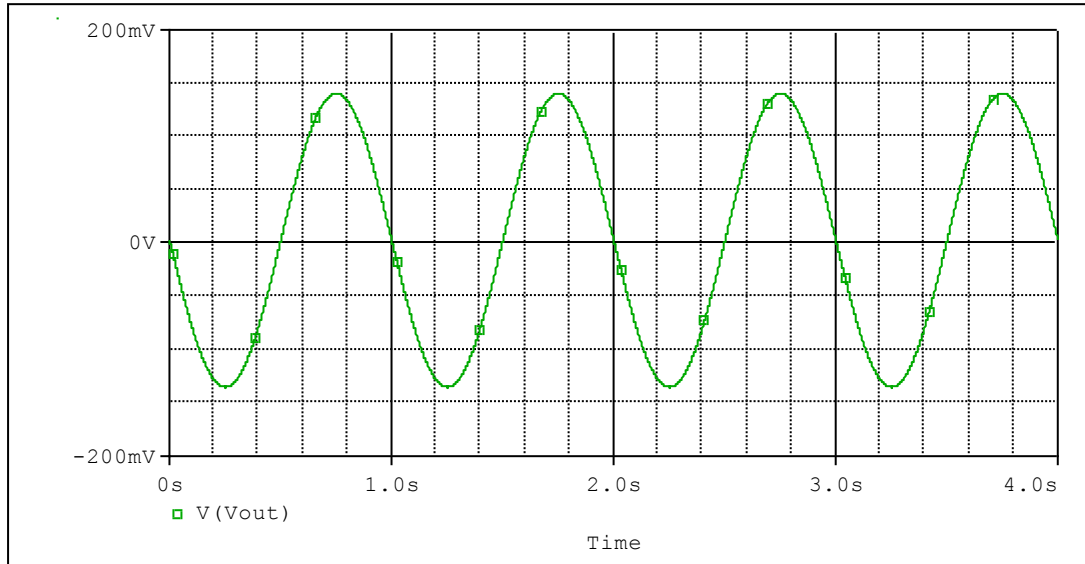
Evaluation circuit



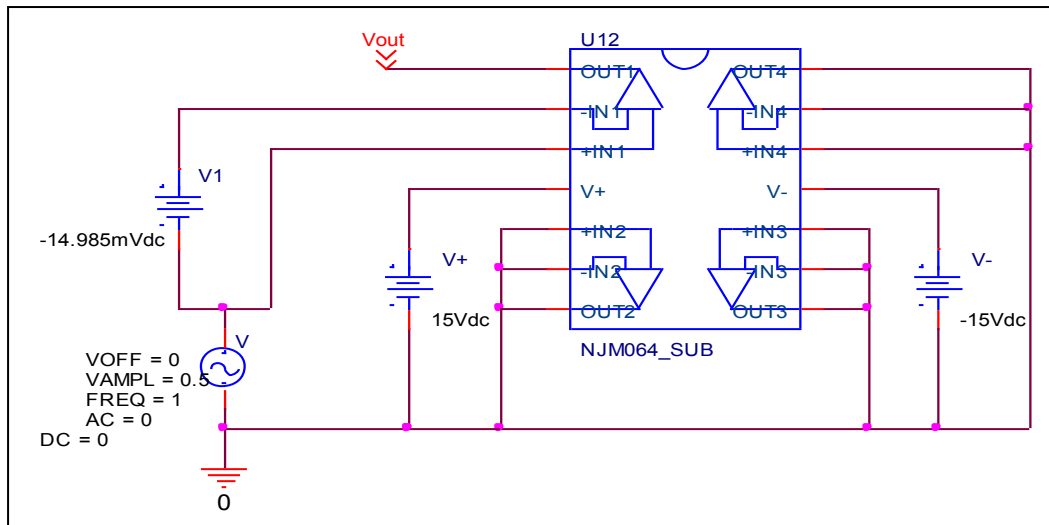
	Data sheet	Simulation	%Error
f-0dB(MHz)	1	1	0
Av-dc	80	80.1	0.125

Common-Mode Rejection Voltage gain

Simulation result



Evaluation circuit



Common Mode Reject Ratio= $10115/0.275=36781$

CMRR	Data sheet	Simulation	%Error
		90	91.312