

Device Modeling Report

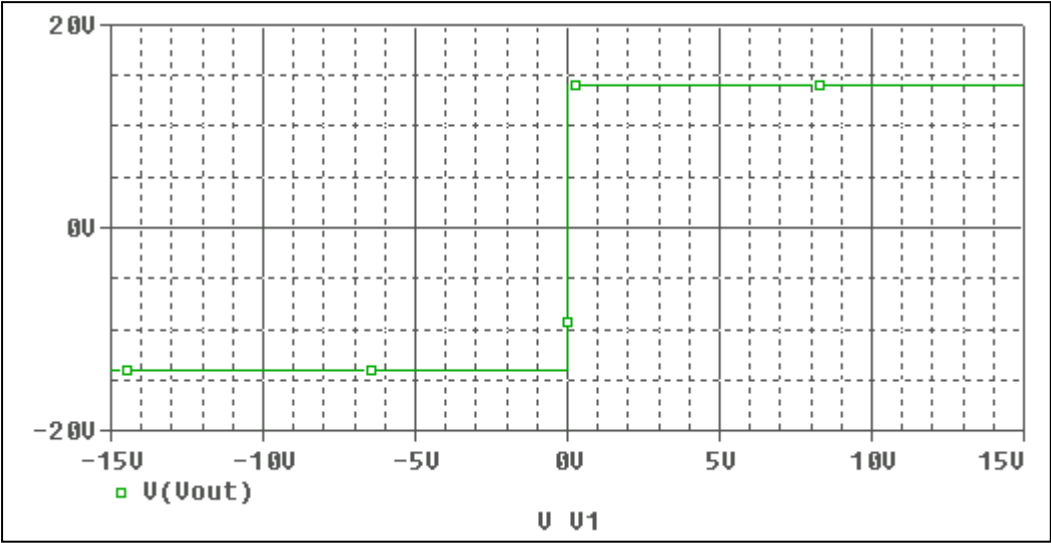
COMPONENTS:MOSFET: OPERATIONAL AMPLIFIER
PART NUMBER:NJM4559M
MANUFACTURER: NEW JAPAN RADIO CO.,LTD



Bee Technologies Inc.

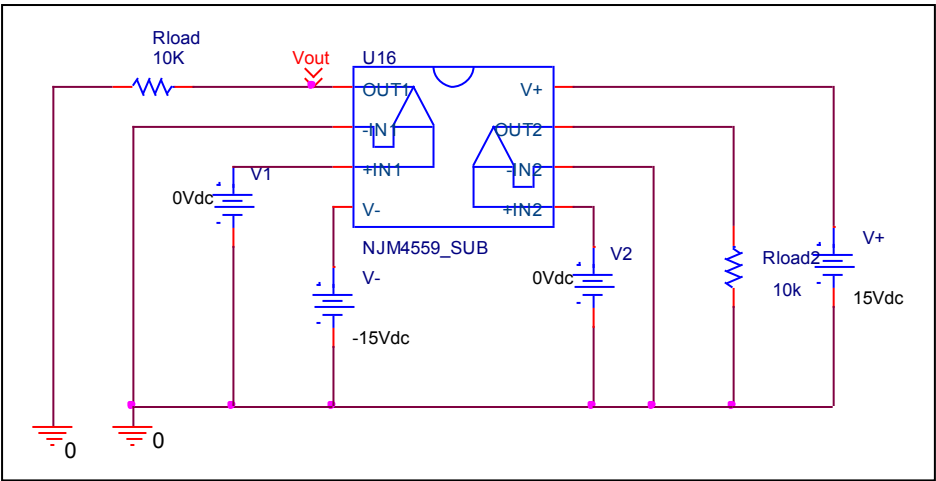
Output Voltage Swing, +Vout and –Vout

Simulation result



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

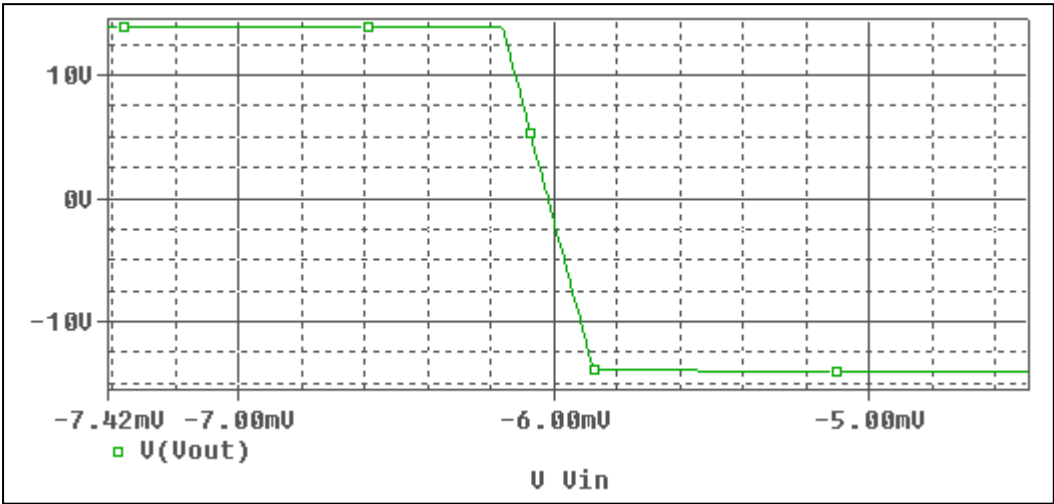
Evaluation circuit



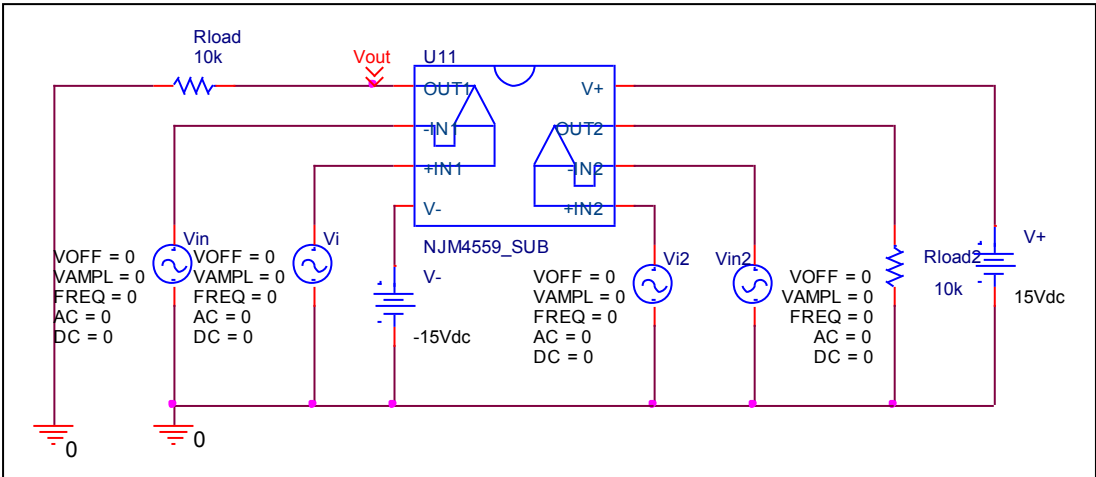
Output Voltage Swing	Data sheet	Simulation	%Error
+Vout(V)	+14	13.993	0.05
-Vout(V)	-14	-13.993	0.05

Input Offset Voltage

Simulation result



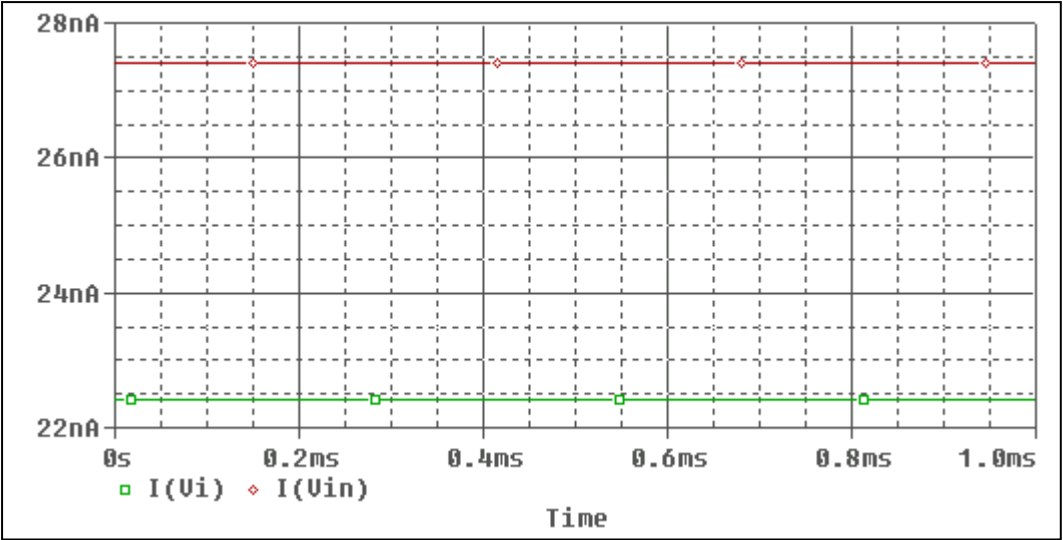
Evaluation circuit



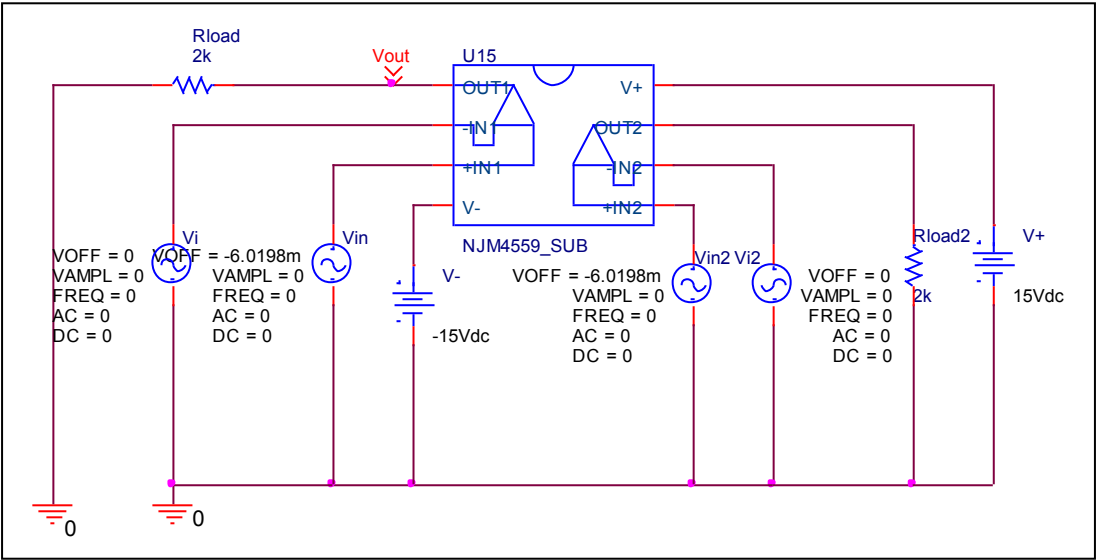
Vos	Measurement		Simulation		Error	
	6	mV	6.0198	mV	0.331	%

Input current Ib, Ibos

Simulation result



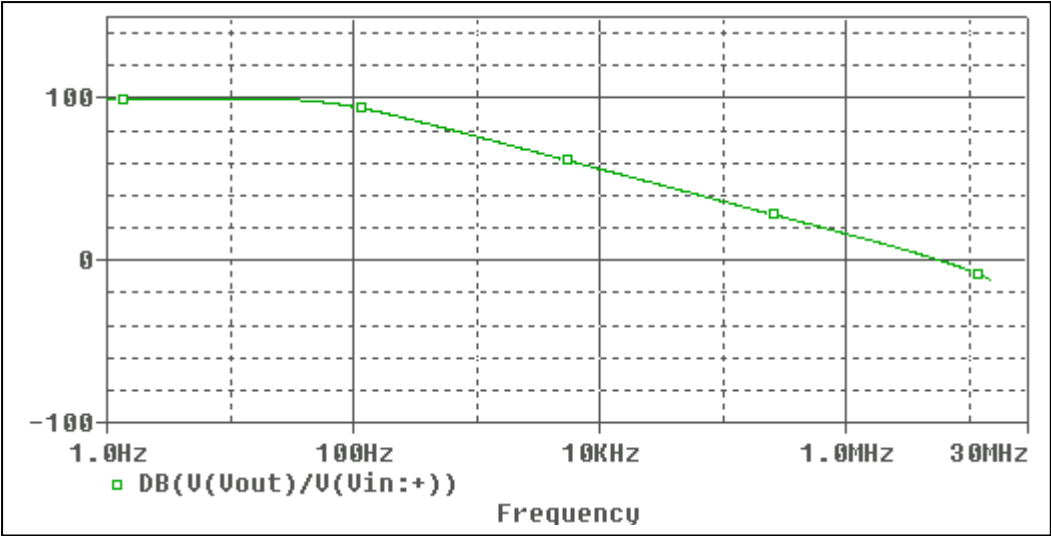
Evaluation circuit



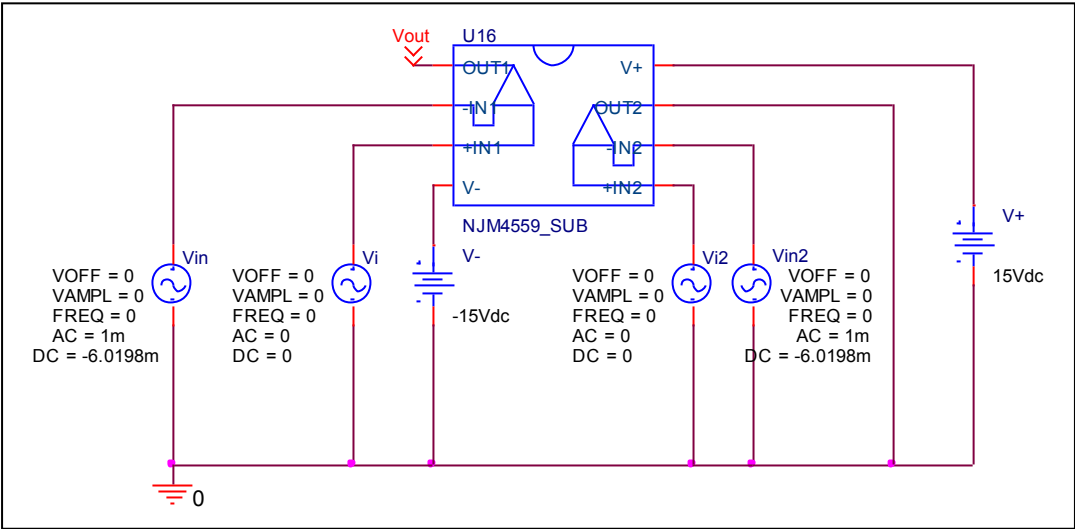
	Data sheet	Simulation	%Error
Ib(nA)	25	24.9	0.4
Ibos(nA)	5	5.0038	0.076

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

Simulation result



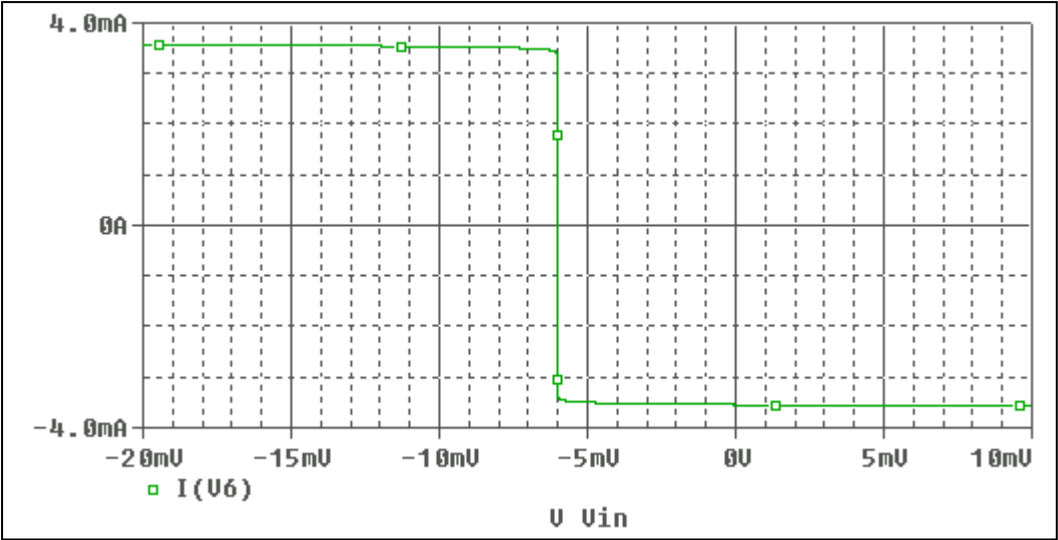
Evaluation circuit



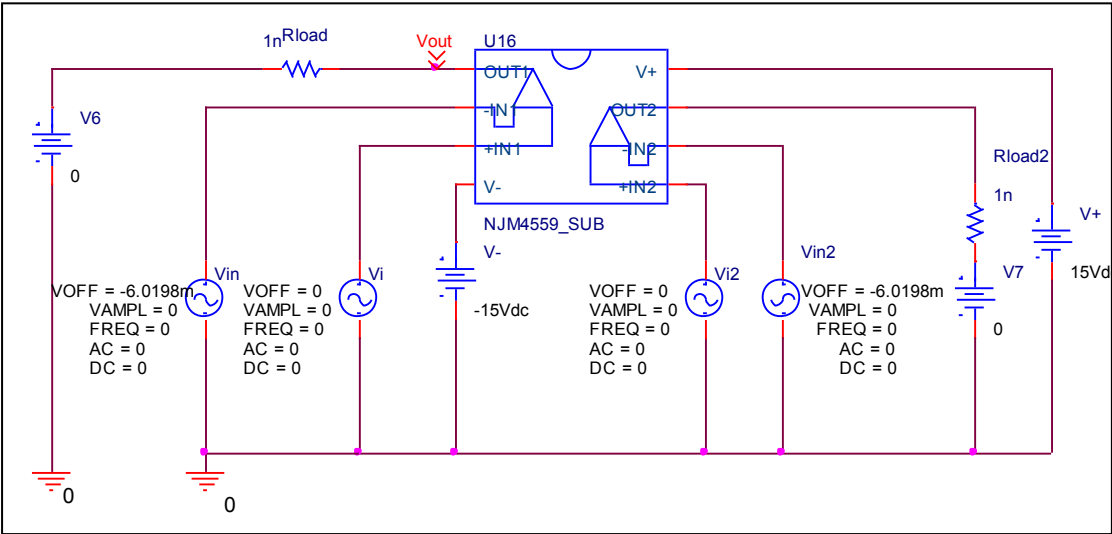
	Data sheet	Simulation	%Error
f-0dB(MHz)	6	5.89	1.83
Av-dc(dB)	100	99.8	0.2

Output Short Circuit Current - Ios

Simulation result



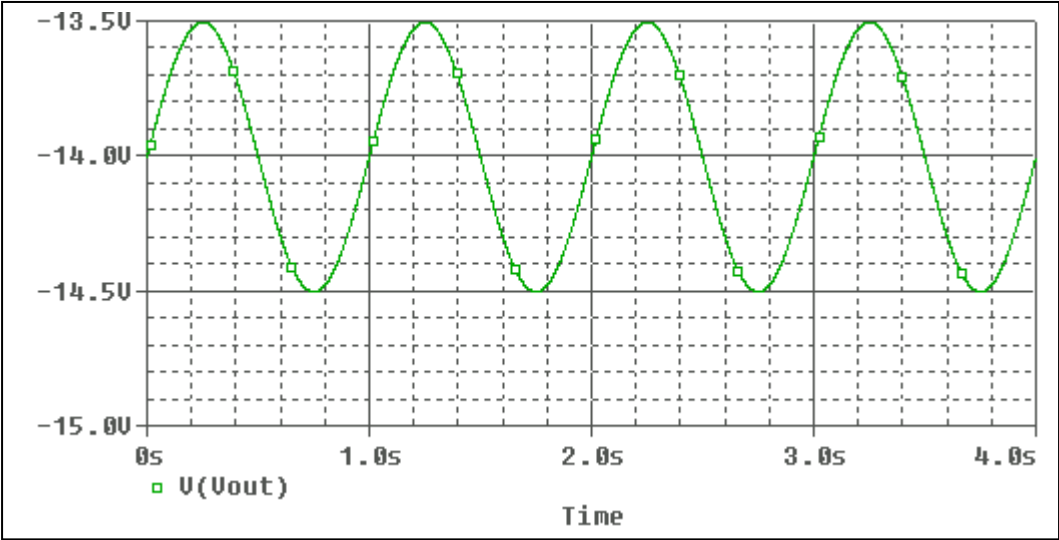
Evaluation circuit



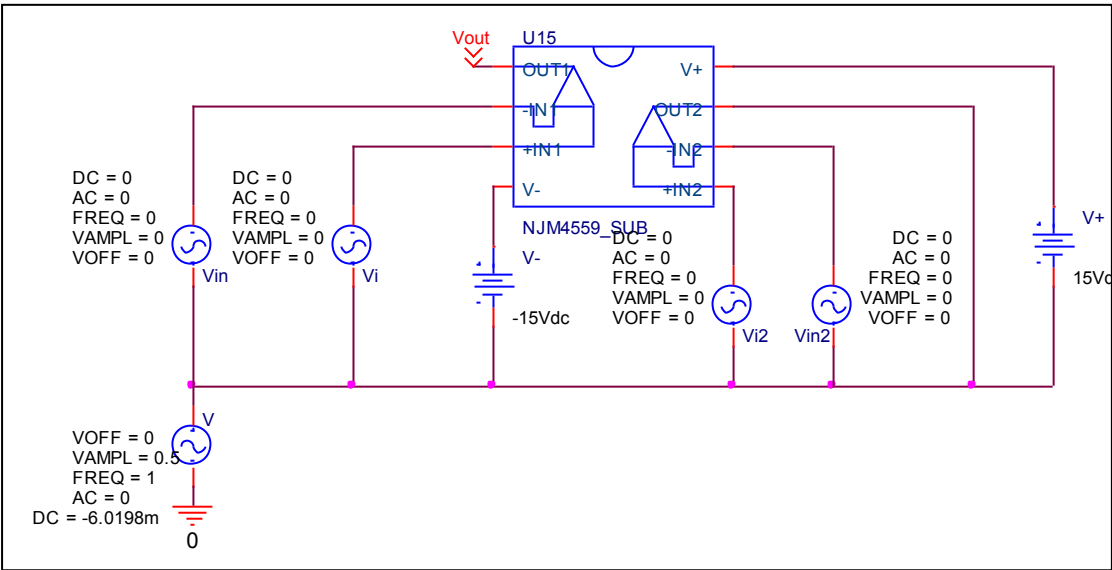
Short Circuit Current	Data sheet	Simulation	%Error
	3.5mA	3.503mA	0.085

Common-Mode Rejection Voltage gain

Simulation result



Evaluation circuit



Common mode gain=3.162/1

Common Mode Reject Ratio=97723/3.162=30905

CMRR	Data sheet	Simulation	%Error
	31622	31567	2.32