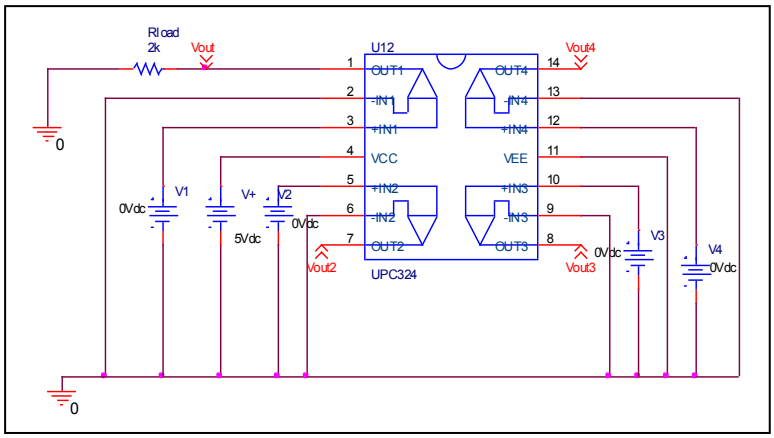
Device Modeling Report

COMPONENTS:MOSFET: OPERATIONAL AMPLIFIER
PART NUMBER:uPC324C
MANUFACTURER:NEC ELECTRONICS

Bee Technologies Inc.

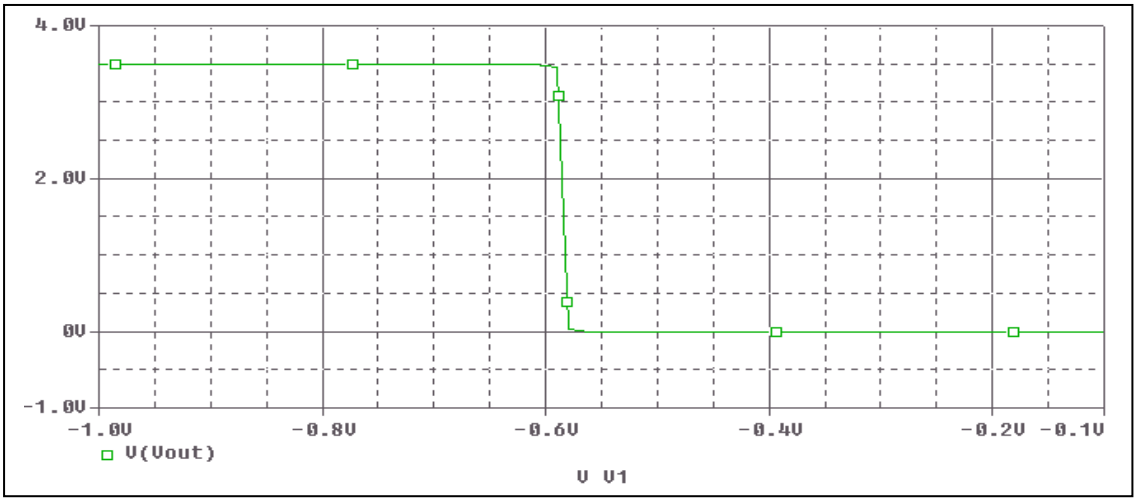
Output Voltage Swing, +Vout and –Vout

Evaluation circuit



The output voltage change of Opamp(open loop) when input DC voltage (Vin -Vi) is changed with the evaluation circuit is simulated

Simulation result

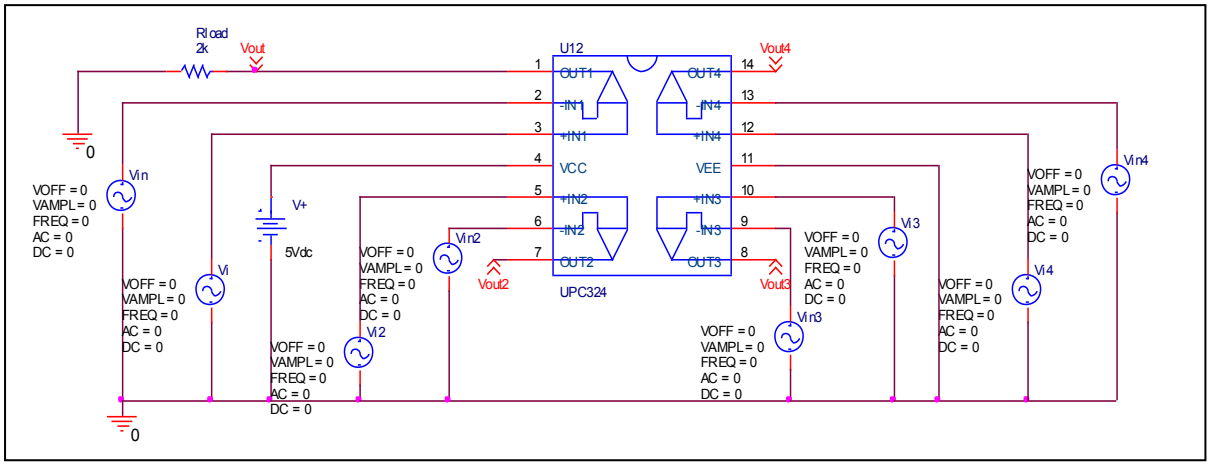


These simulation results are compared with ±Vout

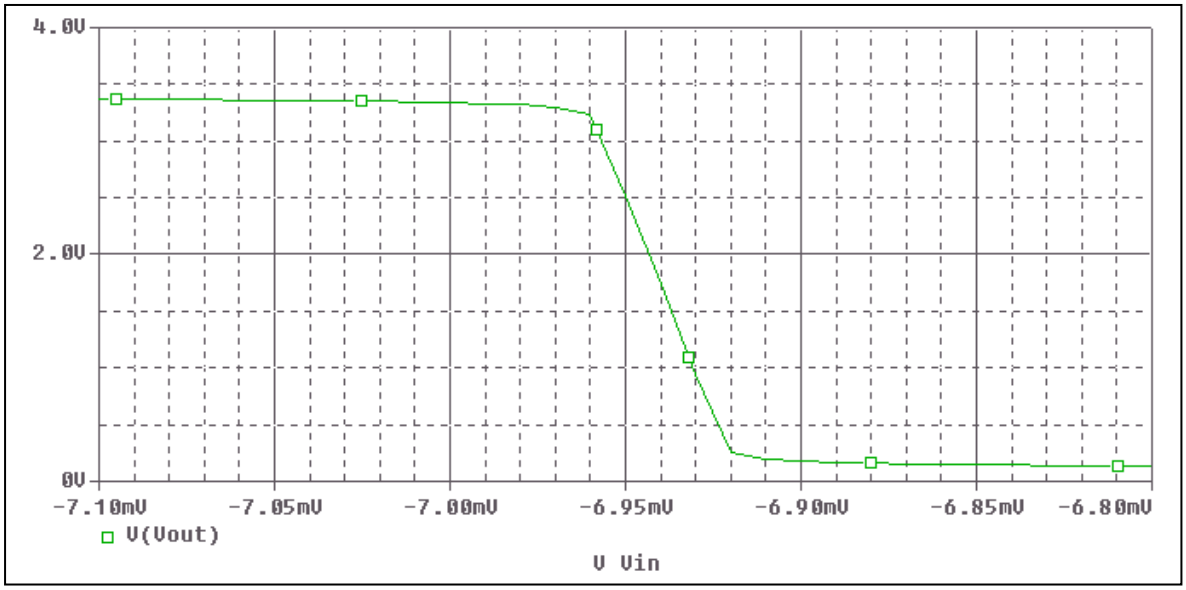
Output Voltage Swing	Data sheet	Simulation	%Error
+Vout(V)	3.5	3.4993	0.02
-Vout(V)	0	0	0

Input Offset Voltage

Evaluation circuit



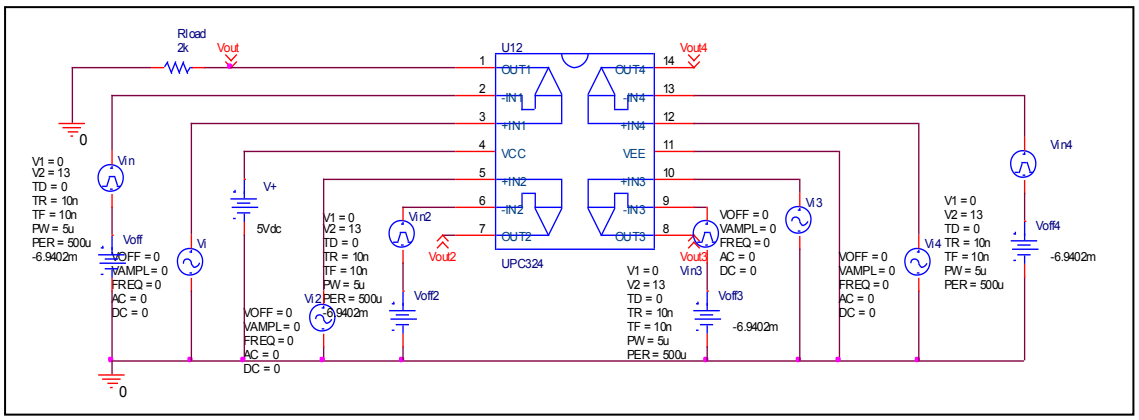
Simulation result



	Measurement		Simulation		Error	
Vos	7	mV	6.9402	mV	0.854	%

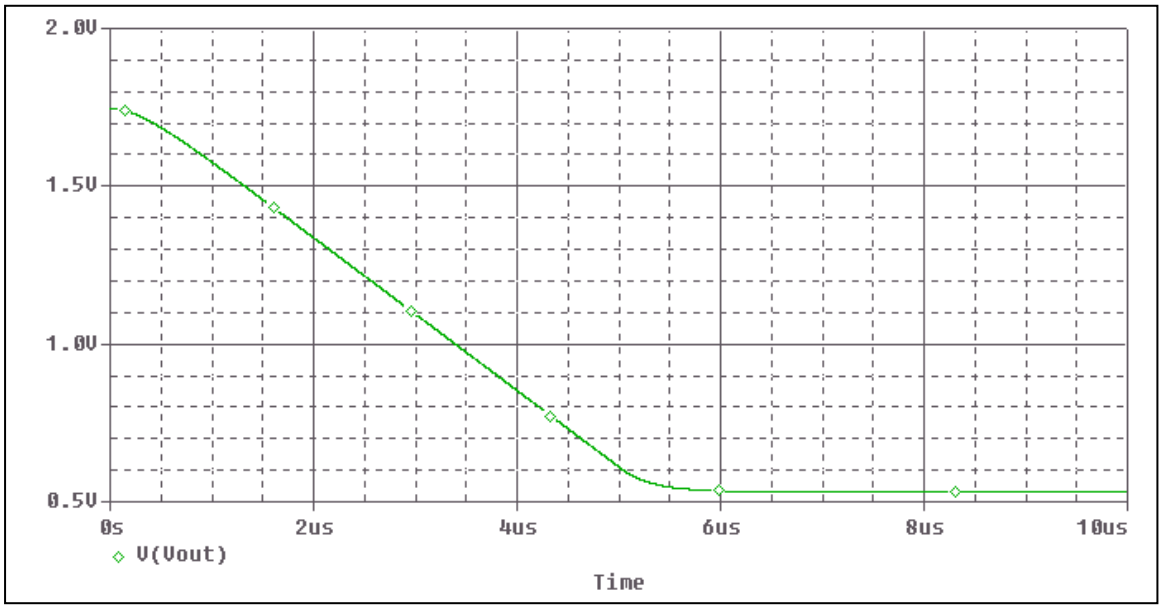
Slew Rate, +SR, -SR

Evaluation circuit



The output voltage change versus time (slope) of op-amp when input electric step voltage.

Simulation result

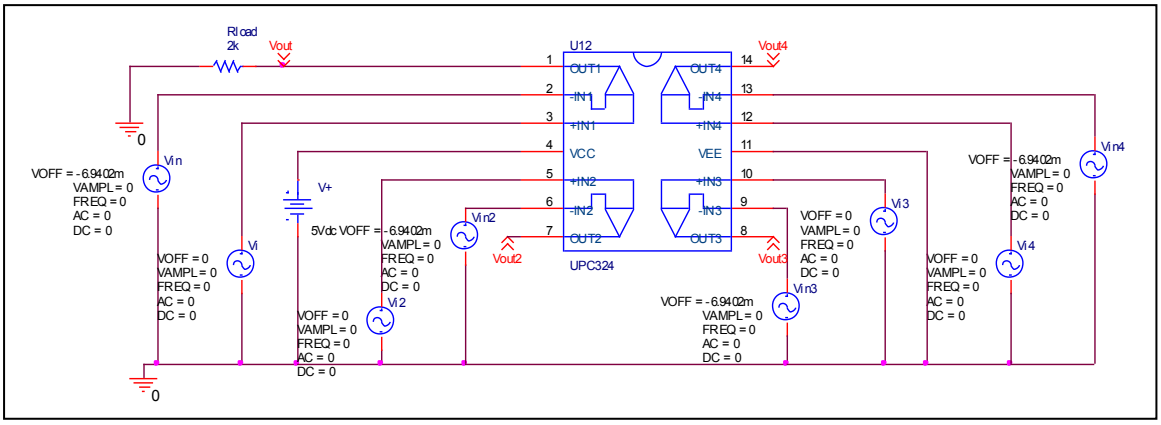


Output voltage change 0.25V in 1 us (If no good can change **C2** of Spice Model Editor)

Slew Rate(v/us)	Data sheet	Simulation	%Error
	0.25	0.24	4

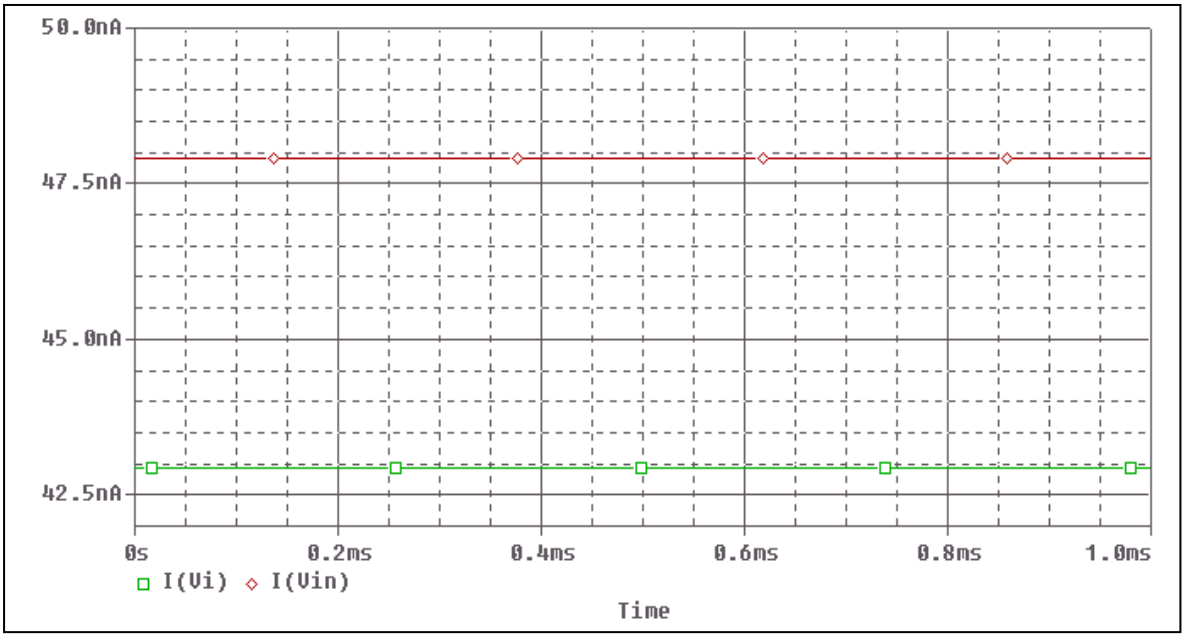
Input current Ib, Ibos

Evaluation circuit



The input offset current when supply voltage to op-amp

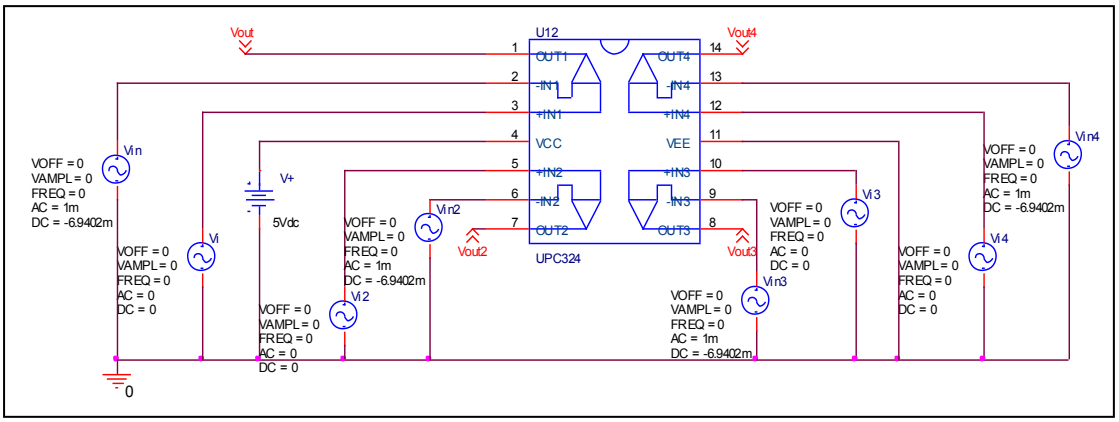
Simulation result



	Data sheet	Simulation	%Error
Ib(nA)	45	45.42	0.933
Ibos(nA)	5	4.97	0.6

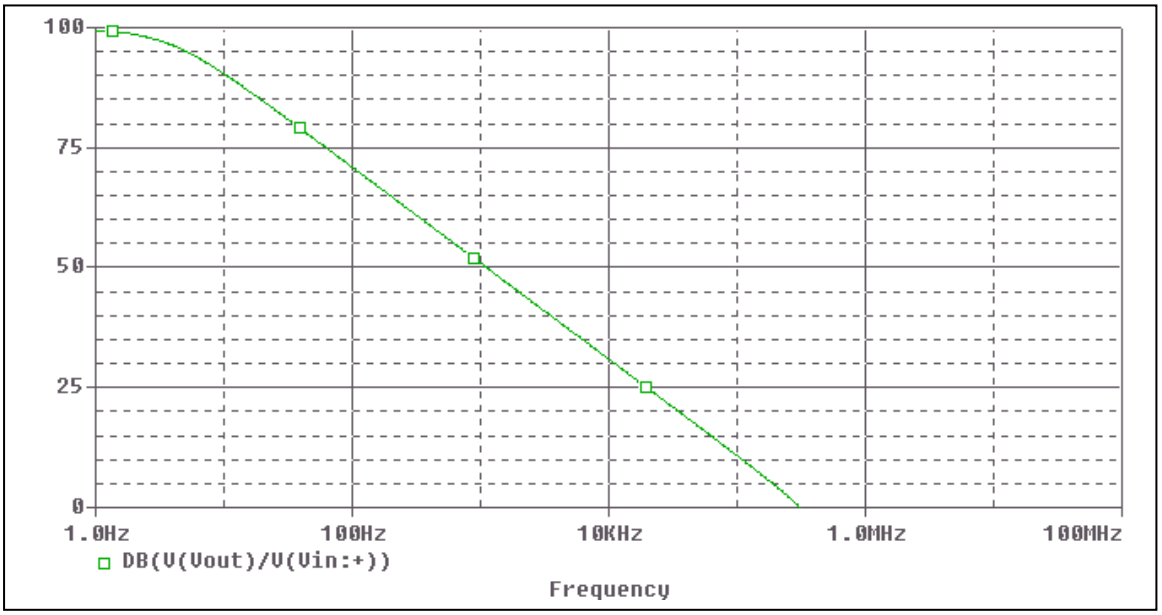
Open Loop Voltage Gain vs. Frequency , Av-dc, f-0dB

Evaluation circuit



The open loop voltage gain of op-amp when supply AC input voltage 3MHz frequecy

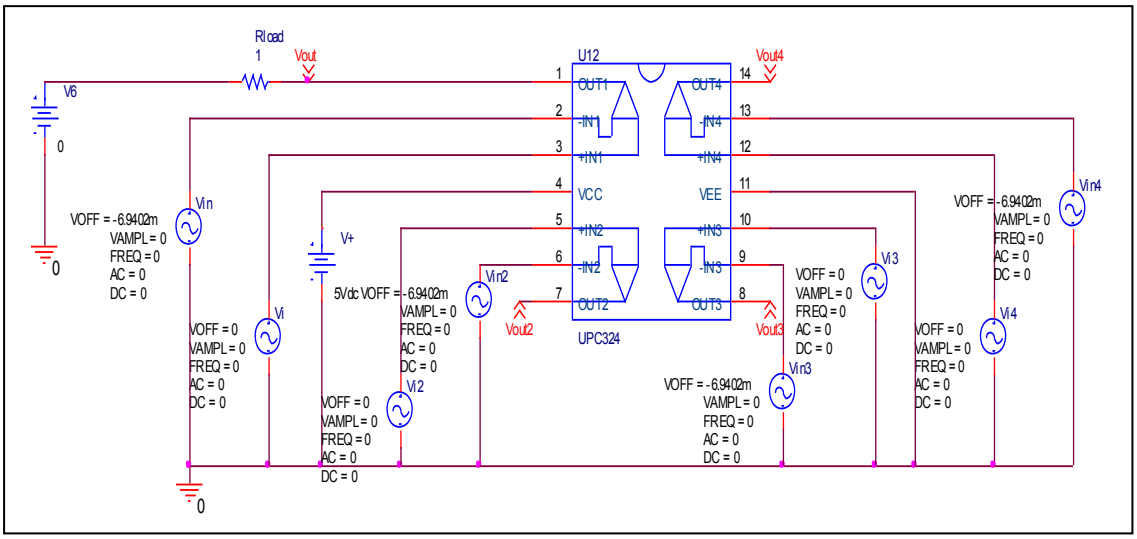
Simulation result



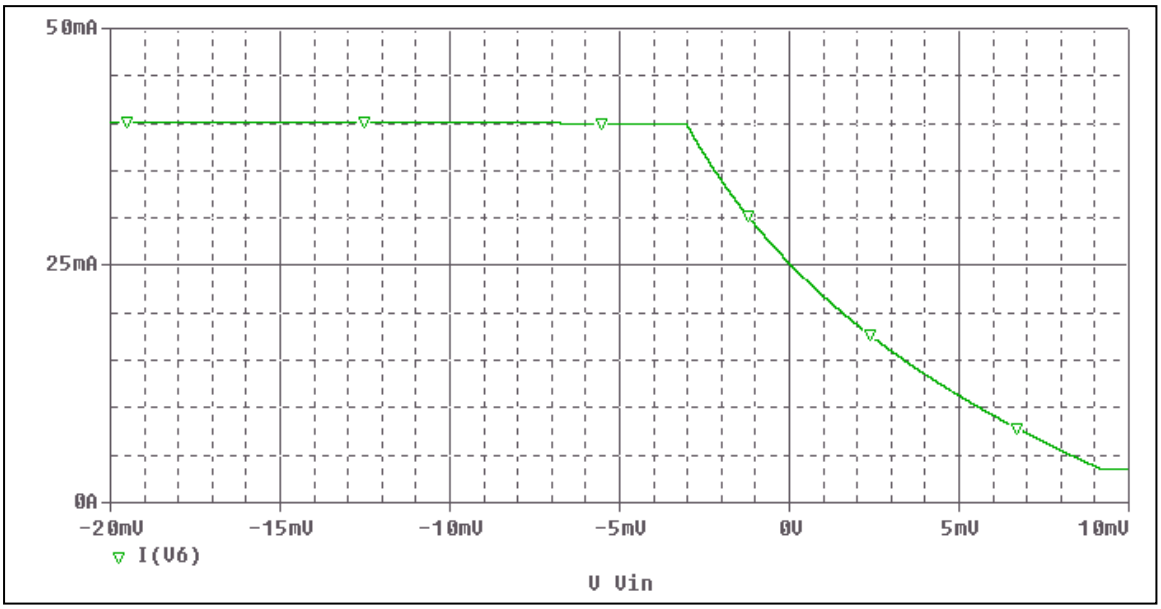
	Data sheet	Simulation	%Error
f-0dB(MHz)	0.3	0.306	2
Av-dc	100000	93680	6.32

Output Short Circuit Current - Ios

Evaluation circuit



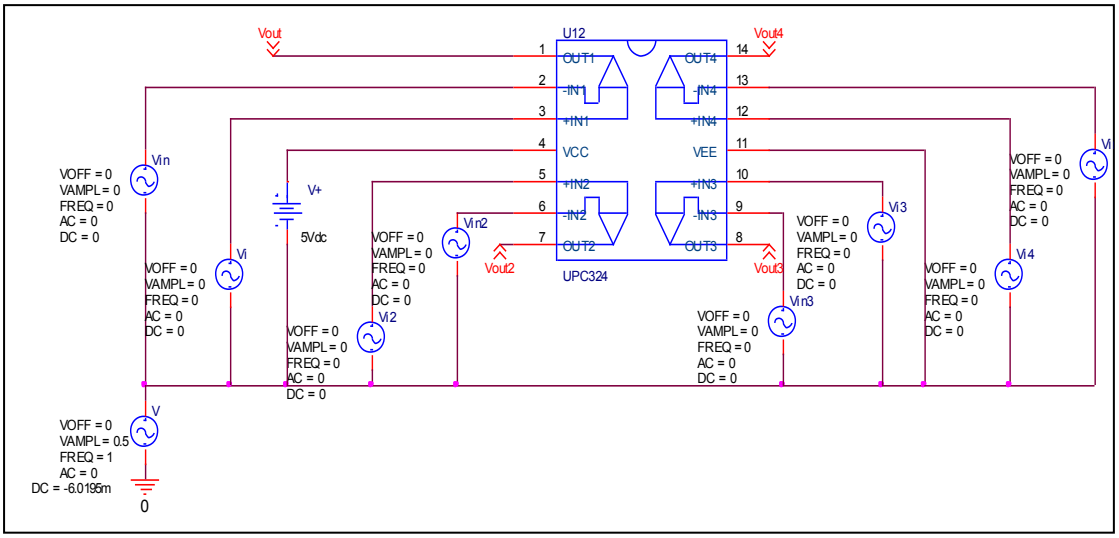
Simulation result



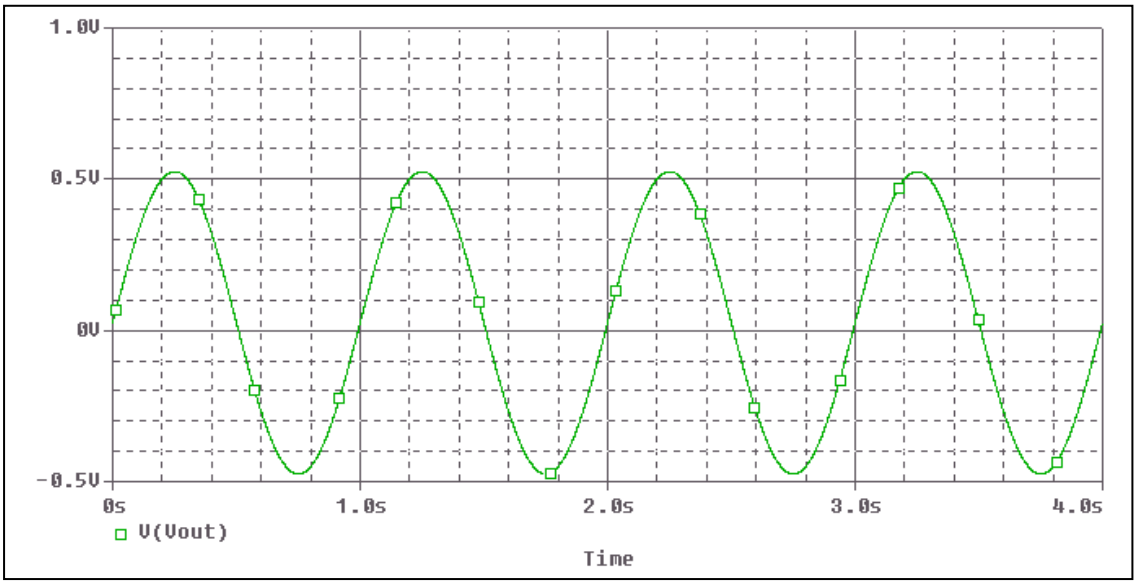
Short Circuit Current	Data sheet	Simulation	%Error
	40mA	40.047mA	0.117

Common-Mode Rejection Voltage gain

Evaluation circuit



Simulation result



Common mode gain=1/0.1778
Common Mode Reject Ratio=93680/5.6234=16659

CMRR	Data sheet	Simulation	%Error
	17782	16659	6.315