

Device Modeling Report

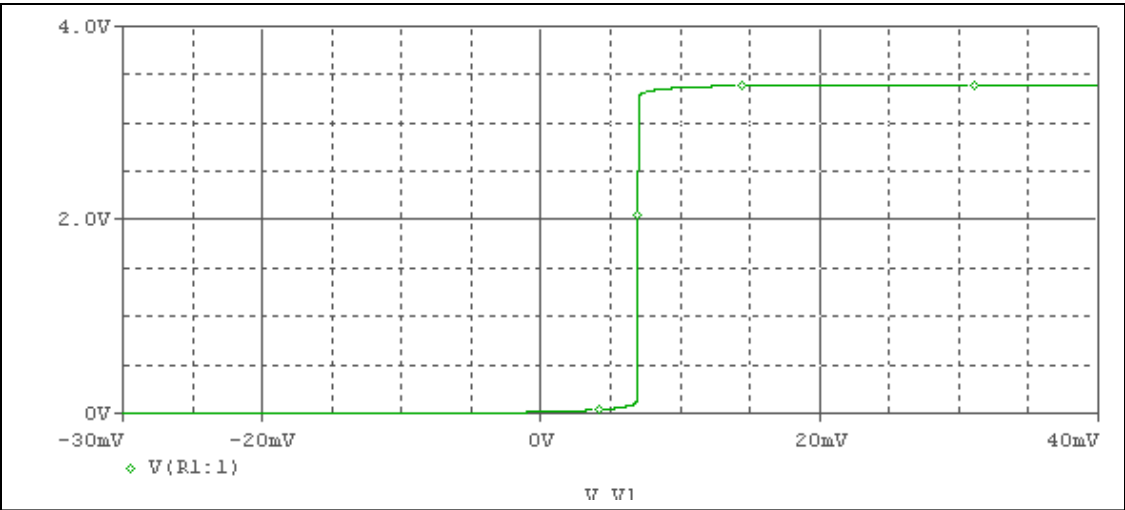
COMPONENTS: Operational Amplifier PNP BJT Input
PART NUMBER: TA75W01FU
MANUFACTURER: TOSHIBA



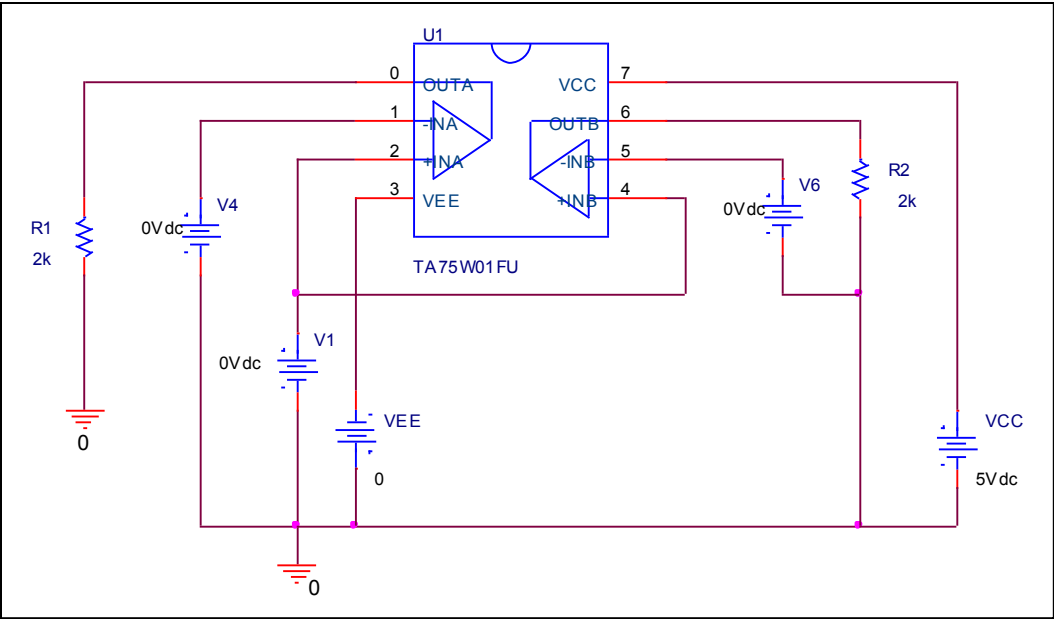
Bee Technologies Inc.

Output Voltage Swing (Vcc=5V, VEE=GND, RL=2kohm)

Circuit Simulation Result



Evaluation circuit

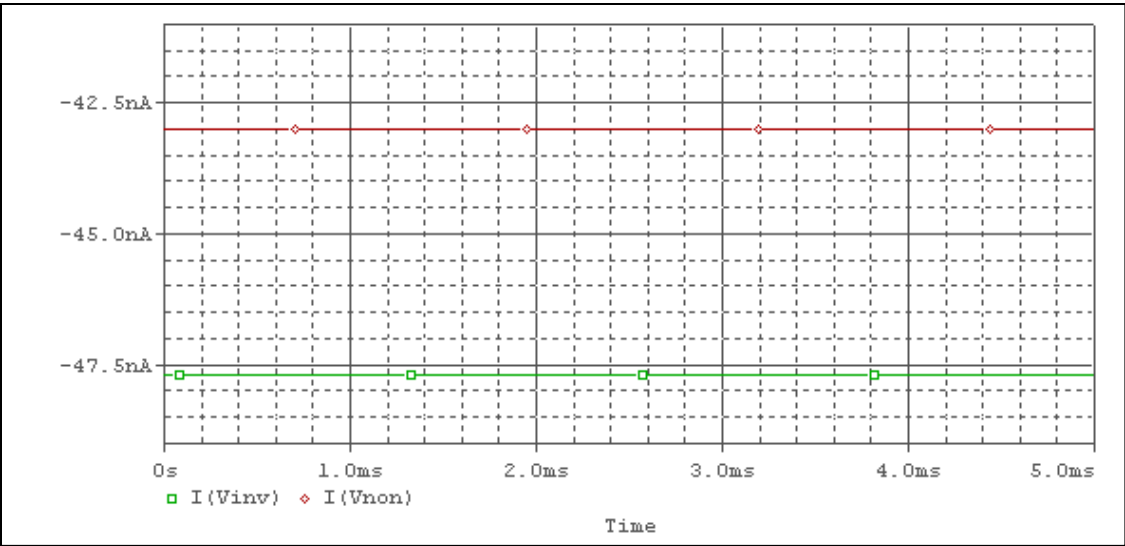


Compare Measurement vs. Simulation

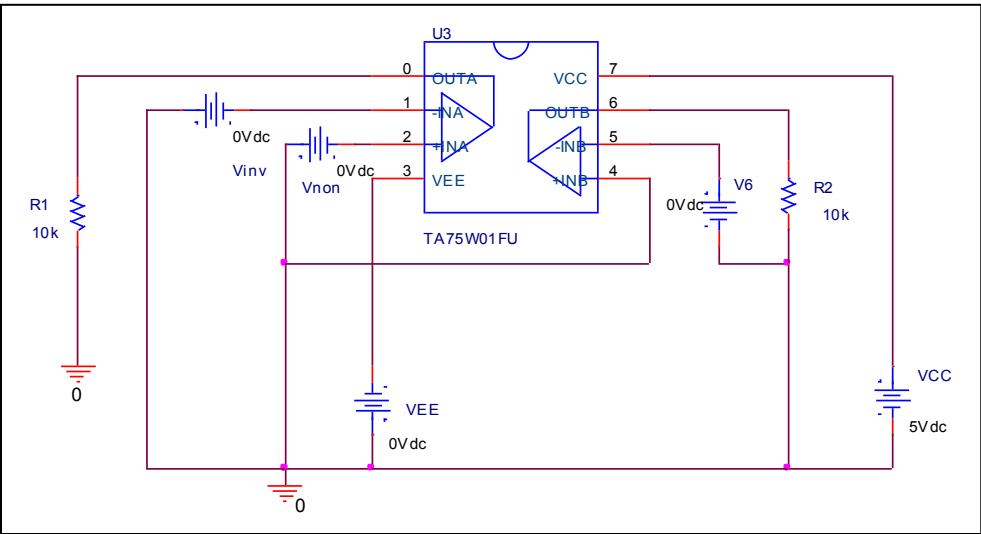
	Measurement		Simulation		Error	
Vout	3.4	V	3.3917	V	0.244	%

Input Bias Current

Circuit Simulation Result



Evaluation circuit

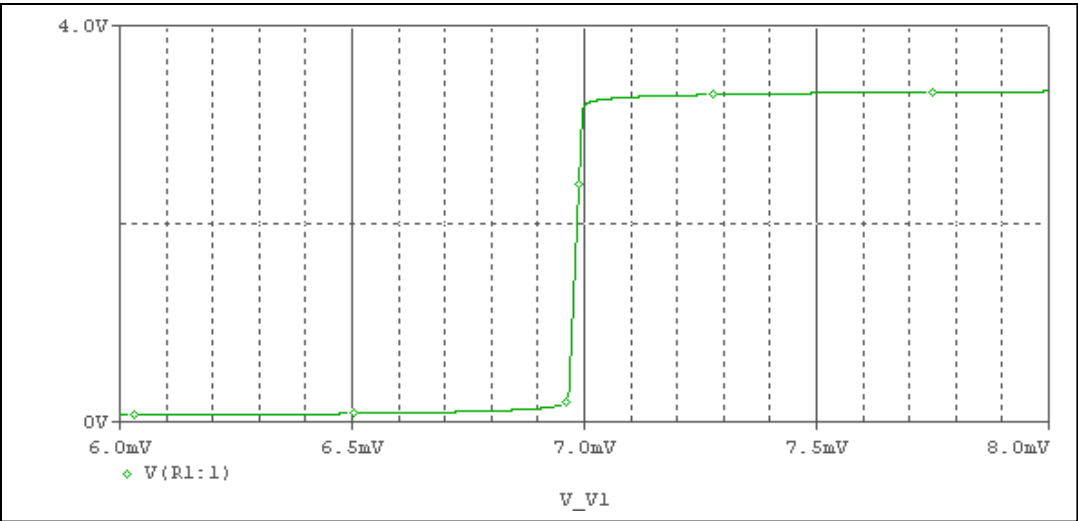


Compare Measurement vs. Simulation

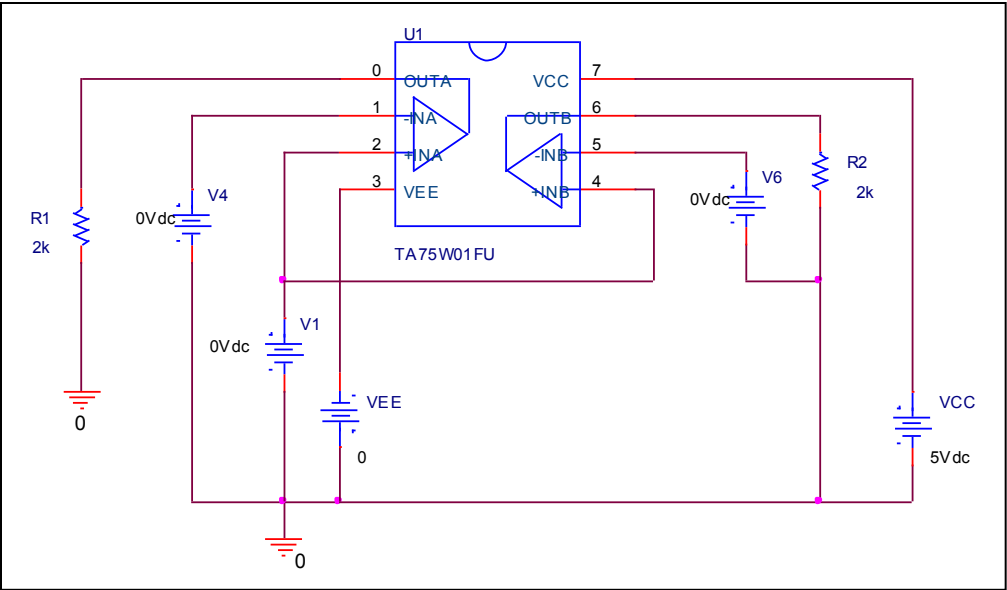
	Measurement		Simulation		Error	
Ib	45	nA	45.3425	nA	0.7611	%
Ibos	5	nA	4.72	nA	5.6	%

Input Offset Voltage

Circuit Simulation Result (Vin vs Vout)



Evaluation circuit

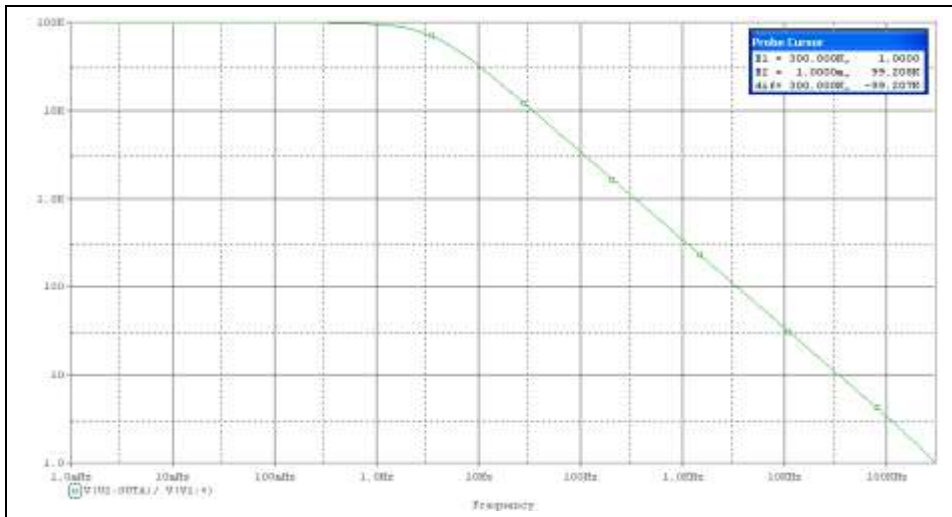


Compare Measurement vs. Simulation

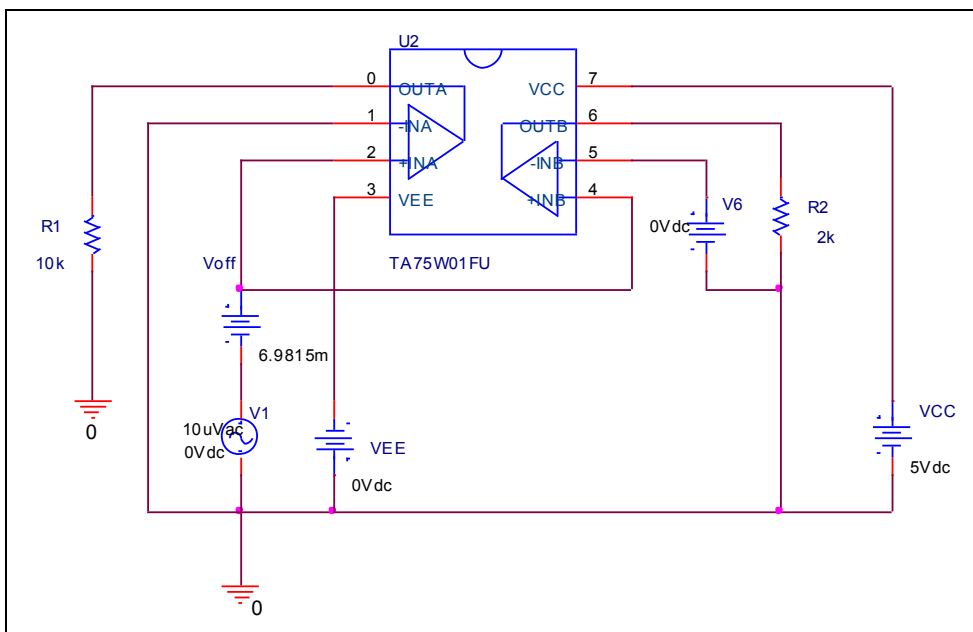
	Measurement		Simulation		Error	
Vos	-7	mV	-6.9769	mV	0.33	%

Open Loop Gain (DC) ($R_L \geq 2k\Omega$) and Unity Gain Frequency

Circuit Simulation Result



Evaluation circuit

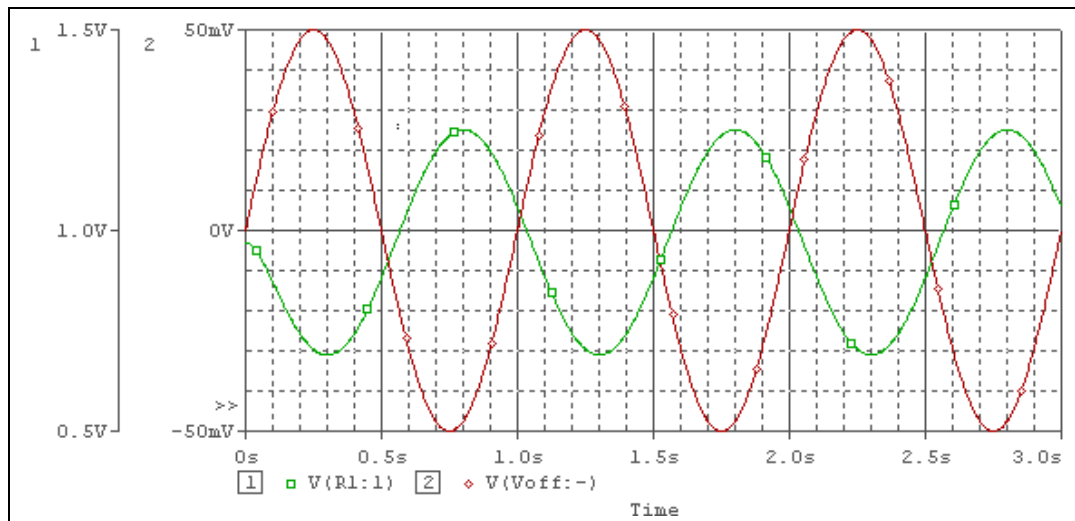


Compare Measurement vs. Simulation

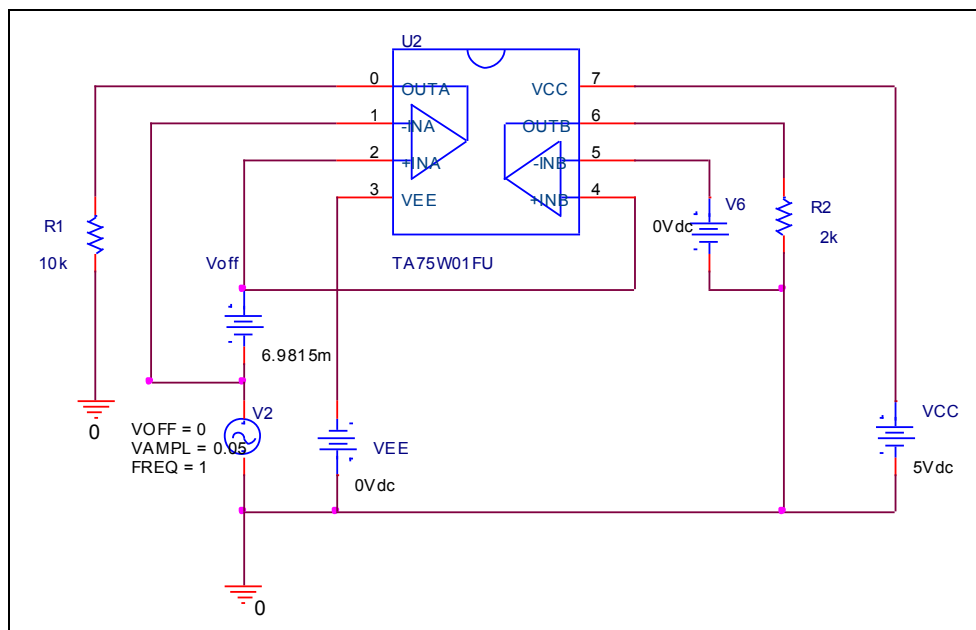
	Measurement		Simulation		Error	
Av-dc	100	V/mV	99.208	V/mV	0.792	%
f-0db	0.3	MHz	0.300378	MHz	0.126	%

Common - Mode Rejection Ratio – CMRR

Circuit Simulation Result



Evaluation circuit



Common-model gain = 5.66488 V/V

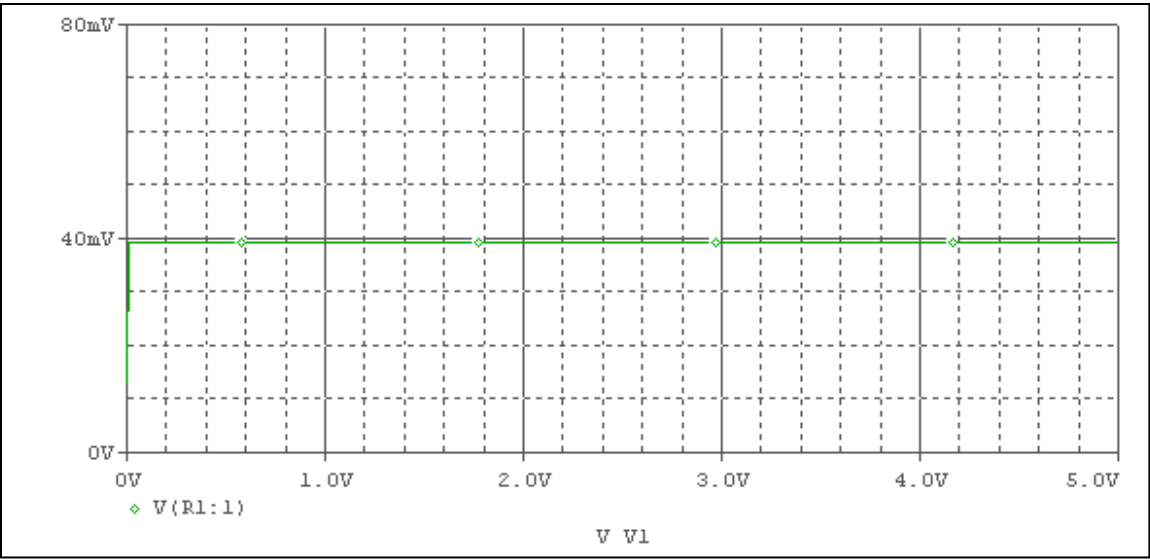
CMRR = $99193 / 5.61333 = 17652.62459$, $20\log_{10}(17652.62459) = 84.936\text{dB}$

Compare Measurement vs. Simulation

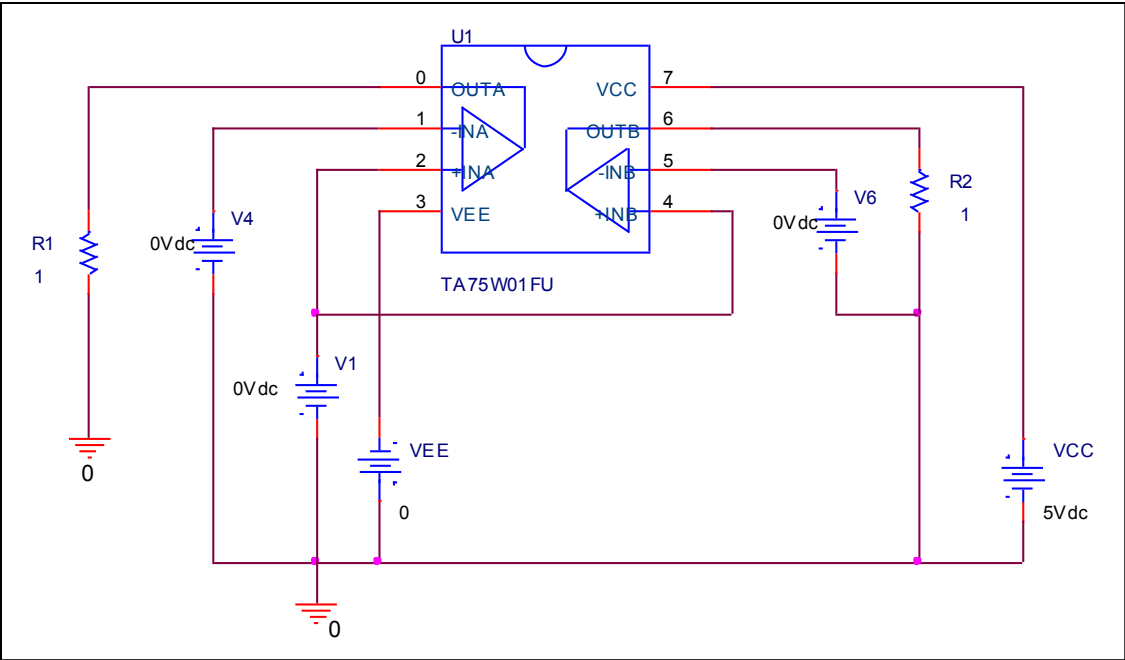
	Measurement		Simulation		Error	
CMRR	85	dB	84.936	dB	0.075	%

Output Short Circuit Current

Circuit Simulation Result



Evaluation circuit



Compare Measurement vs. Simulation

	Measurement		Simulation		Error	
Ios	40	mA	39.361	mA	1.5975	%