Device Modeling Report

COMPONENTS : VOLTAGE COMPARATOR
PART NUMBER : NJM2403
MANUFACTURER : NEW JAPAN RADIO

Bee Technologies Inc.

BJT MODEL

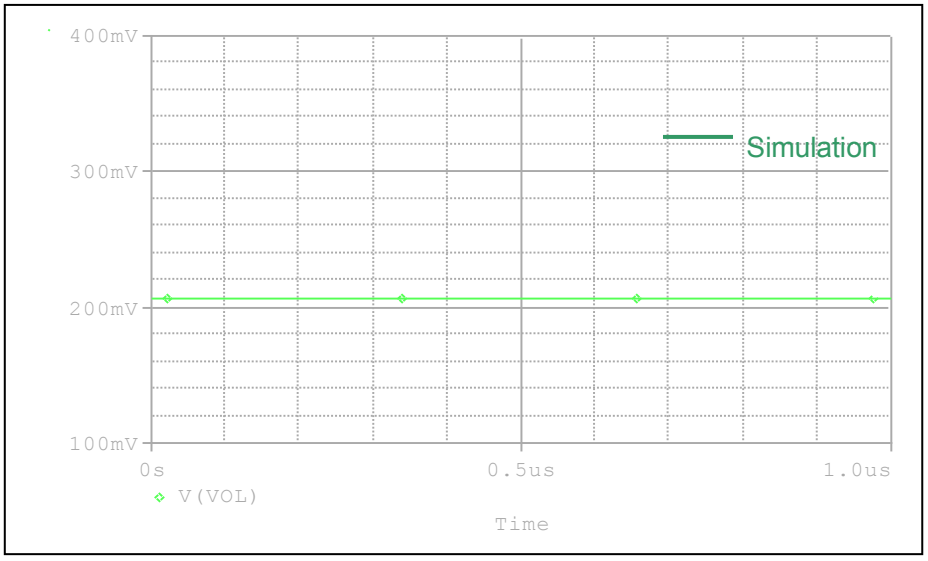
Pspice model parameter	Model description
IS	Saturation Current
BF	Ideal Maximum Forward Beta
CJC	Zero-bias Collector-Base Junction Capacitance
TF	Forward Transit Time
TR	Reverse Transit Time

DIODE MODEL

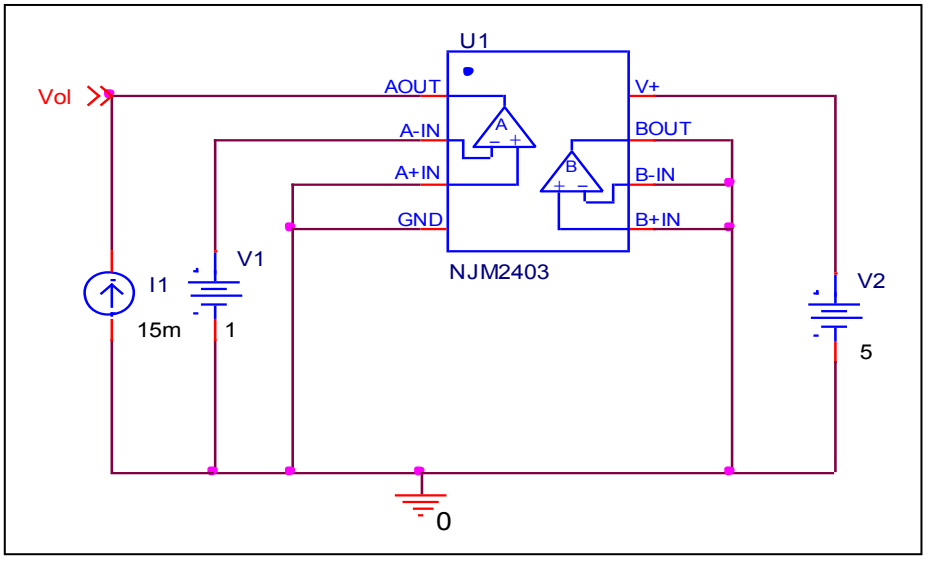
Pspice model parameter	Model description
IS	Saturation Current
RS	Series Resistance

Output Saturation Voltage

Simulation result



Evaluation Circuit

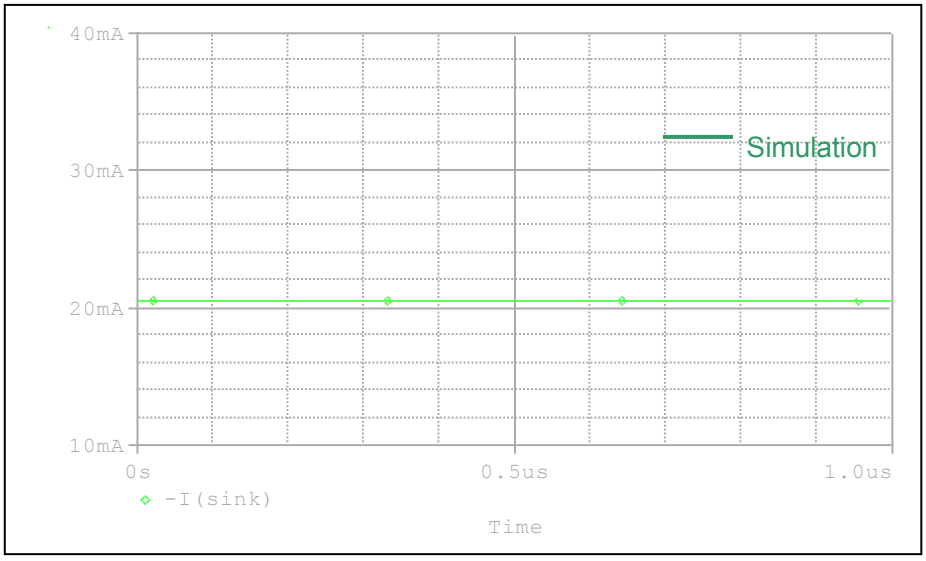


Comparison Table

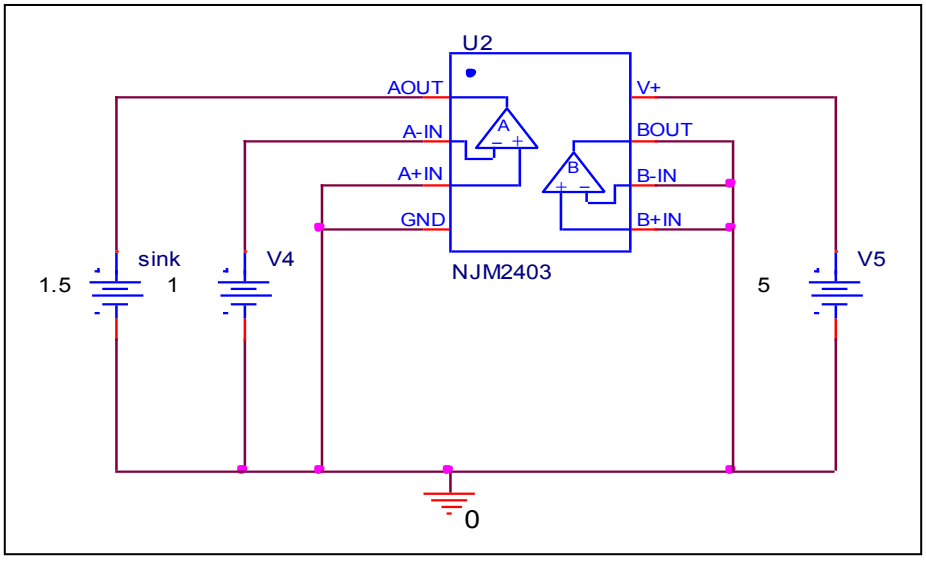
I_{sink} = 15mA	Measurement	Simulation	%Error
V_{SAT} (mV)	200	206.333	3.167

Sink Current

Simulation result



Evaluation Circuit

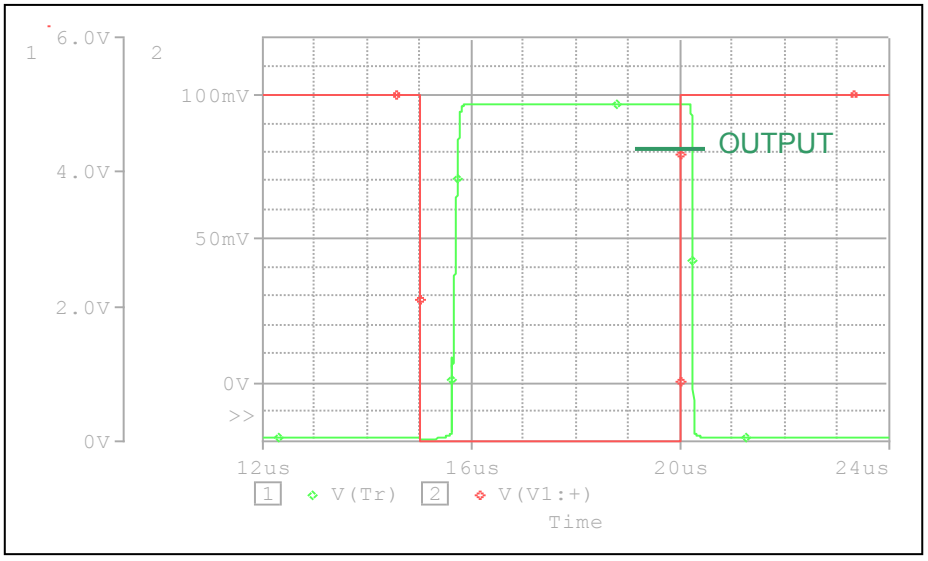


Comparison Table

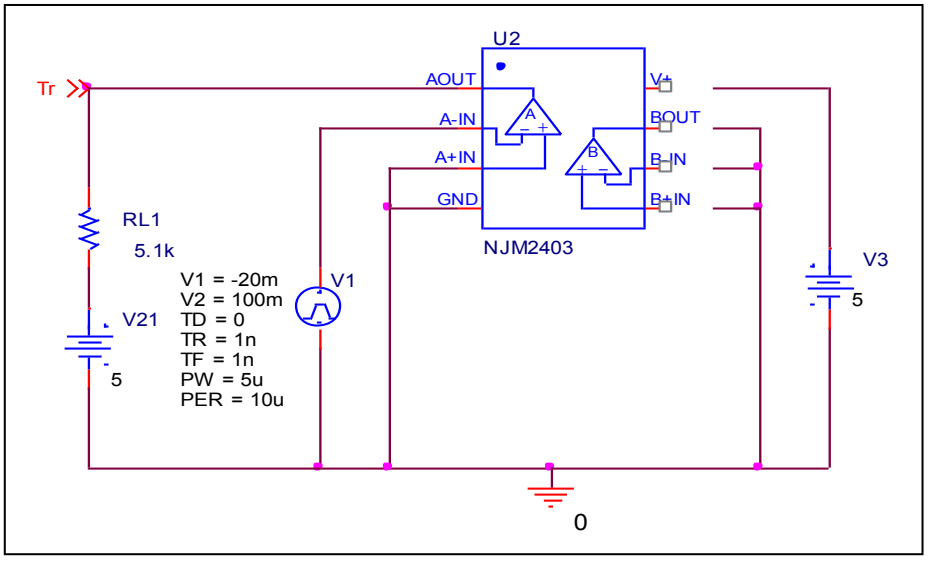
V_{ol} = 1.5 V	Measurement	Simulation	%Error
I_{sink} (mA)	20	20.459	2.295

Response time (Rise time and Transition time)

Simulation result



Evaluation Circuit

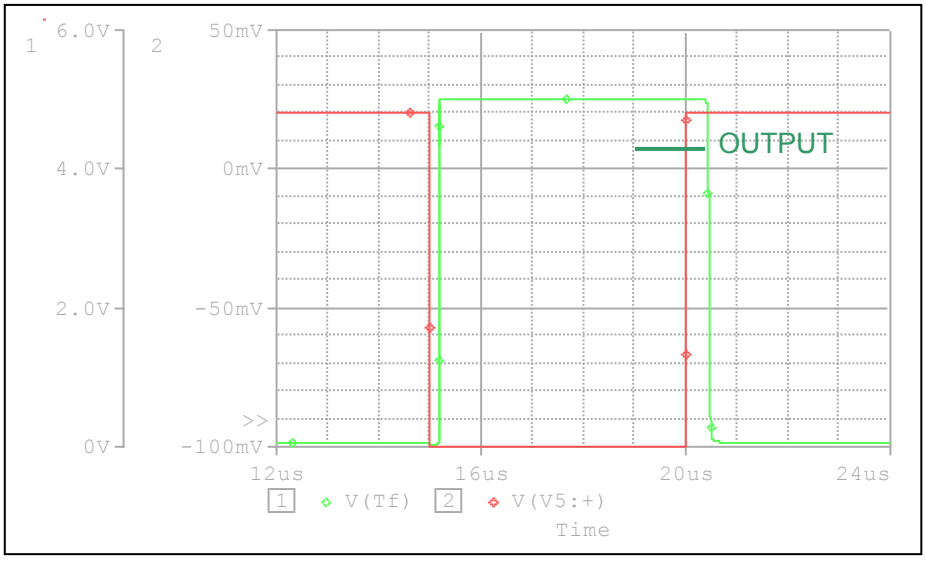


Comparison Table

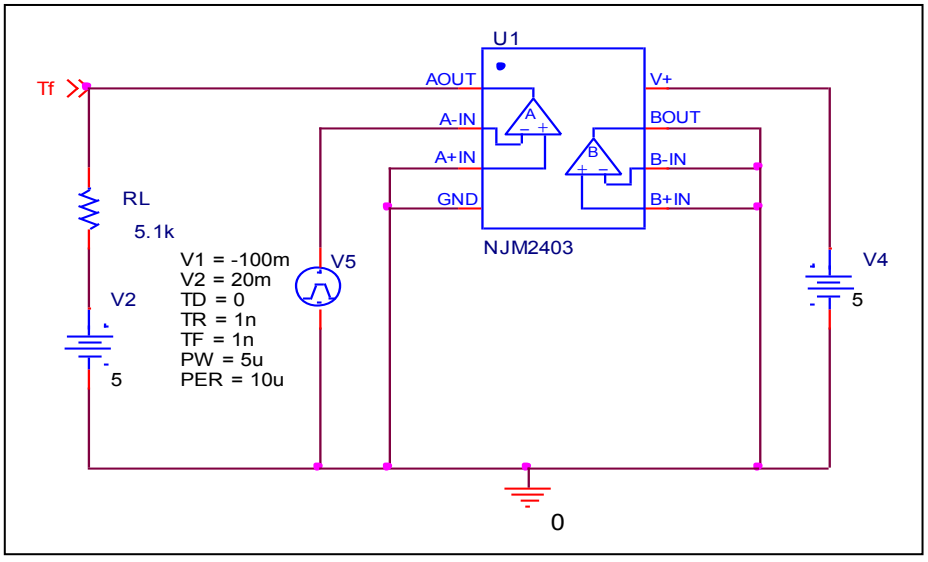
	Measurement	Simulation	% Error
Rising delay time (us)	0.63	0.632803	0.445
Transition time (us)	0.12	0.119944	-0.047

Response time (Falling time)

Simulation result



Evaluation Circuit

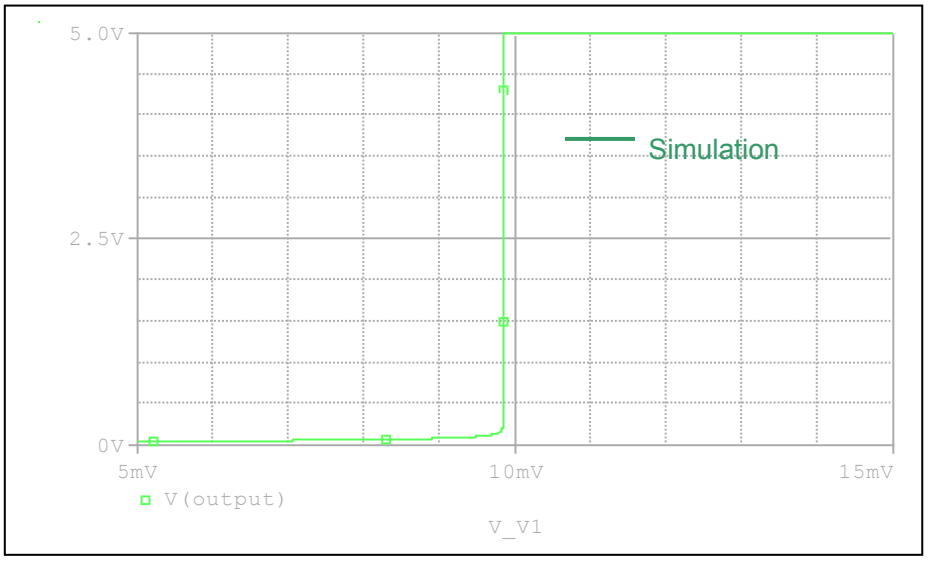


Comparison Table

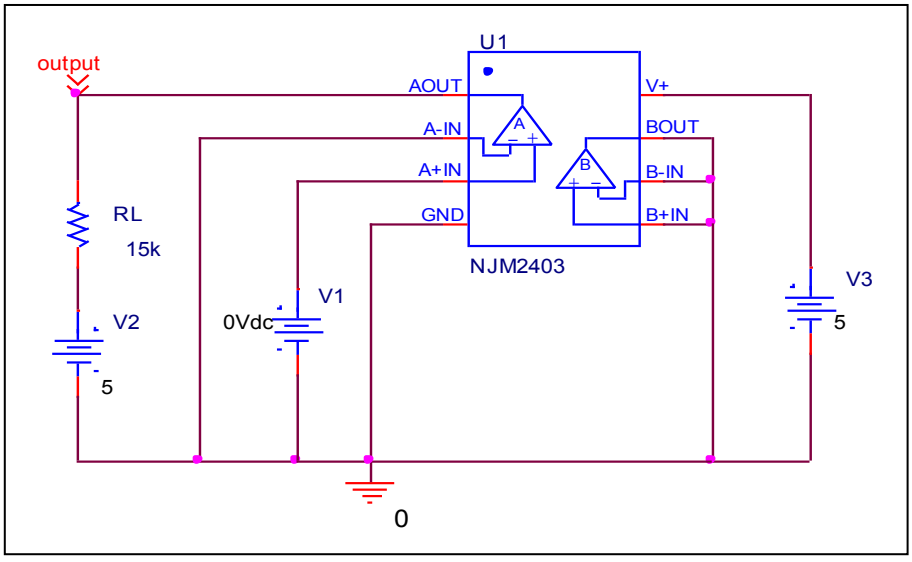
	Measurement	Simulation	% Error
Falling delay time (us)	0.43	0.430188	0.044

Input Offset Voltage Characteristics

Simulation result



Evaluation Circuit

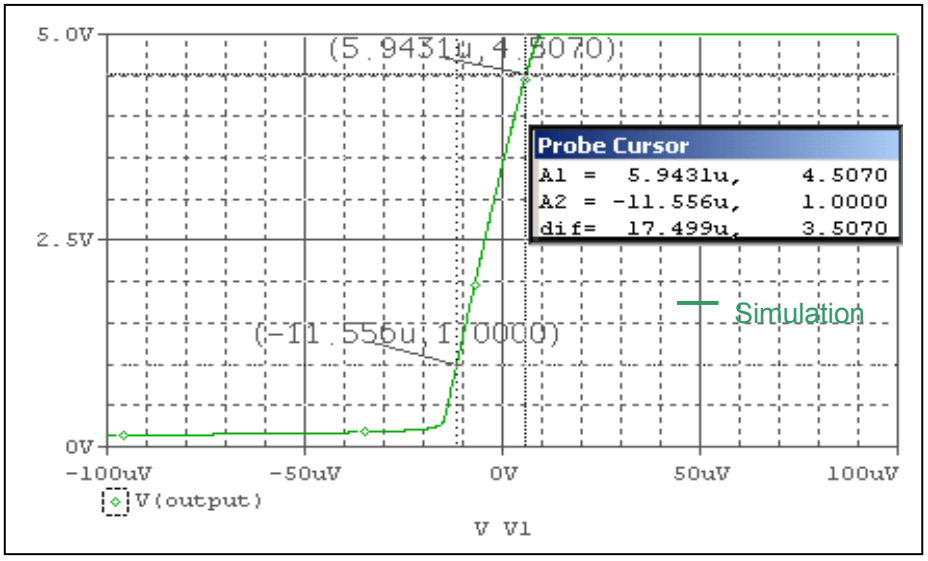


Comparison Table

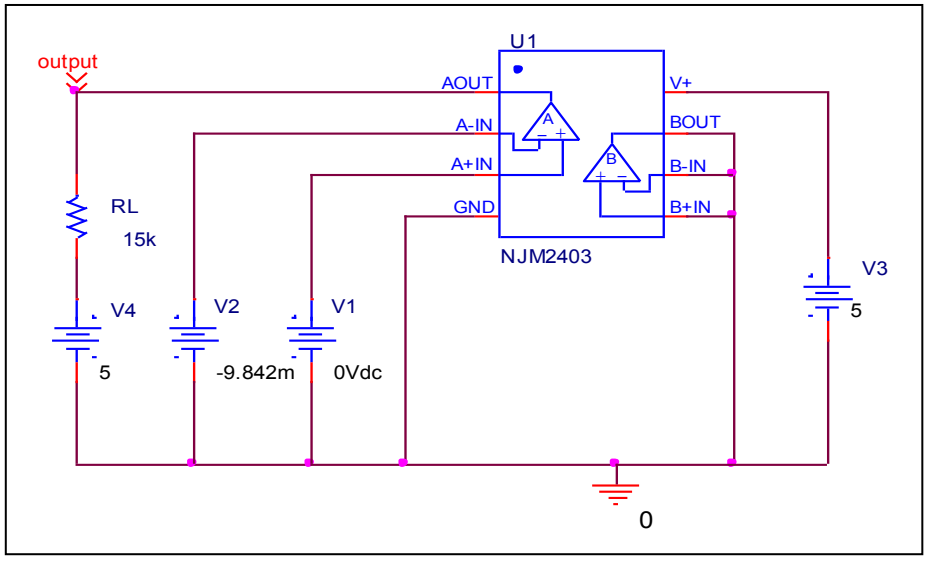
	Measurement	Simulation	%Error
V_{io}(mV)	10	9.842	-1.580

Av Characteristics

Simulation result



Evaluation Circuit



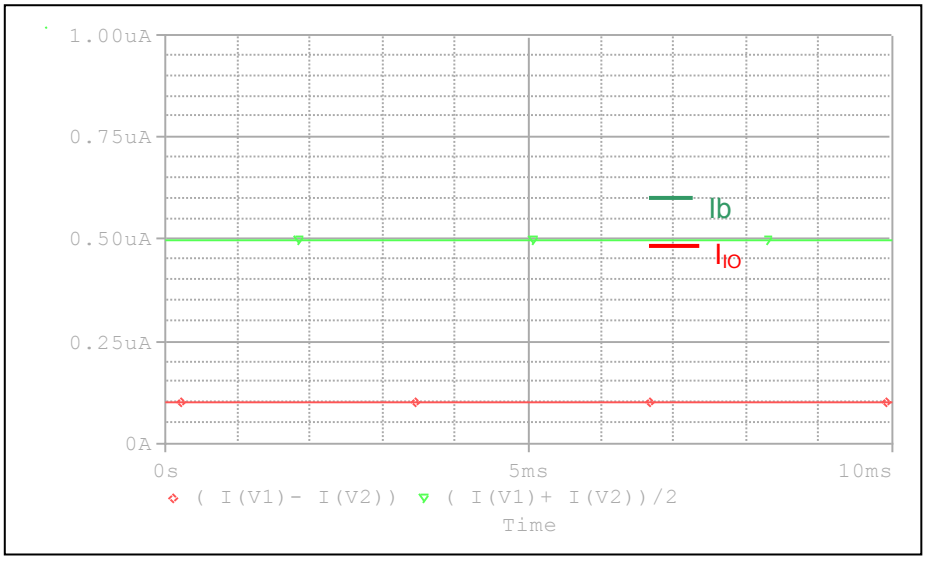
Av = 3.5070 / 17.499u

Comparison Table

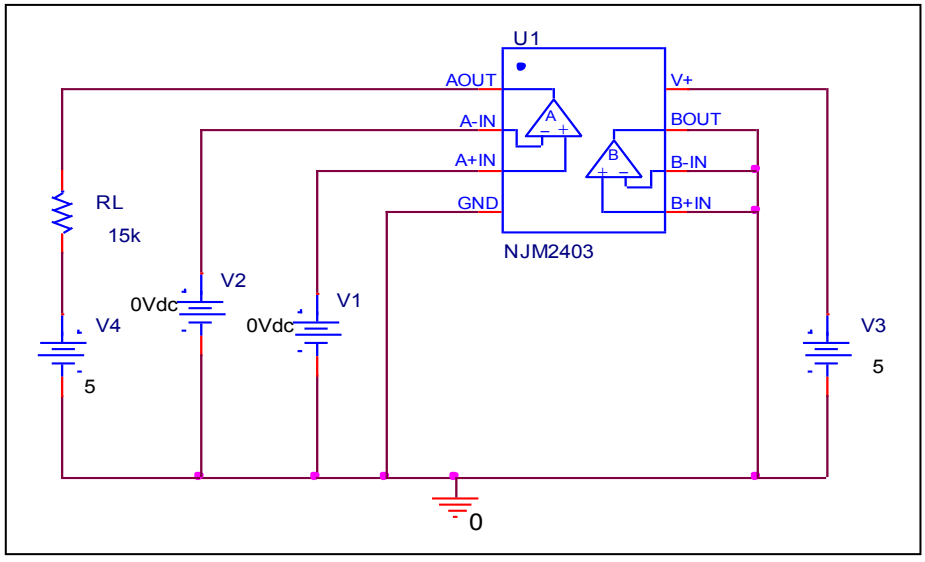
R_L = 15kΩ	Measurement	Simulation	%Error
Av (V/mV)	200	200.411	0.206

Input Bias Current Characteristics

Simulation result



Evaluation Circuit



Comparison Table

	Measurement	Simulation	% Error
Ib (nA)	500	499.852	-0.030
I_{IO} (nA)	100	99.714	-0.286