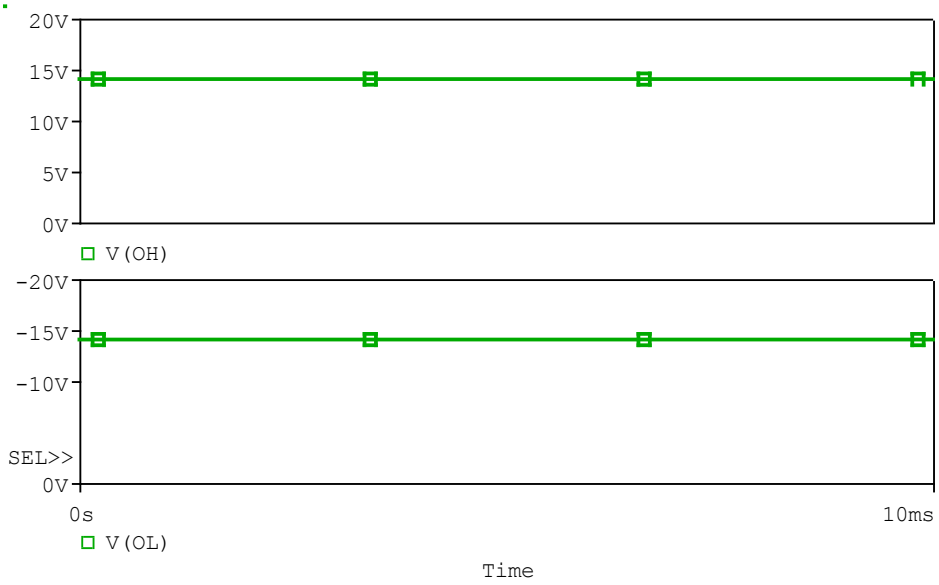
Device Modeling Report

COMPONENTS: OPERATIONAL AMPLIFIER
PART NUMBER: BA4558R
MANUFACTURER: ROHM CO., LTD.

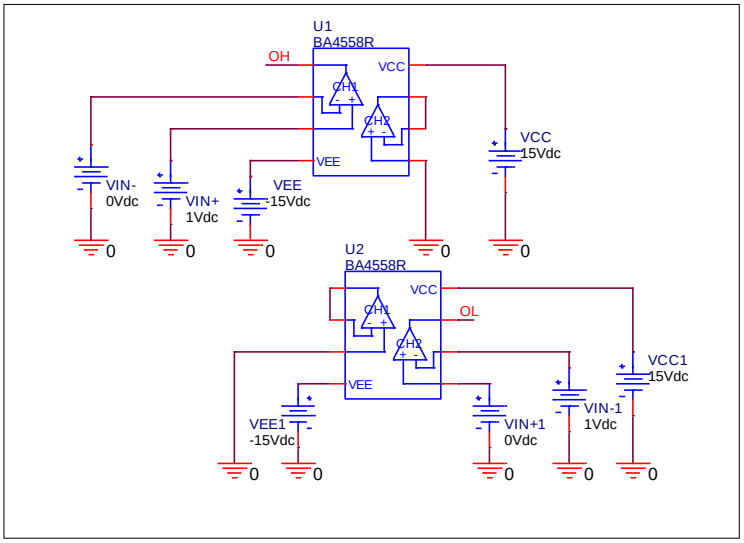
Bee Technologies Inc.

Output Voltage Swing

Simulation result



Evaluation circuit

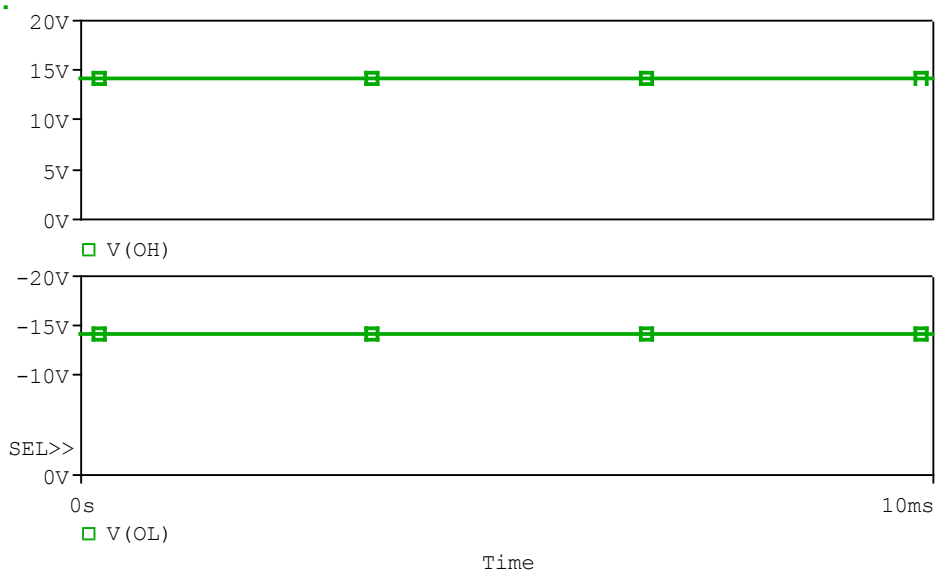


Comparison table

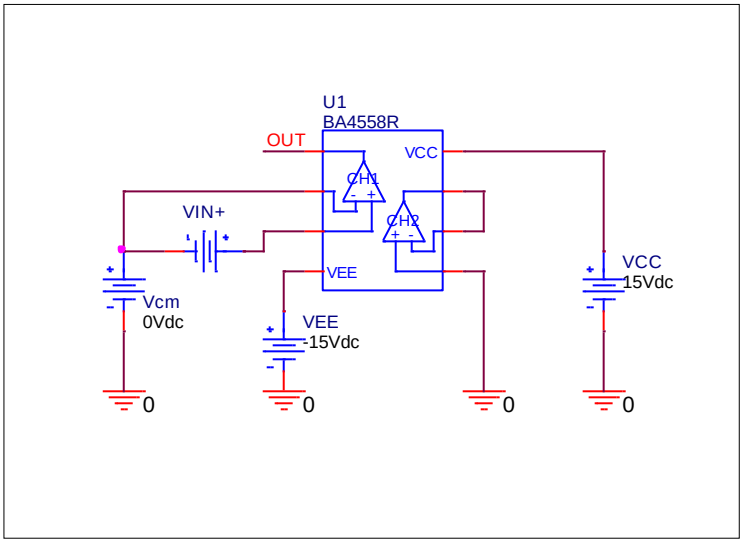
Parameter	Measurement	Simulation	%Error
VOH (V)	14.000	14.000	0.00
VOL (V)	-14.000	-14.000	0.00

Input Offset Voltage

Simulation result



Evaluation circuit

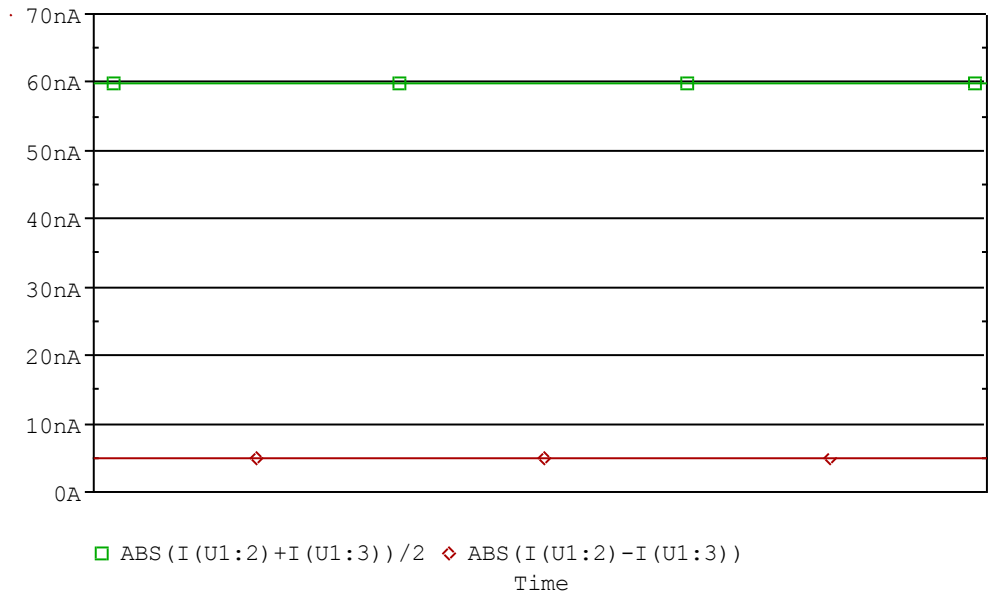


Comparison table

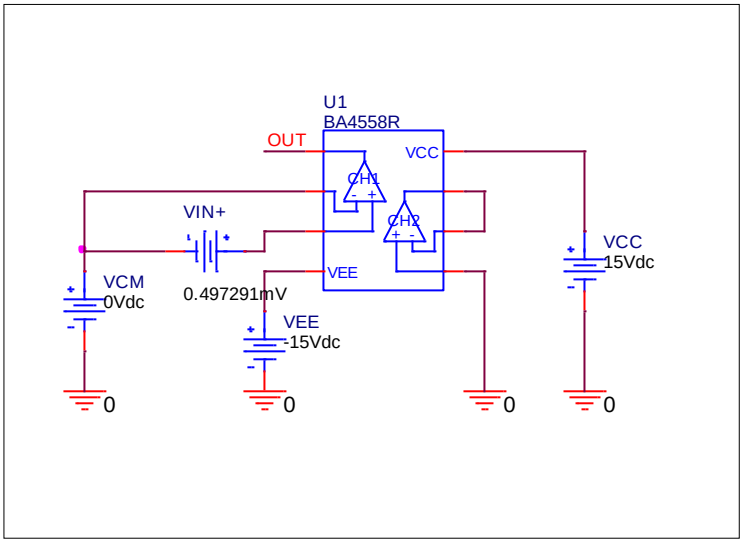
Parameter	Measurement	Simulation	%Error
Vio (mV)	0.500	0.497	-0.54

Input Current Ib, Ibos

Simulation result



Evaluation circuit

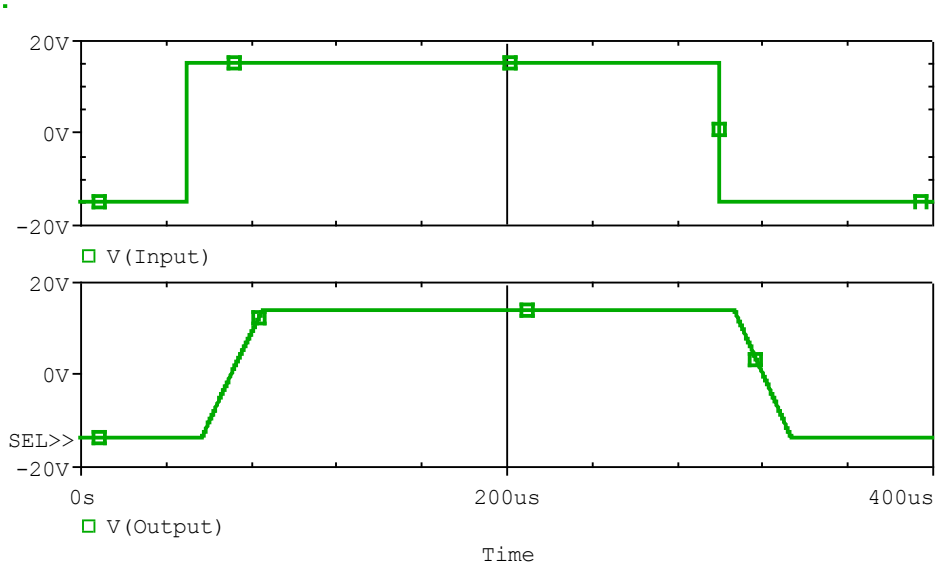


Comparison table

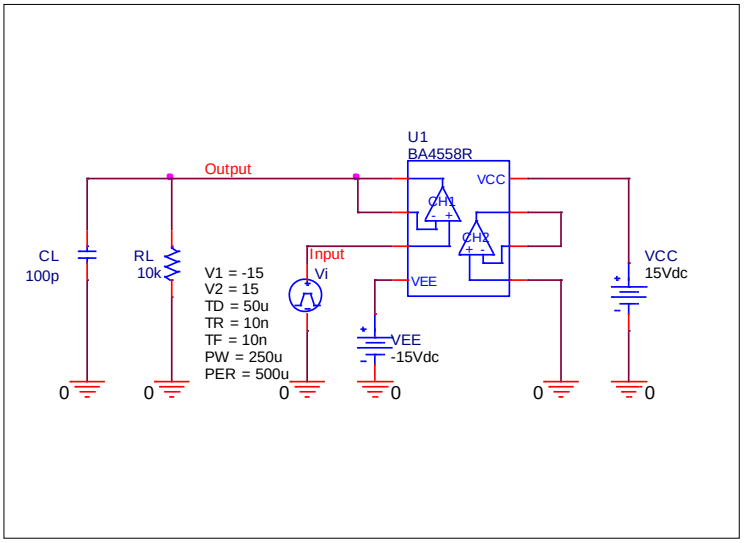
Parameter	Measurement	Simulation	%Error
Iio (nA)	5.000	5.019	0.38
Ib (nA)	60.000	59.800	-0.33

Slew Rate

Simulation result



Evaluation circuit

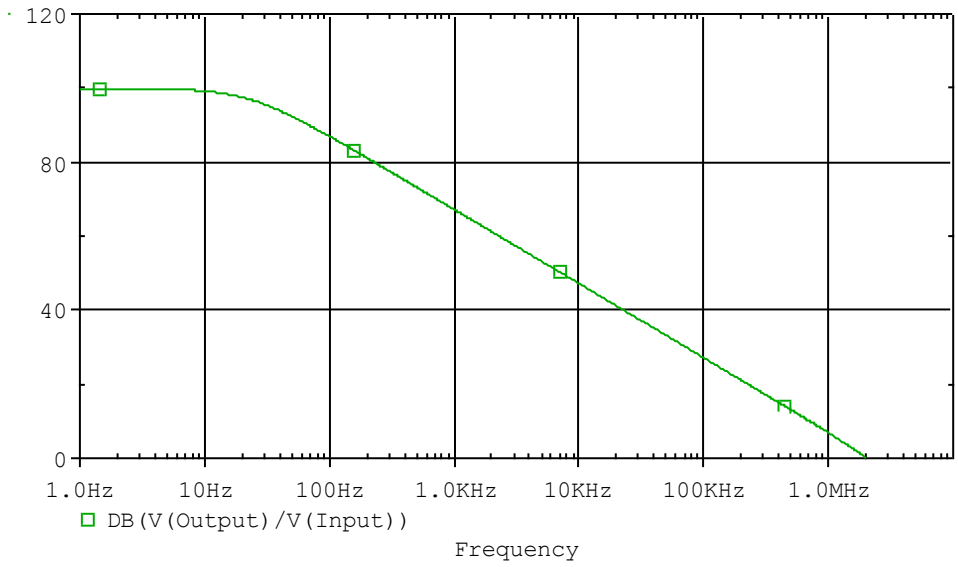


Comparison table

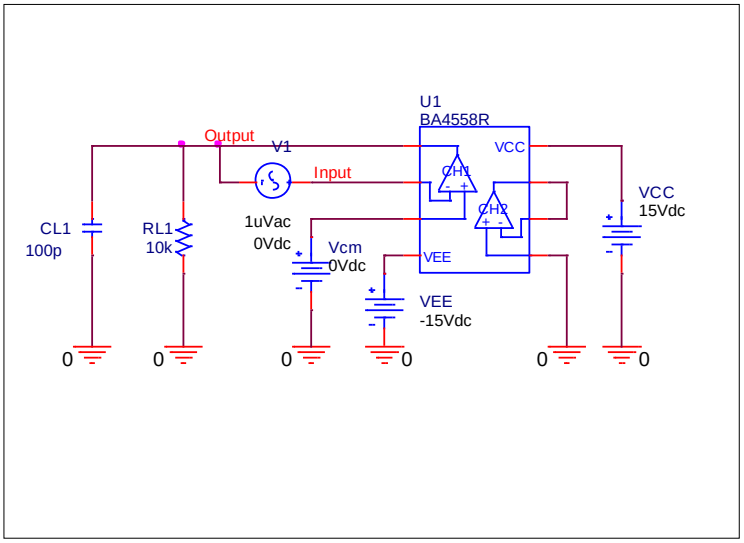
Parameter	Measurement	Simulation	%Error
Slew Rate (V/us)	**1.000**	**0.965**	**-3.50**

Open loop voltage gain

Simulation result



Evaluation circuit

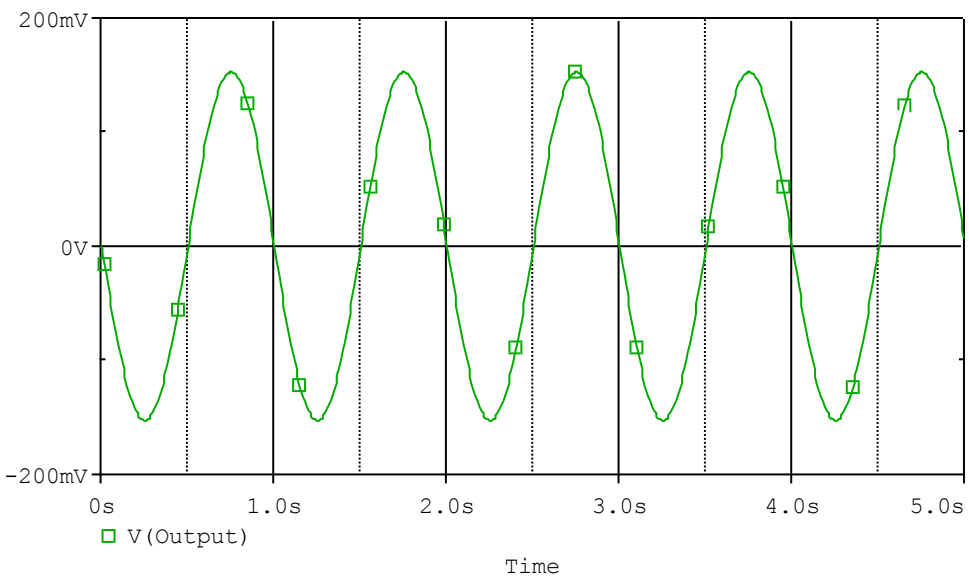


Comparison table

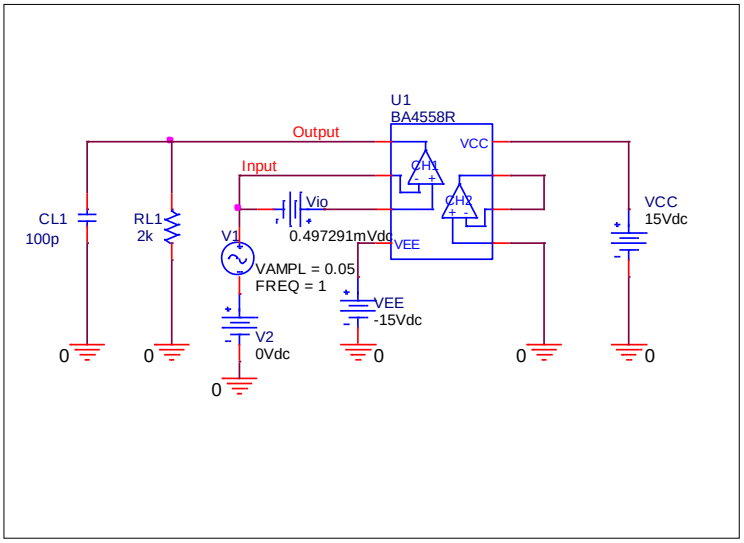
Parameter	Measurement	Simulation	%Error
Ft (MHz)	2.000	2.029	1.45
AV (dB)	100.000	99.906	-0.09

Common-mode rejection voltage gain

Simulation result



Evaluation circuit



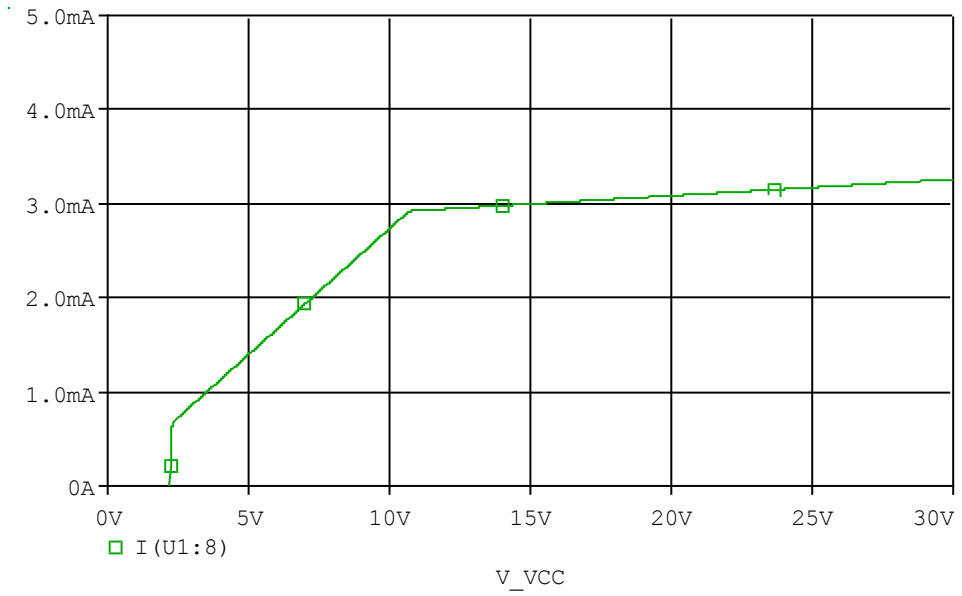
Comparison table

Common mode gain = 0.003049 V/mV
CMRR = 20log(100/0.003049) = 90.331

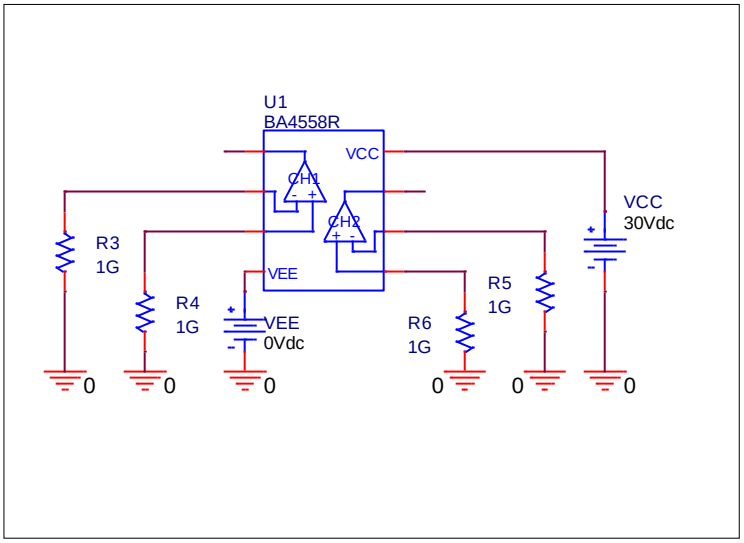
Parameter	Measurement	Simulation	%Error
CMRR(dB)	**90.000**	**90.331**	**0.37**

Supply Current

Simulation result



Evaluation circuit

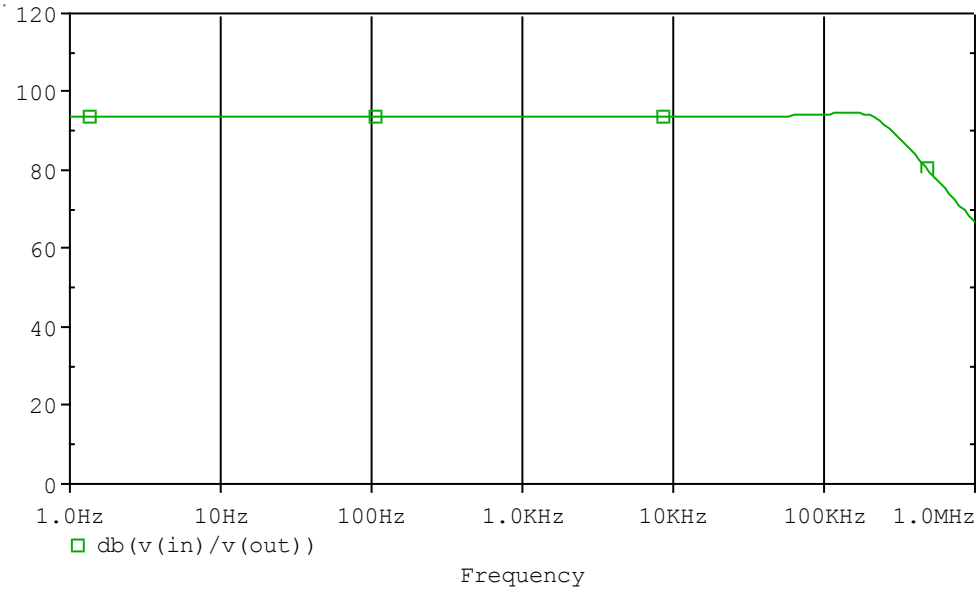


Comparison table

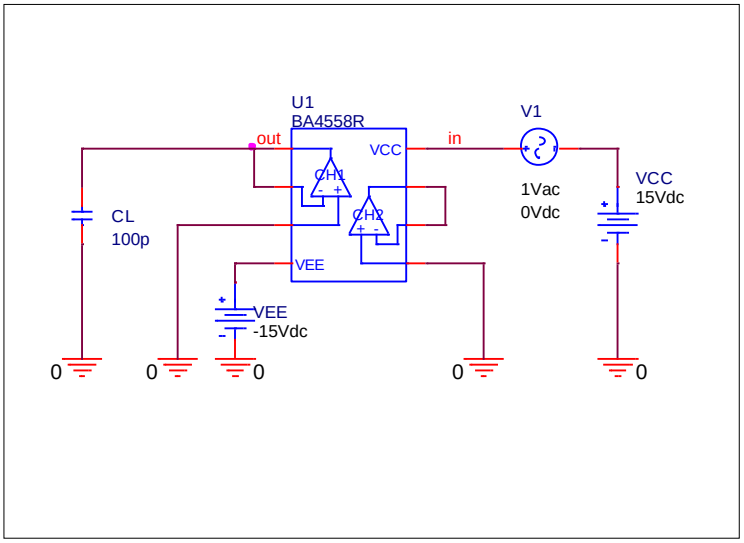
Parameter	Measurement	Simulation	%Error
ICC (mA)	3.250	3.258	0.25

Power supply rejection ration

Simulation result



Evaluation circuit

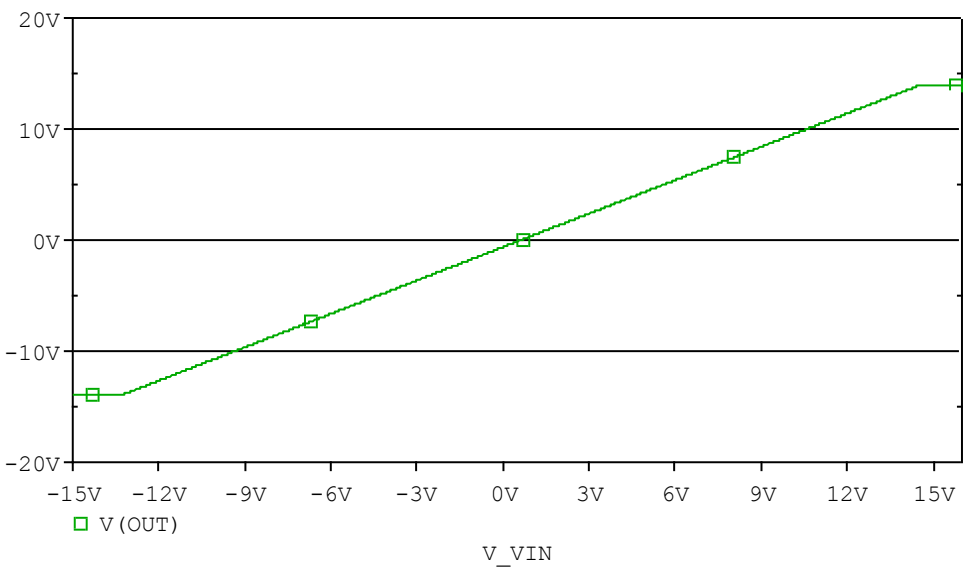


Comparison table

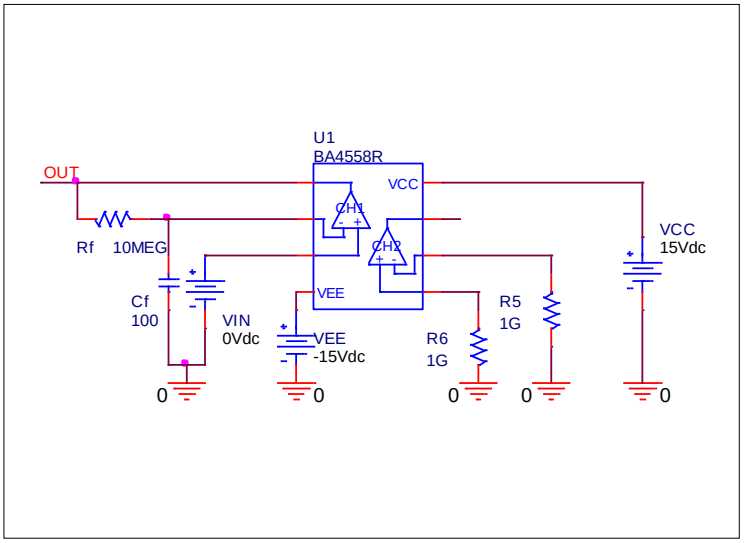
Parameter	Measurement	Simulation	%Error
PSRR (dB)	**90.000**	**93.602**	**4.00**

Input common-mode voltage range

Simulation result



Evaluation circuit

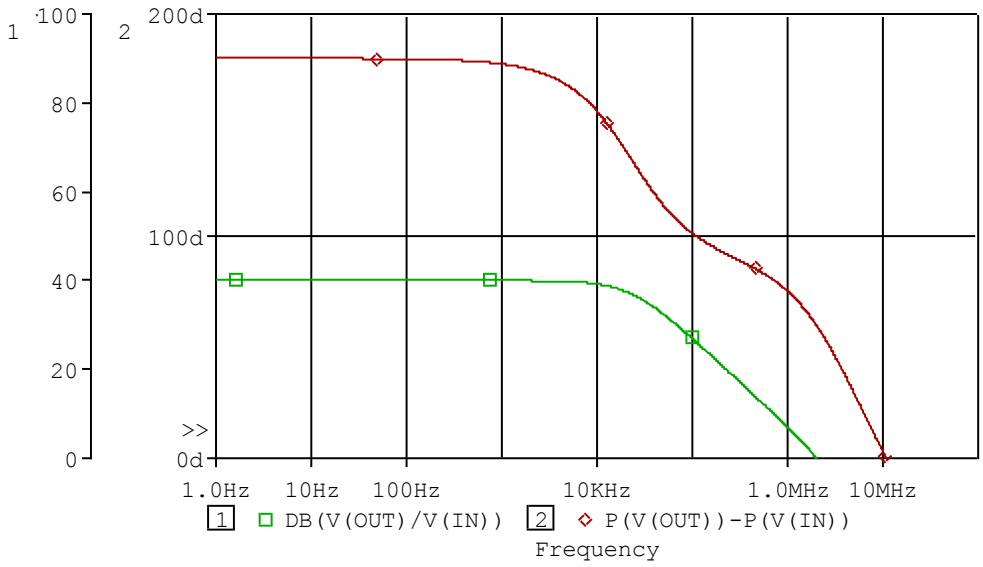


Comparison table

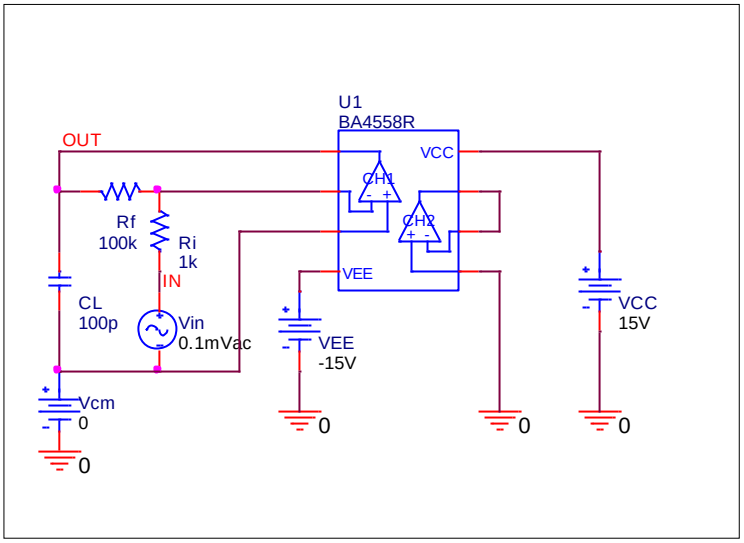
Parameter	Measurement	Simulation	%Error
Vicm (V)	28.000	28.075	0.27

Gain Bandwidth Product

Simulation result



Evaluation circuit



Comparison table

VCC=15[V], VEE=-15[V], Av=40[dB]

Parameter	Measurement	Simulation	%Error
Ft (MHz)	**2.000**	**2.027**	**1.35**
Phase margin θ (°)	**60.000**	**59.619**	**-0.64**