

Device Modeling Report

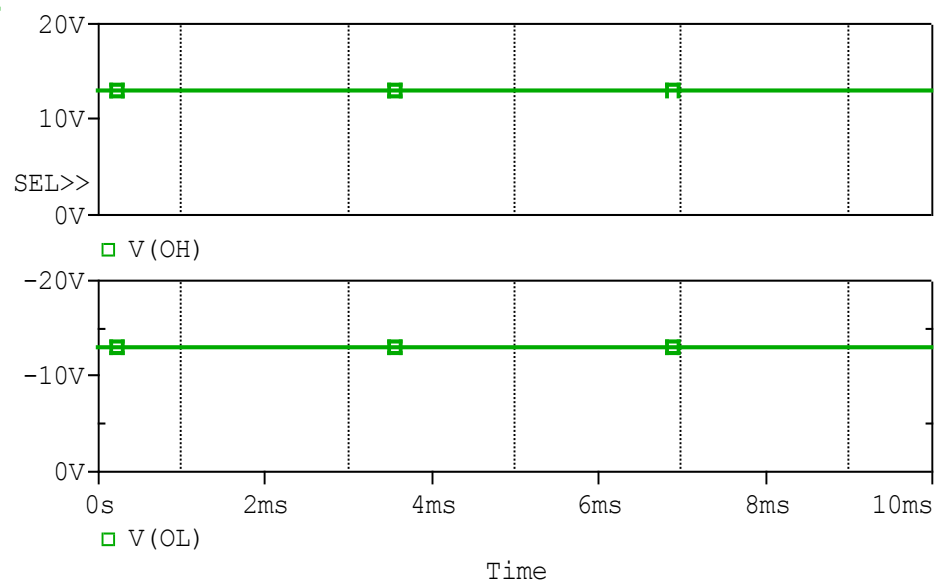
COMPONENTS: OPERATIONAL AMPLIFIER
PART NUMBER: BA15532F
MANUFACTURER: ROHM CO., LTD.



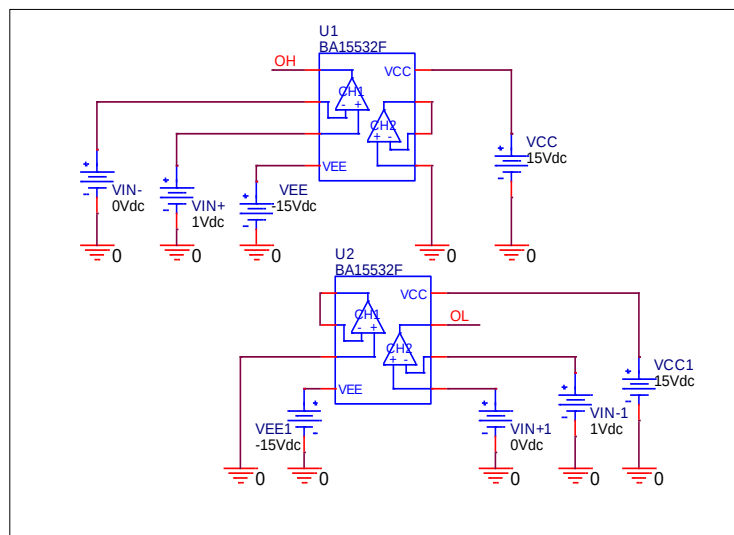
Bee Technologies Inc.

Output Voltage Swing

Simulation result



Evaluation circuit

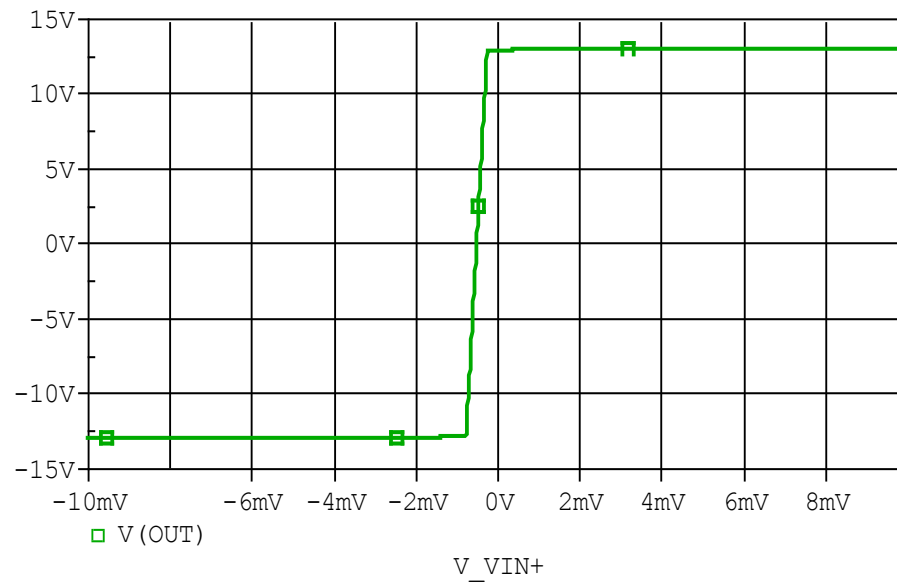


Comparison table

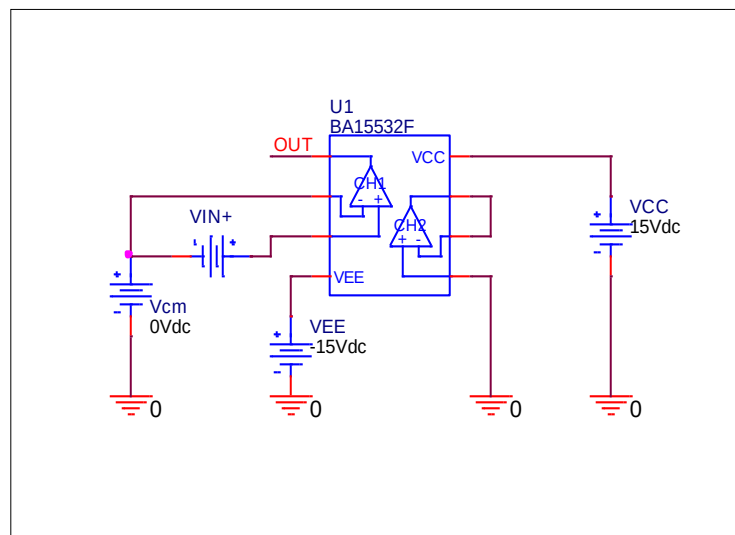
Parameter	Measurement	Simulation	%Error
VOH (V)	13.000	13.001	0.01
VOL (V)	-13.000	-13.001	0.01

Input Offset Voltage

Simulation result



Evaluation circuit

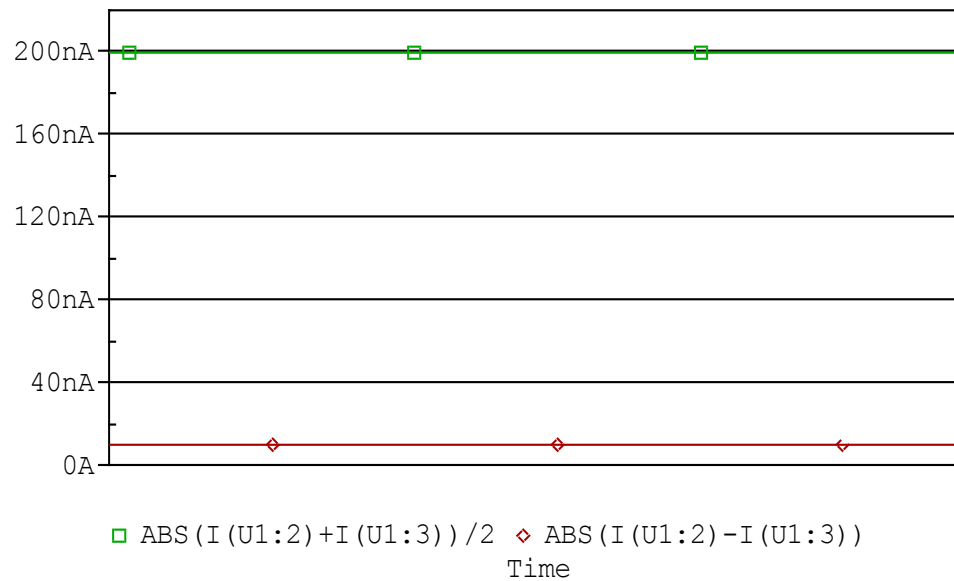


Comparison table

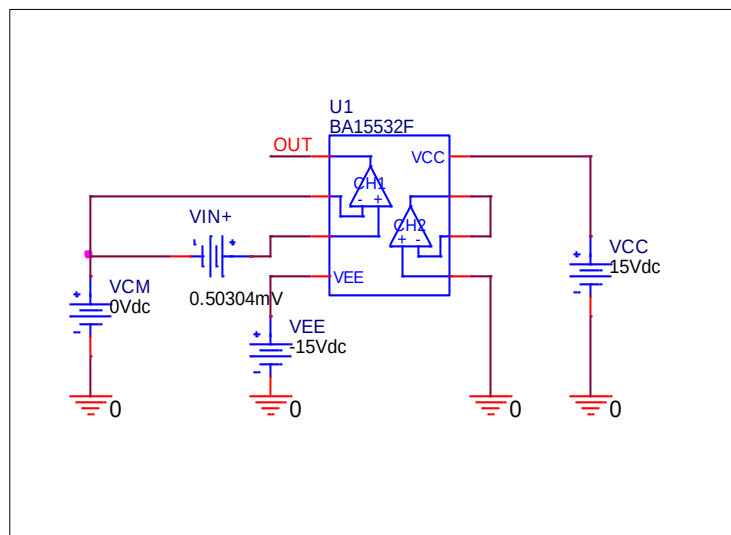
Parameter	Measurement	Simulation	%Error
$ V_{io} $ (mV)	0.500	0.503	0.60

Input Current Ib, Ibos

Simulation result



Evaluation circuit

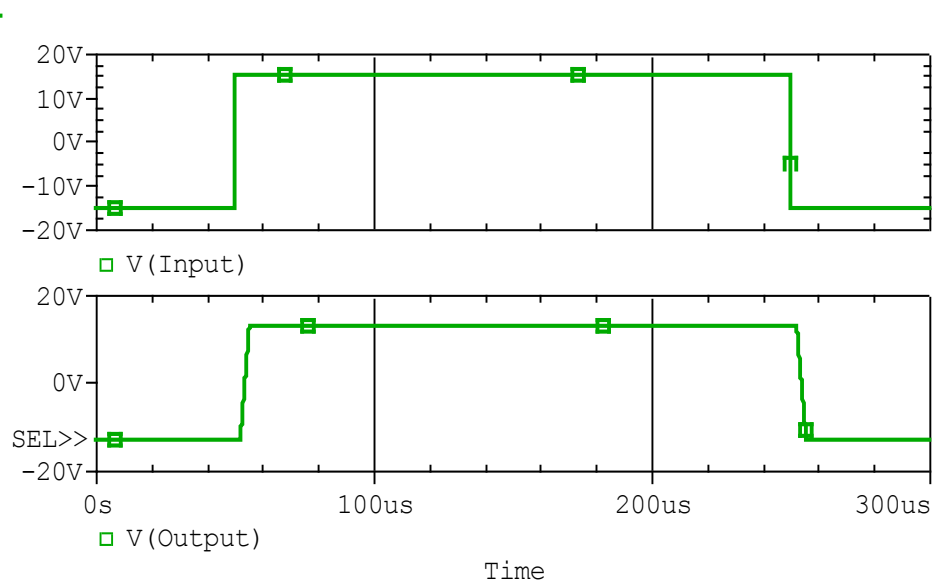


Comparison table

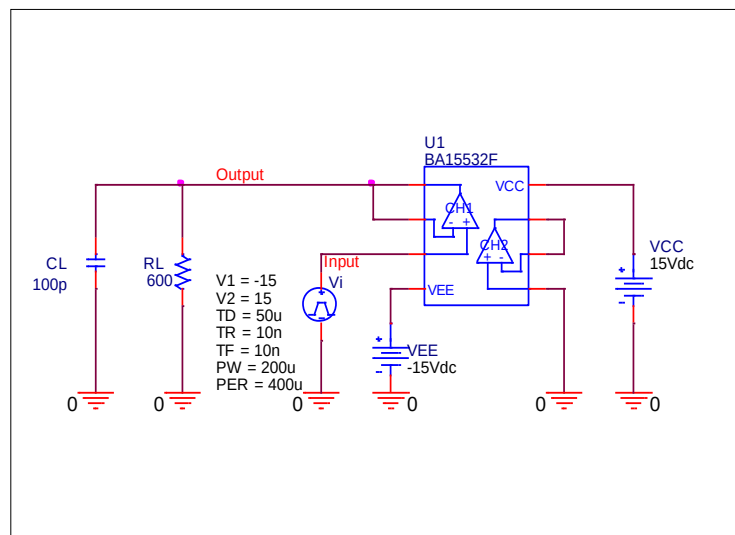
Parameter	Measurement	Simulation	%Error
Iio (nA)	10.000	10.127	1.27
Ib (nA)	200.000	199.230	-0.39

Slew Rate

Simulation result



Evaluation circuit

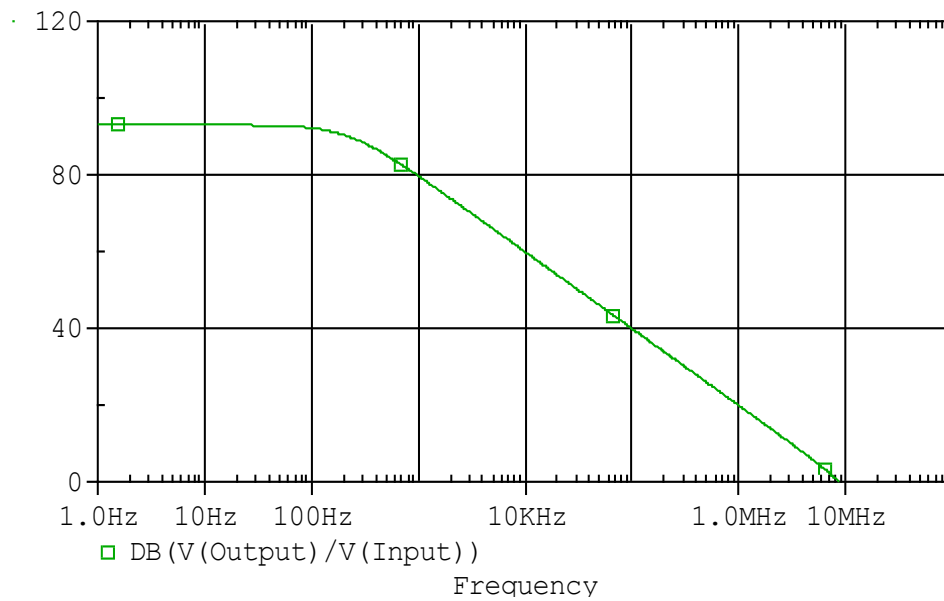


Comparison table

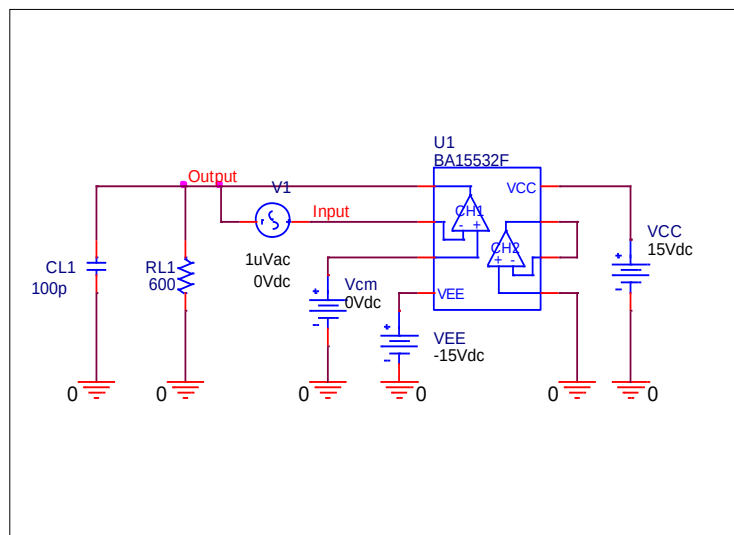
Parameter	Measurement	Simulation	%Error
Slew Rate (V/us)	8.000	7.866	-1.68

Open loop voltage gain

Simulation result



Evaluation circuit

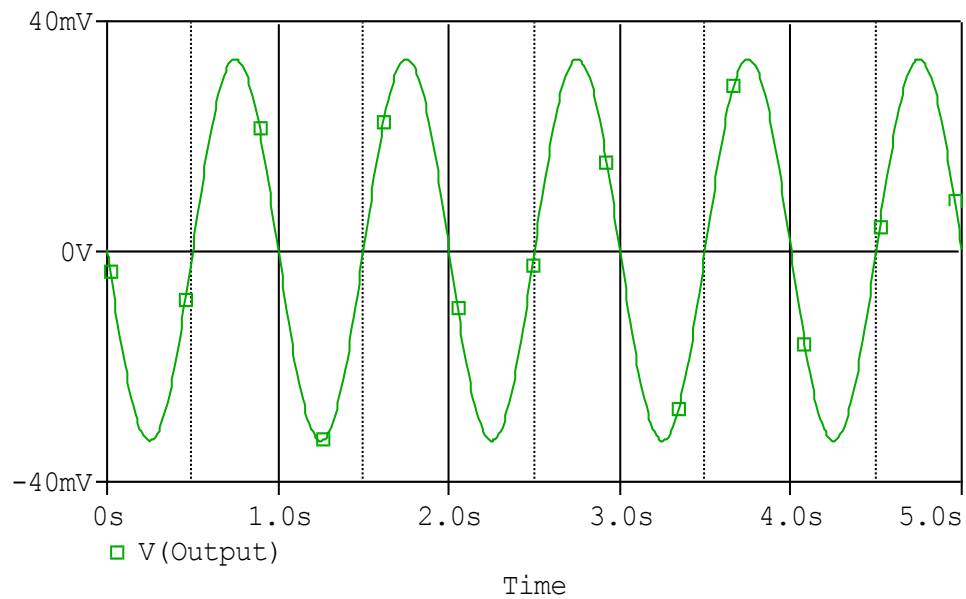


Comparison table

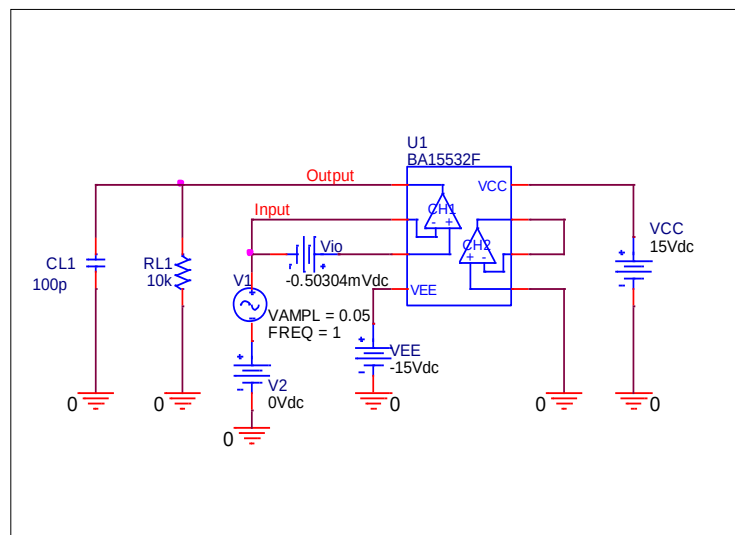
Parameter	Measurement	Simulation	%Error
Ft (MHz)	9.200	8.800	-4.35
AV (dB)	94.000	92.963	-1.10

Common-mode rejection voltage gain

Simulation result



Evaluation circuit



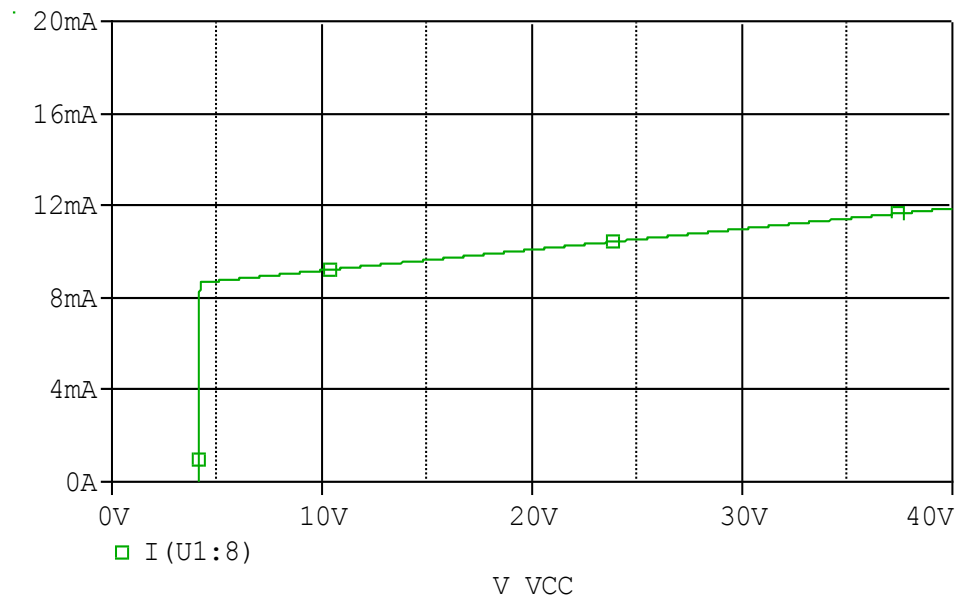
Comparison table

Common mode gain = 0.000663 V/mV
 $CMRR = 20\log(94/0.000663) = 103.030$

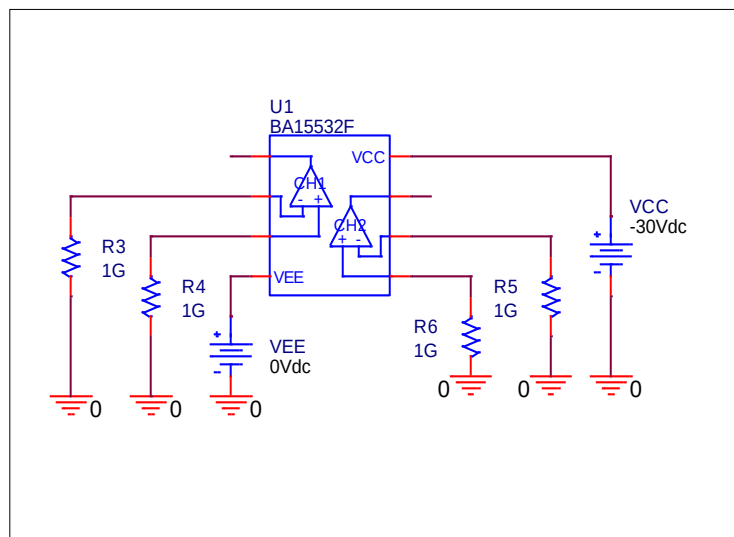
Parameter	Measurement	Simulation	%Error
CMRR(dB)	100.000	103.030	3.03

Supply Current

Simulation result



Evaluation circuit

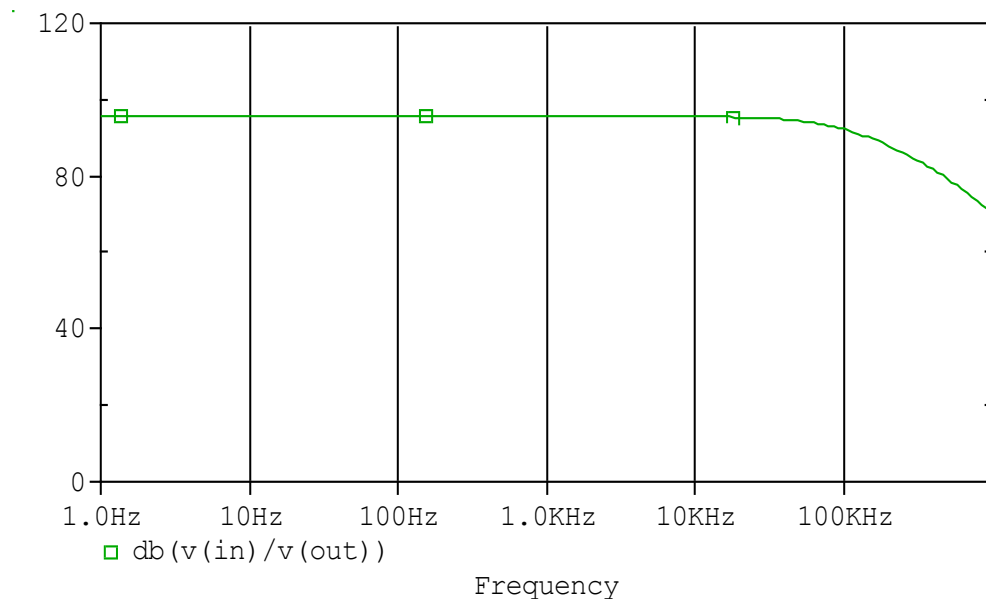


Comparison table

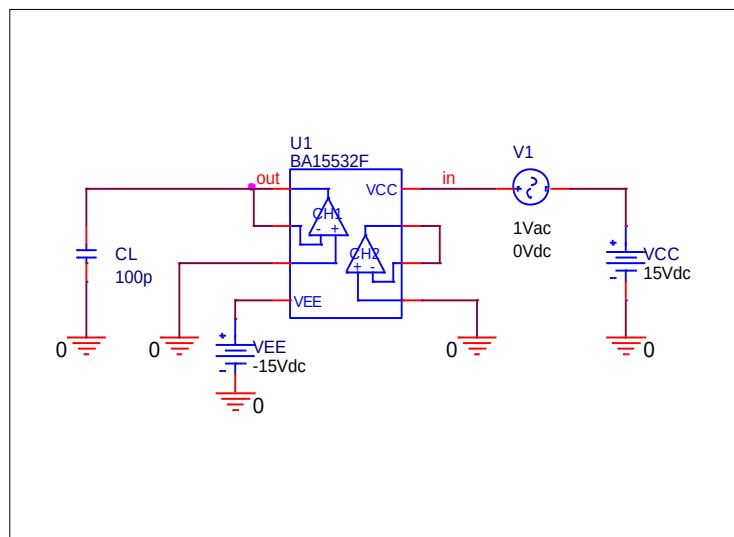
Parameter	Measurement	Simulation	%Error
ICC (mA)	11.000	10.981	-0.17

Power supply rejection ration

Simulation result



Evaluation circuit

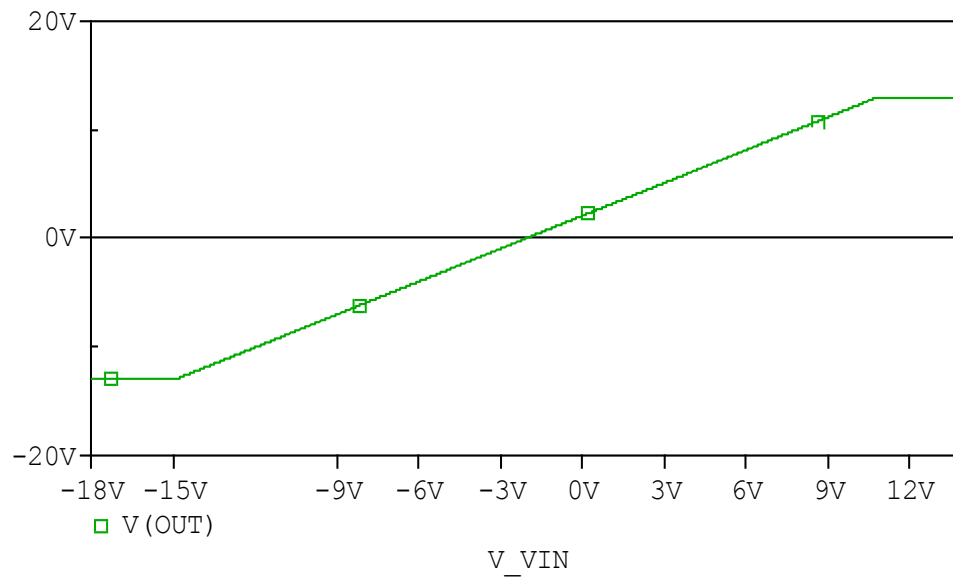


Comparison table

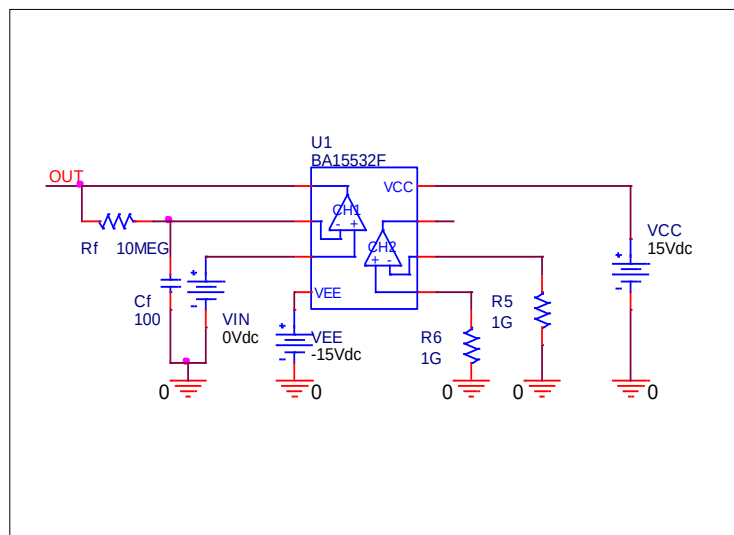
Parameter	Measurement	Simulation	%Error
PSRR (dB)	100.000	95.557	-4.44

Input common-mode voltage range

Simulation result



Evaluation circuit

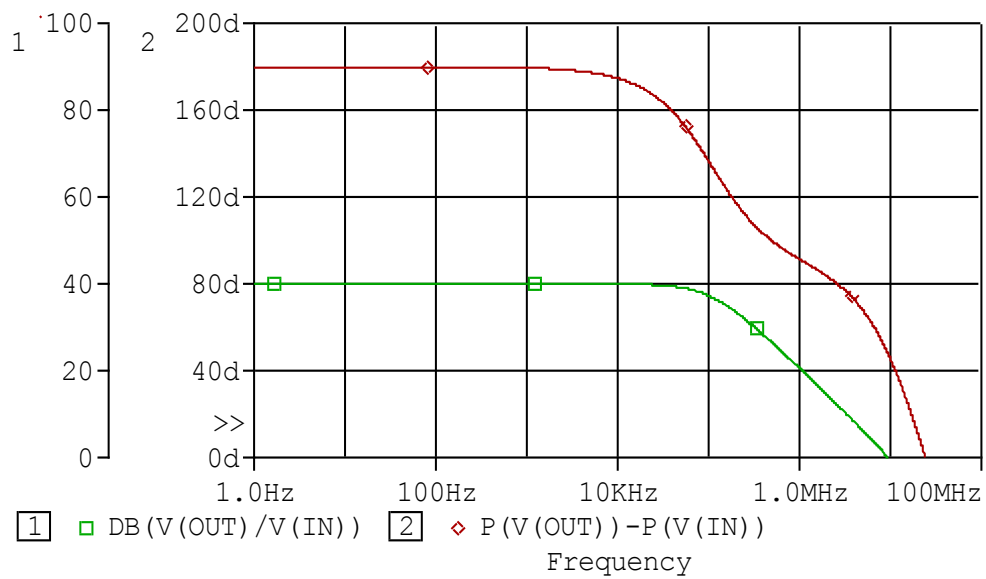


Comparison table

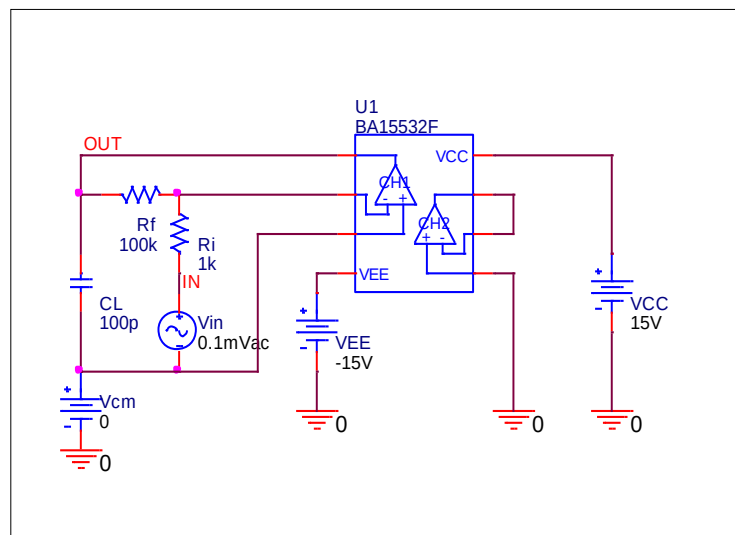
Parameter	Measurement	Simulation	%Error
V_{icm} (V)	26.000	25.938	-0.24

Gain Bandwidth Product

Simulation result



Evaluation circuit



Comparison table

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

Parameter	Measurement	Simulation	%Error
Ft (MHz)	9.200	9.291	0.99
Phase margin θ (°)	50.000	48.353	-3.29