

Device Modeling Report

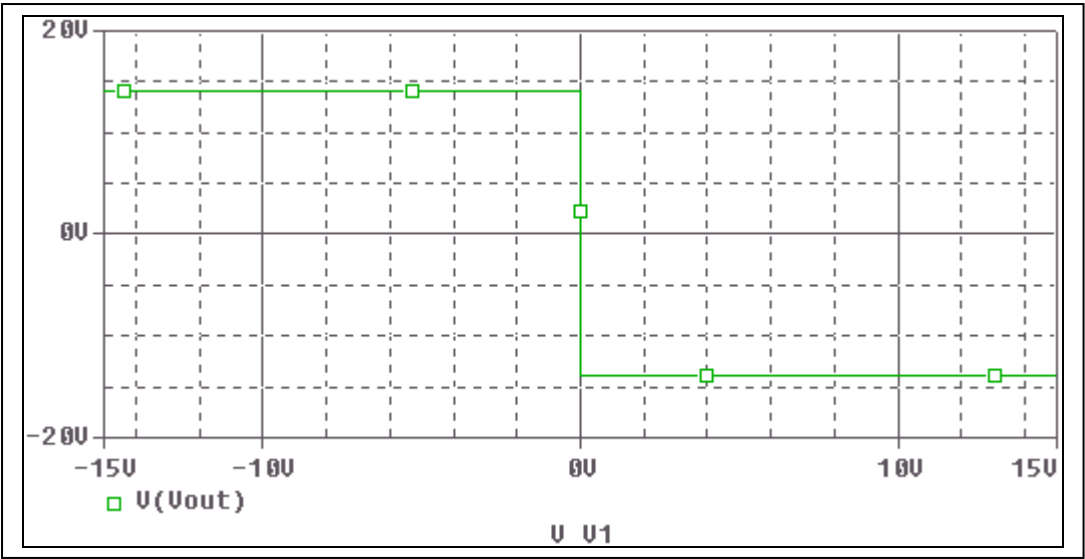
COMPONENTS: OPERATIONAL AMPLIFIER
PART NUMBER: MC33171
MANUFACTURER: STMicroelectronics



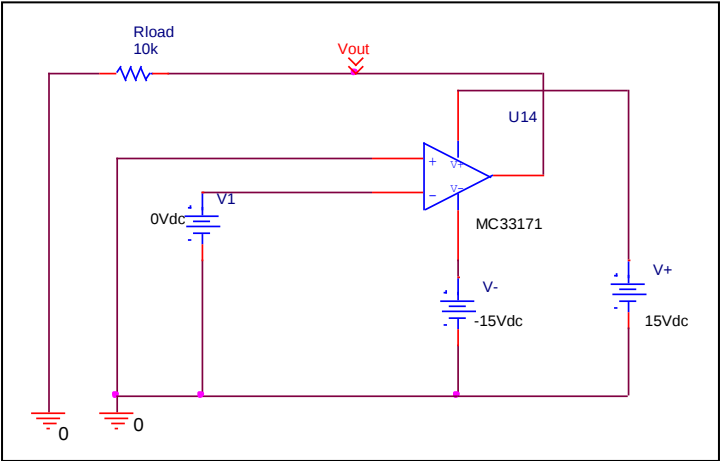
Bee Technologies Inc.

Output Voltage Swing, +Vout and –Vout

Simulation result



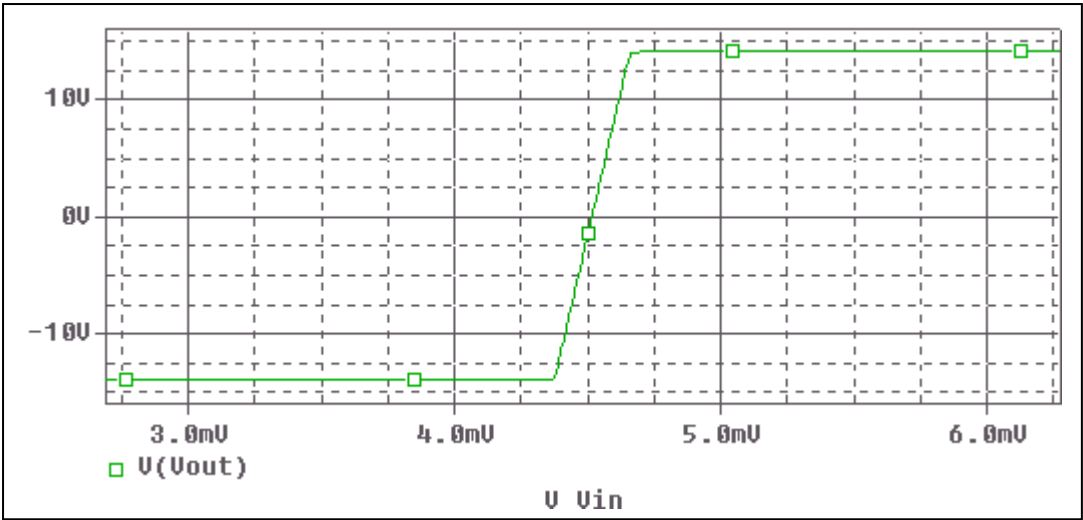
Evaluation circuit



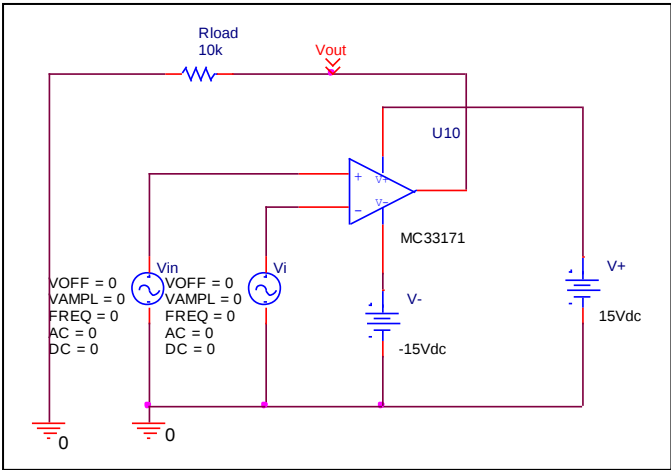
Output Voltage Swing	Data sheet	Simulation	%Error
+Vout(V)	+14.2	14.16	0.281
-Vout(V)	-14	13.96	0.285

Input Offset Voltage

Simulation result



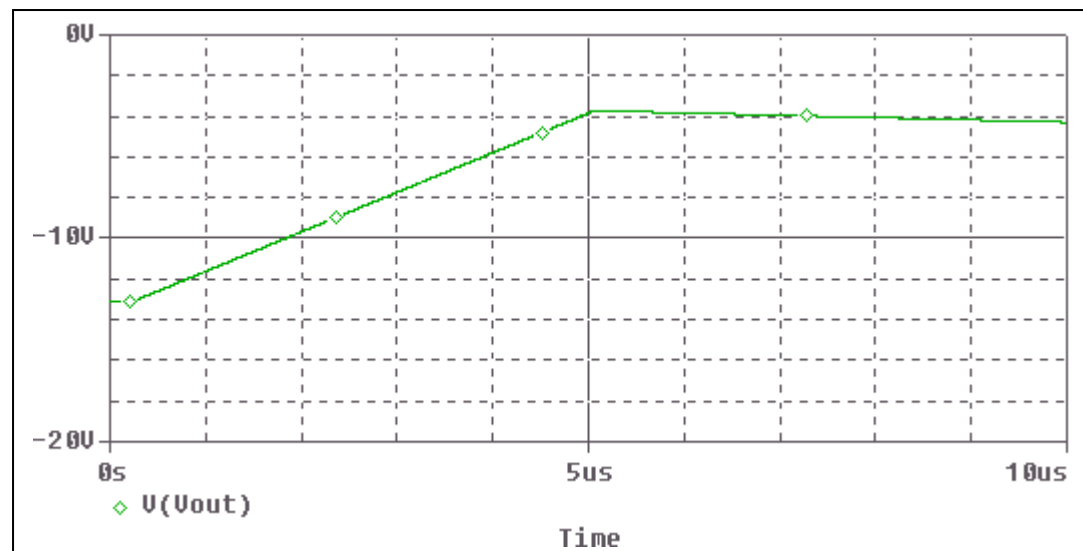
Evaluation circuit



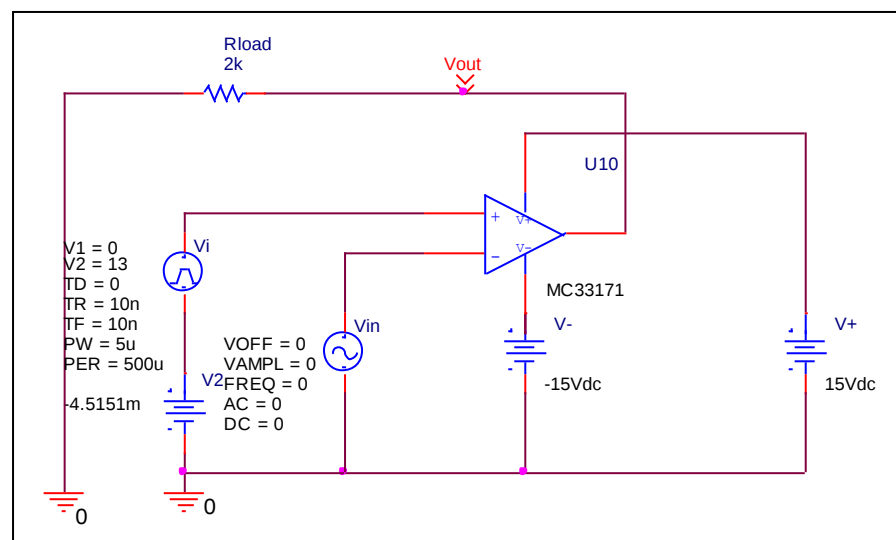
Vos	Measurement		Simulation		Error	
	4.5	mV	4.5151	mV	0.335	%

Slew Rate, +SR, -SR

Simulation result



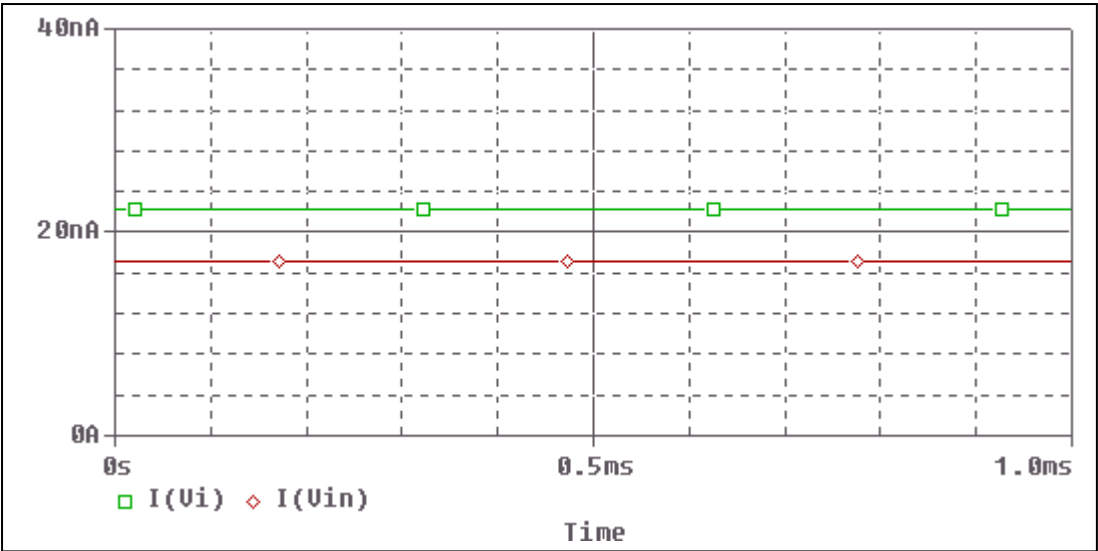
Evaluation circuit



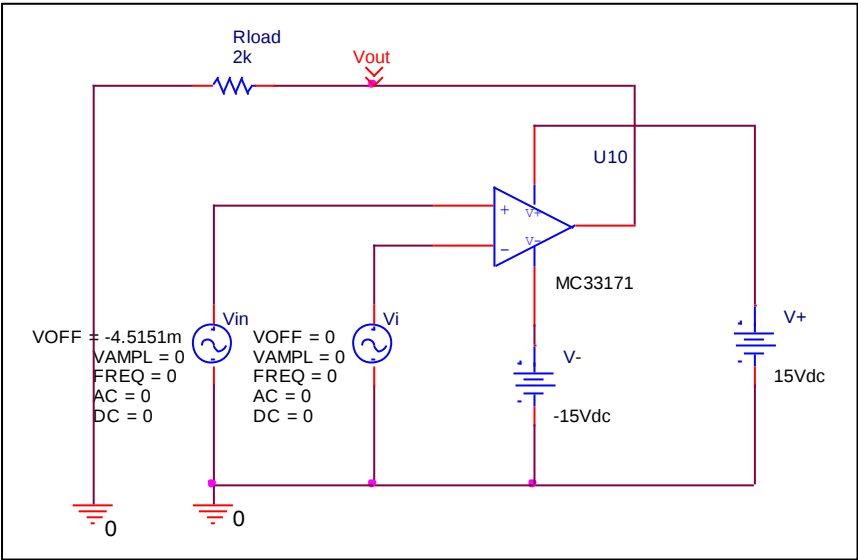
Slew Rate(v/us)	Data sheet	Simulation	%Error
	2V/us	1.94V/us	3

Input current Ib, Ibos

Simulation result



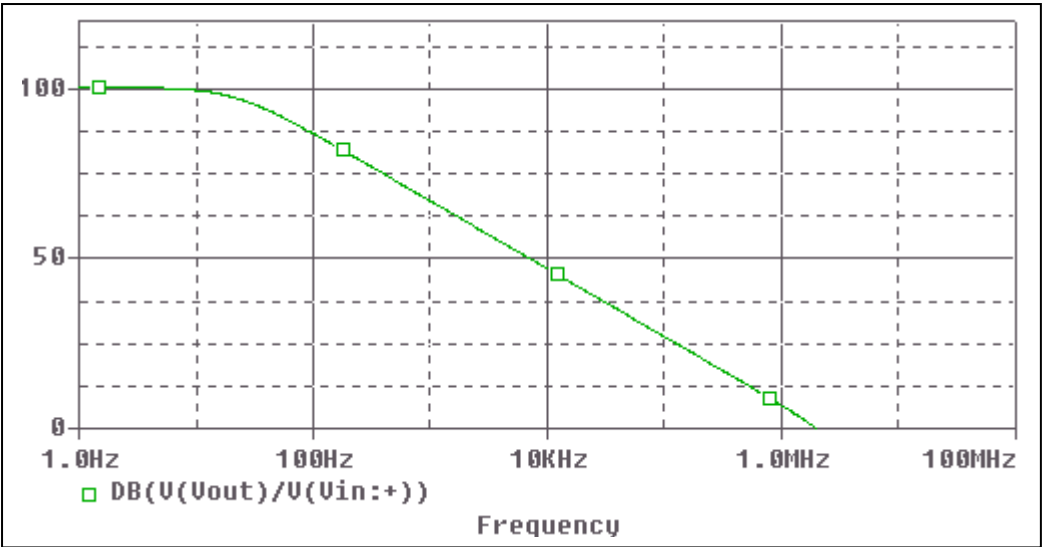
Evaluation circuit



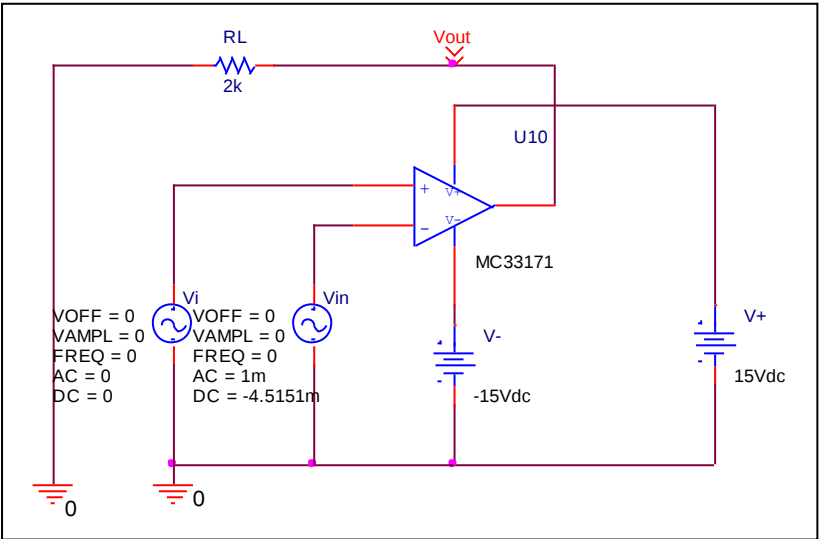
	Data sheet	Simulation	%Error
Ib(nA)	20	19.7	1.5
Ibos(nA)	5	5.046	0.92

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

Simulation result



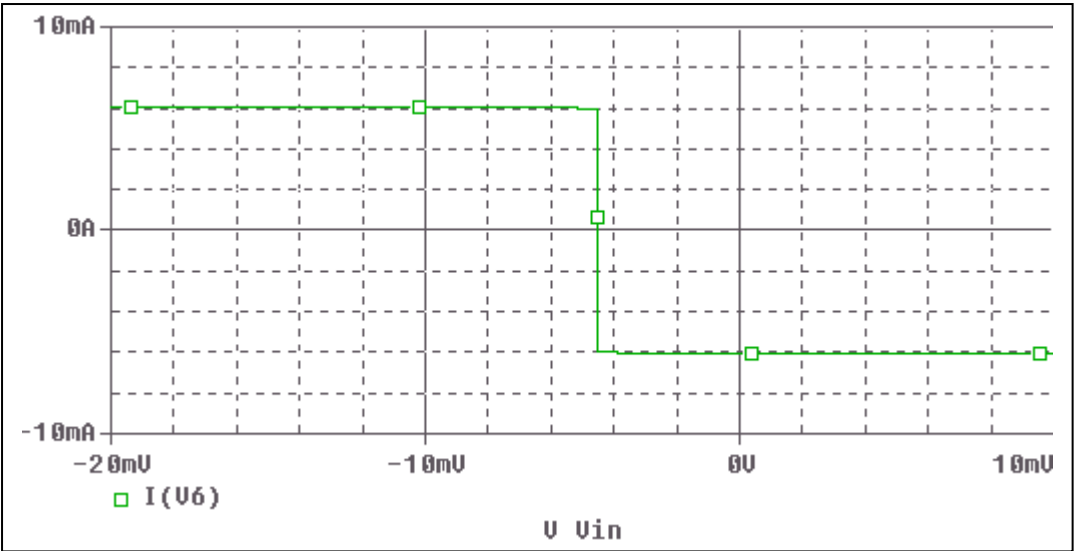
Evaluation circuit



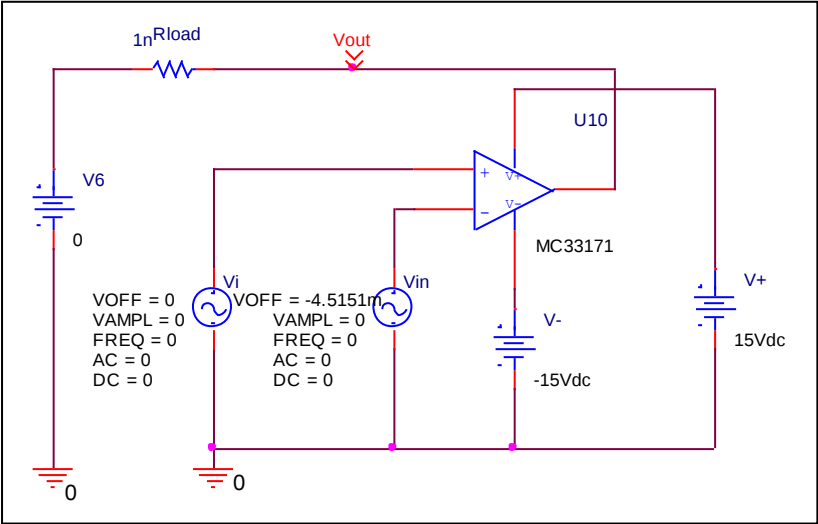
	Data sheet	Simulation	%Error
f-0dB(MHz)	2.1	2	4.76
Av-dc(dB)	100000	103514	3.514

Output Short Circuit Current - Ios

Simulation result



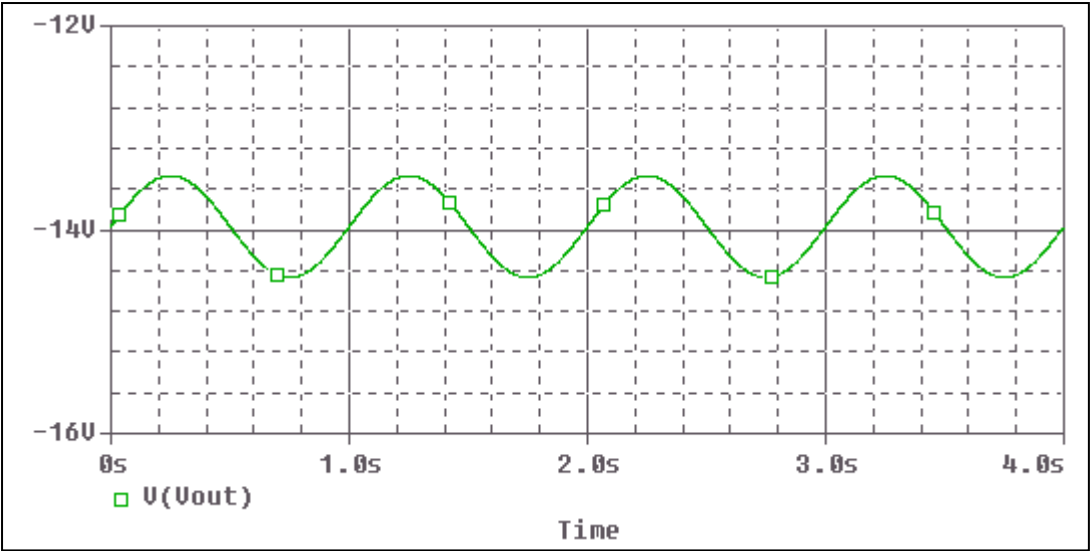
Evaluation circuit



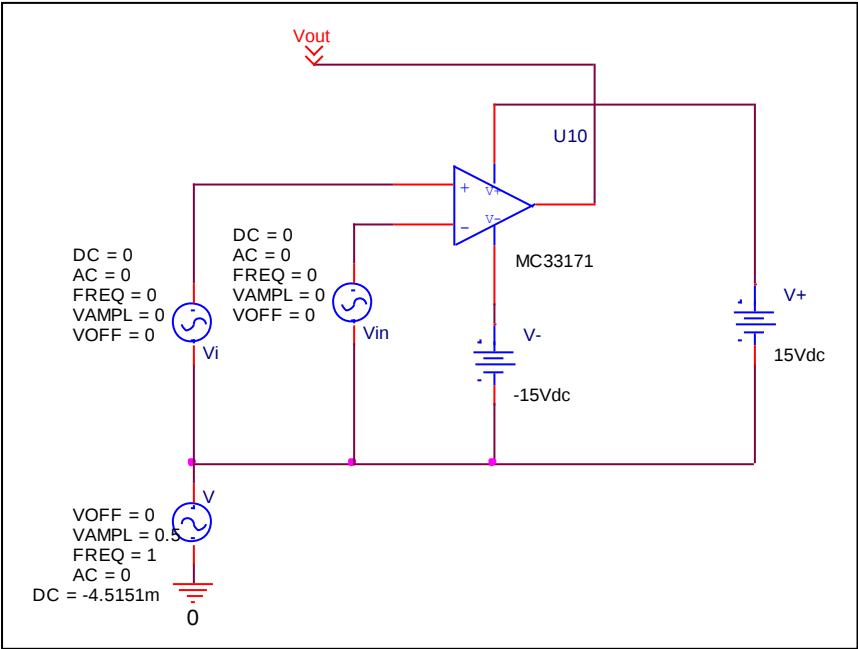
Short Circuit Current	Data sheet	Simulation	%Error
	6mA	6.077mA	1.283

Common-Mode Rejection Voltage gain

Simulation result



Evaluation circuit



Common mode gain=1/1
Common Mode Reject Ratio=103514/1=103514

CMRR	Data sheet	Simulation	%Error
	100000	103514	3.514