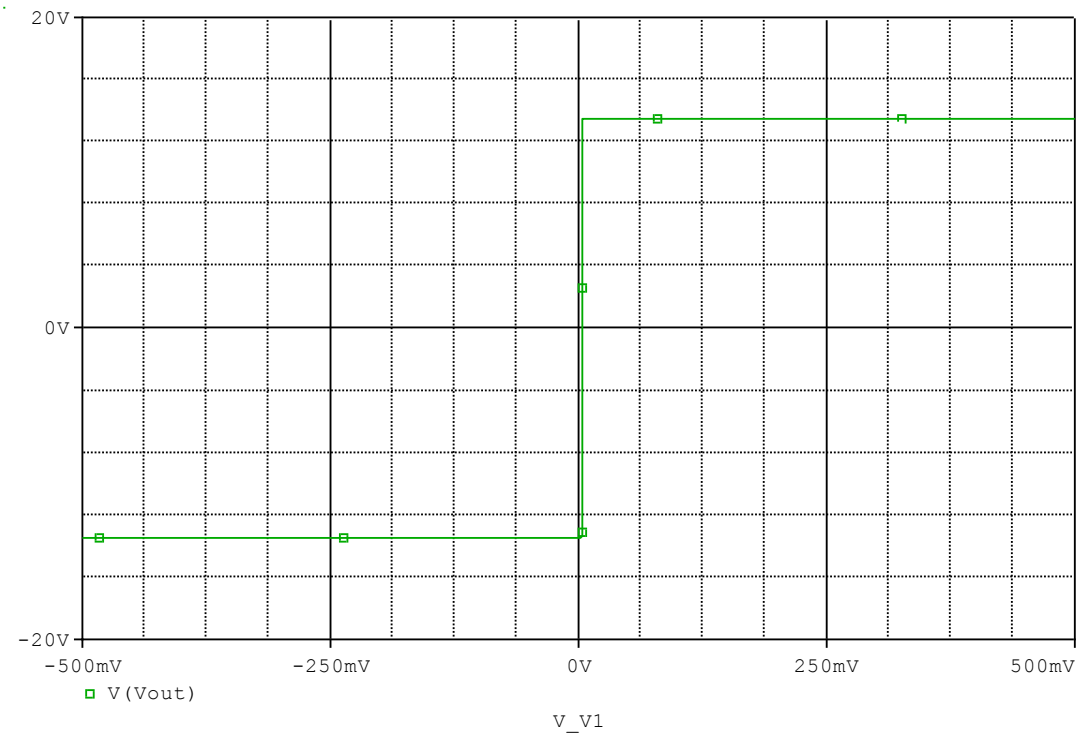
# Device Modeling Report

COMPONENTS: OPERATIONAL AMPLIFIER
PART NUMBER: UPC4071C
MANUFACTURER: NEC

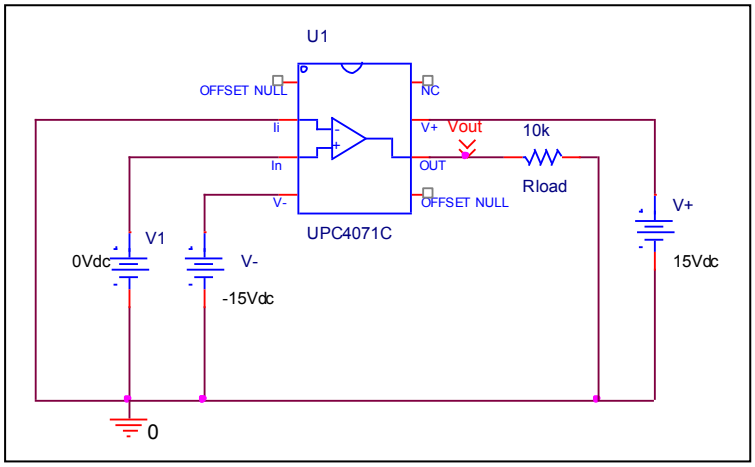

**Bee Technologies Inc.**

# Output Voltage Swing

## Simulation result




## Evaluation circuit

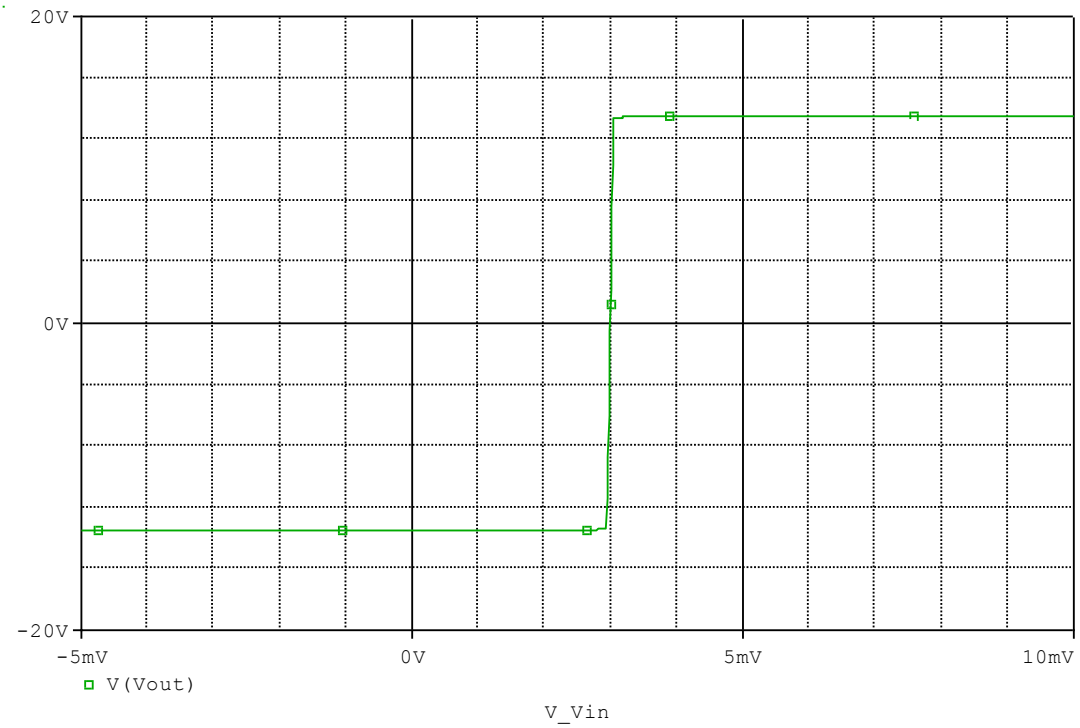



## Comparison table

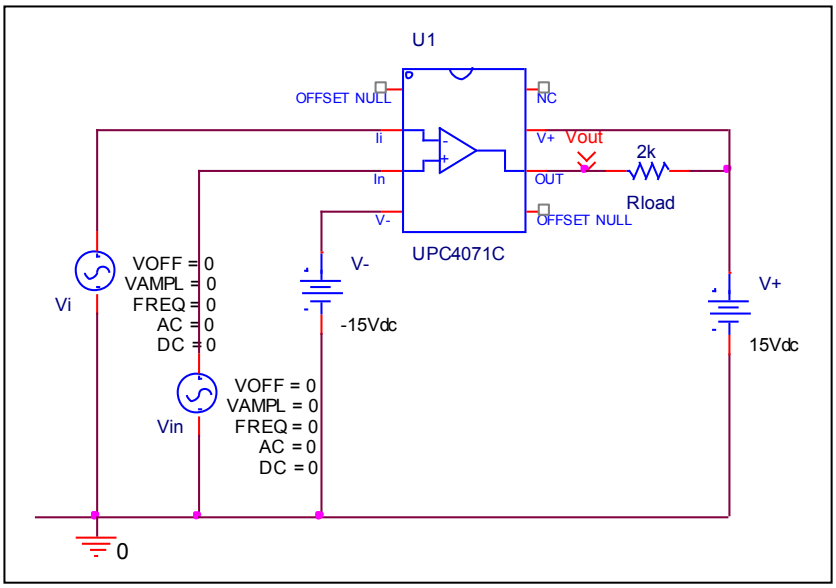
| Output Voltage Swing | Measurement | Simulation | %Error |
|---|---|---|---|
| **+Vout(V)** | 13.500 | 13.499 | -0.007 |
| **-Vout(V)** | -13.500 | -13.499 | -0.007 |

# Input Offset Voltage

## Simulation result




## Evaluation circuit

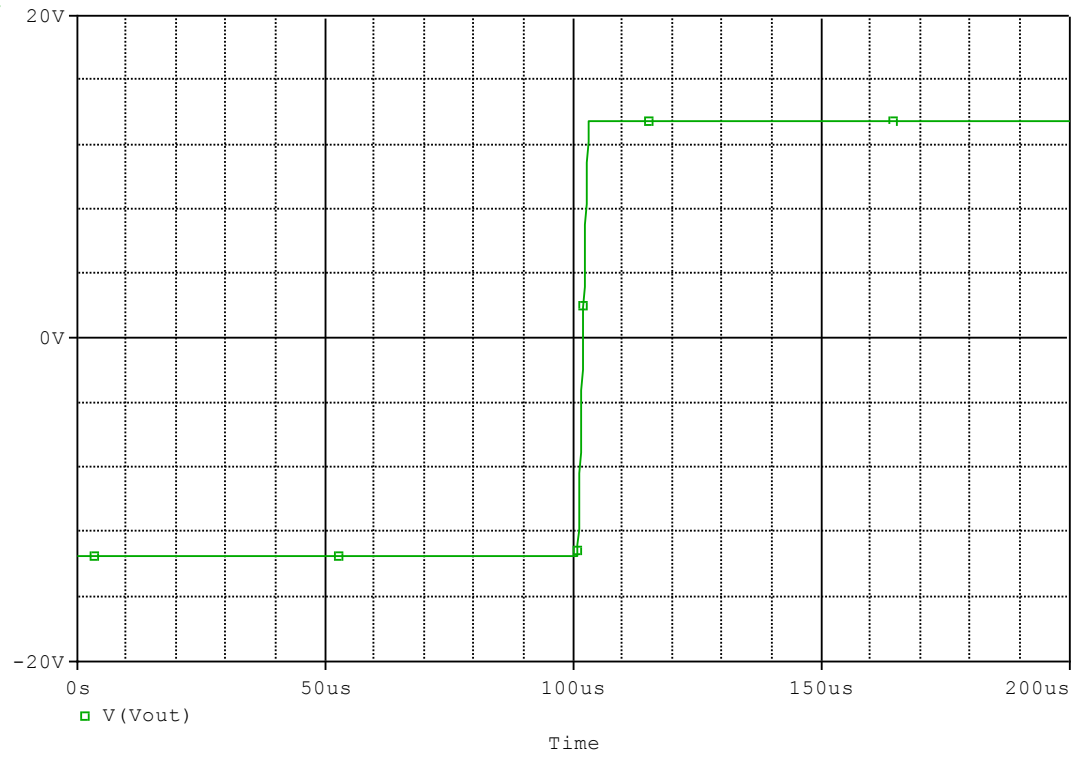



## Comparison table

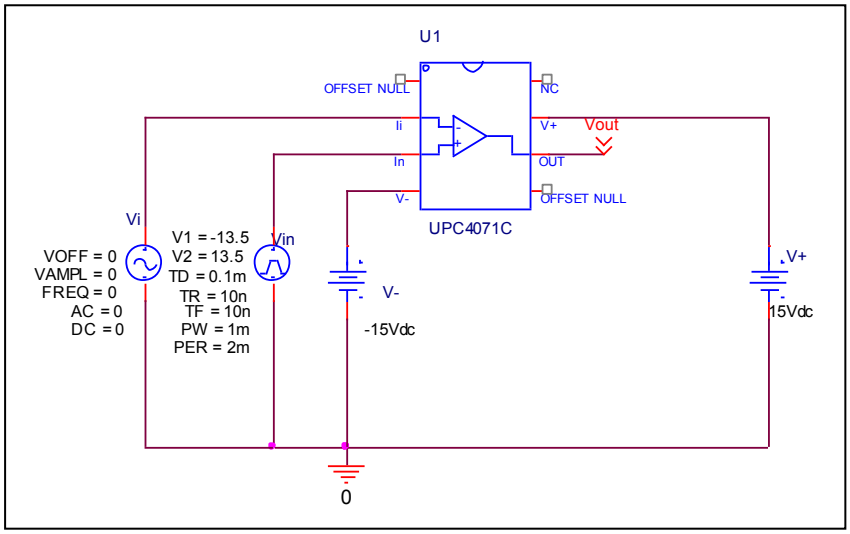
| Vos(mV) | Measurement | Simulation | %Error |
|---|---|---|---|
| | 3.000 | 2.992 | -0.260 |

## Slew Rate

Simulation result




Evaluation circuit

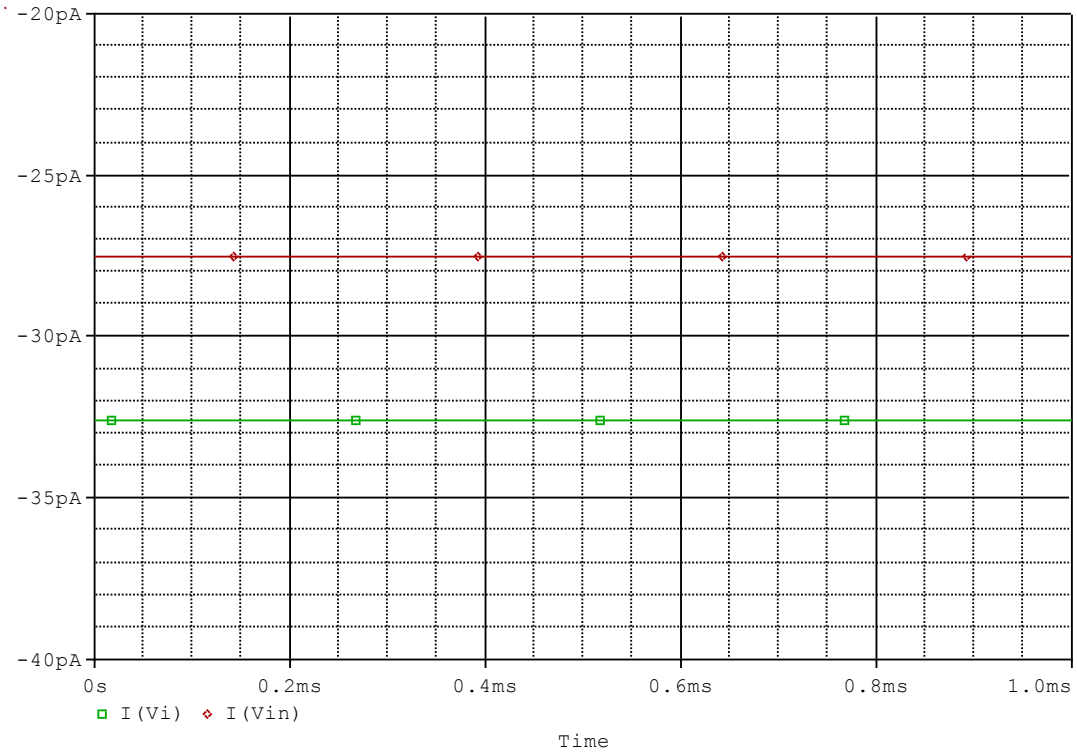



Comparison table

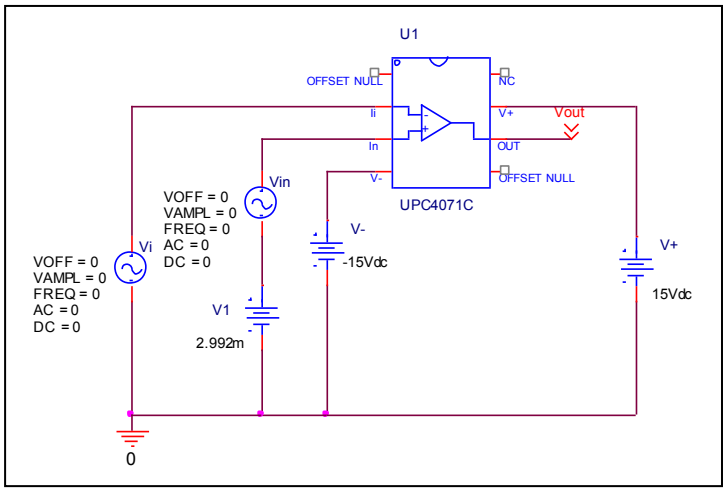
| Slew Rate(v/us) | Measurement | Simulation | %Error |
|---|---|---|---|
| | 13.000 | 12.820 | -1.385 |

# Input current Ib, Ibos

## Simulation result




## Evaluation circuit

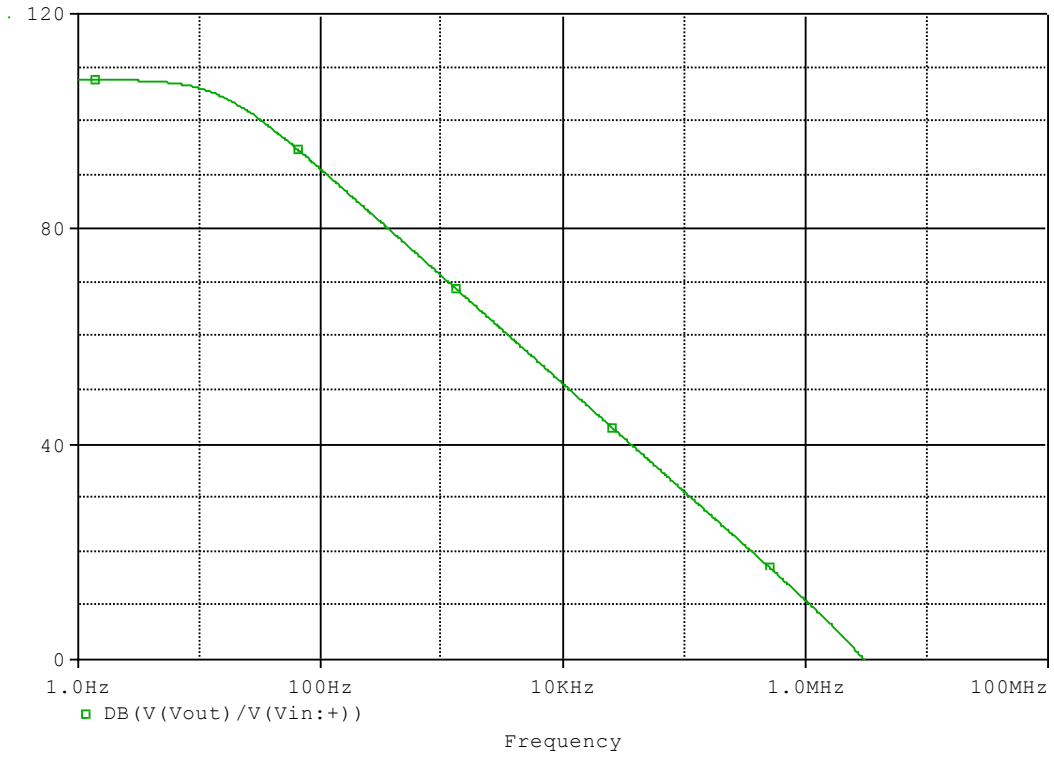



## Comparison table

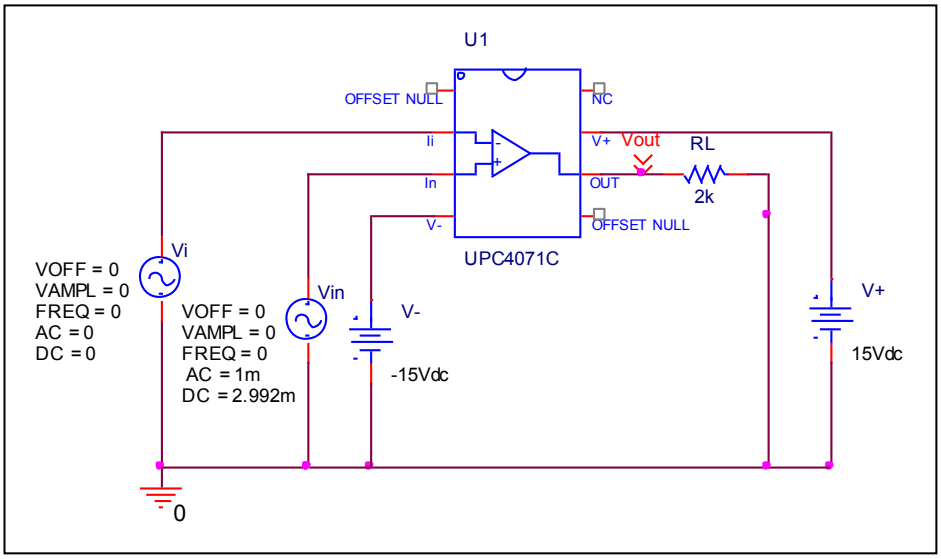
| | Measurement | Simulation | %Error |
|---|---|---|---|
| **Ib(pA)** | 30.000 | 30.065 | 0.217 |
| **Ibos(pA)** | 5.000 | 5.094 | 1.880 |

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

## Simulation result




## Evaluation circuit

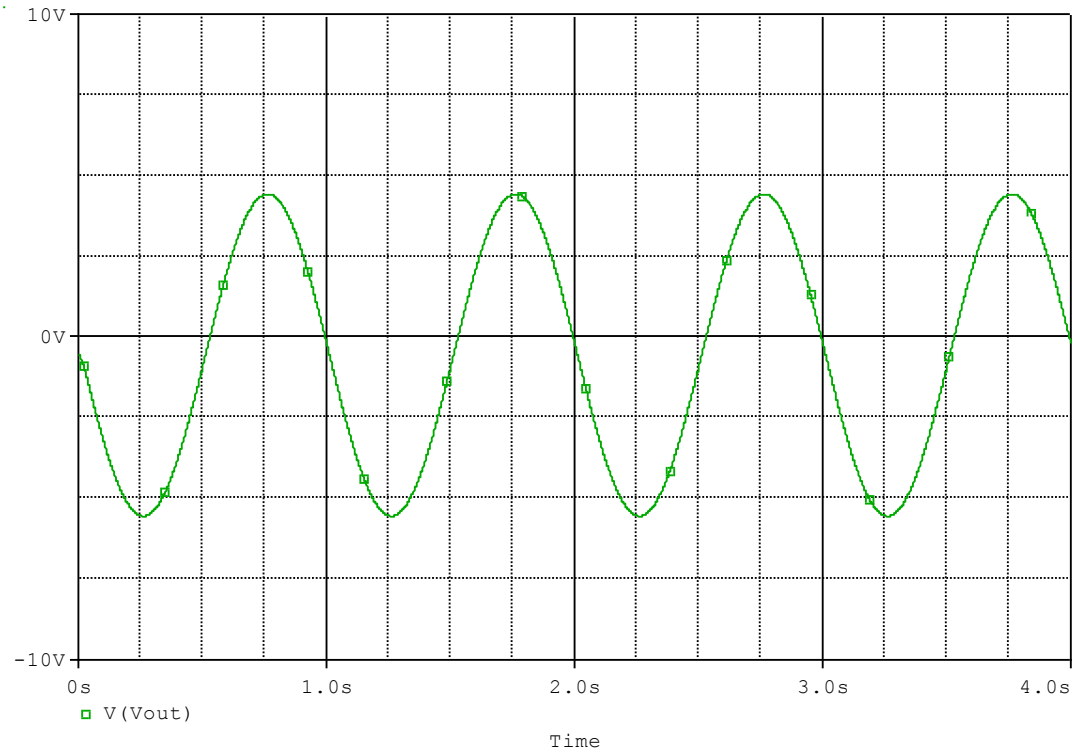



## Comparison table

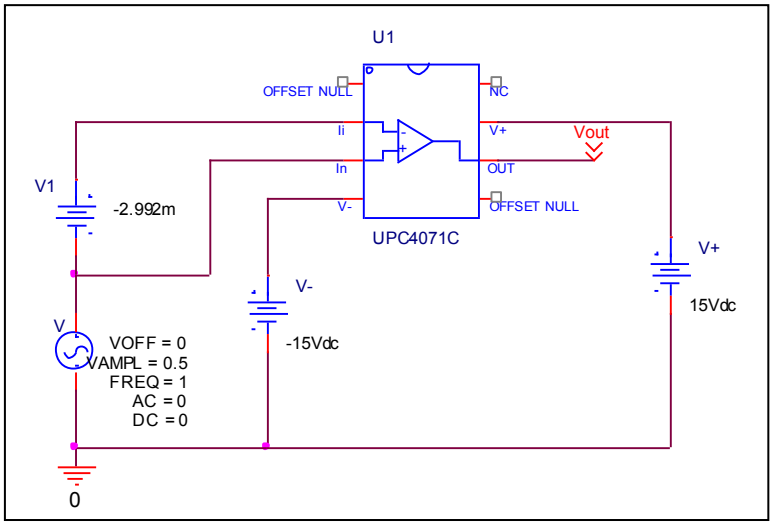
| | Measurement | Simulation | %Error |
|---|---|---|---|
| **f-0dB(MHz)** | 3.000 | 3.020 | 0.667 |
| **Av-dc(dB)** | 106.000 | 107.750 | 1.651 |

## Common-Mode Rejection Voltage gain

Simulation result




Evaluation circuit




Common Mode Reject Ratio=20*LOG(244061.9068/9.968) = 87.7778 dB

| CMRR (dB) | Measurement | Simulation | %Error |
|---|---|---|---|
| | 86.000 | 87.777 | 2.066 |