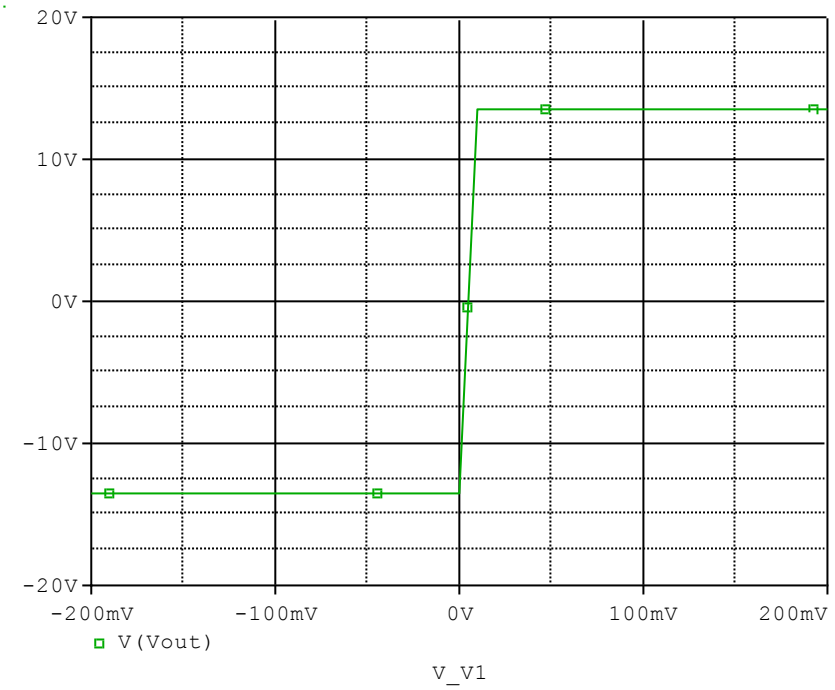
# Device Modeling Report

COMPONENTS: OPERATIONAL AMPLIFIER
PART NUMBER: NJM2749
MANUFACTURER: NEW JAPAN RADIO

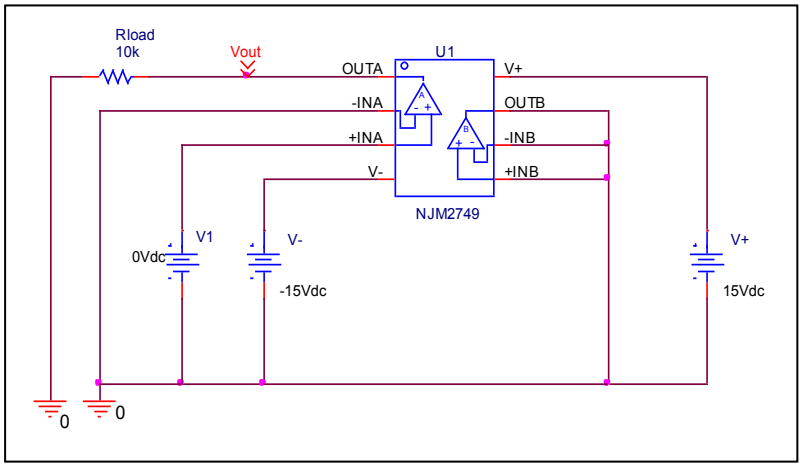
Bee Technologies Inc.

## Output Voltage Swing

Simulation result



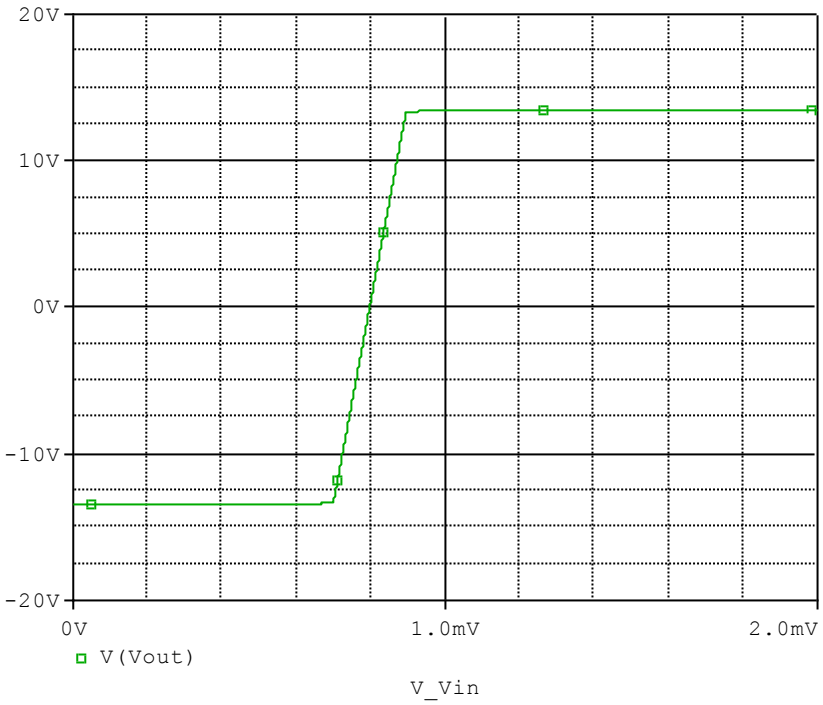

Evaluation circuit



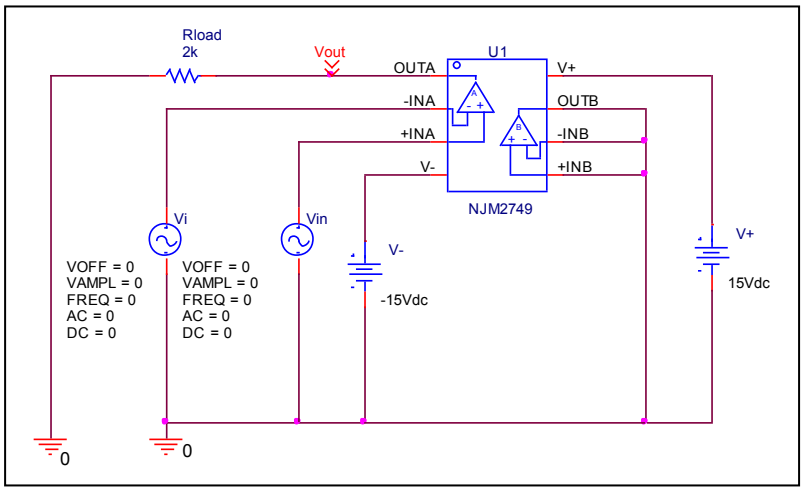

| Output Voltage Swing | Measurement | Simulation | %Error |
|---|---|---|---|
| +Vout(V) | +13.500 | +13.499 | -0.010 |
| -Vout(V) | -13.500 | -13.499 | -0.010 |

# Input Offset Voltage

## Simulation result



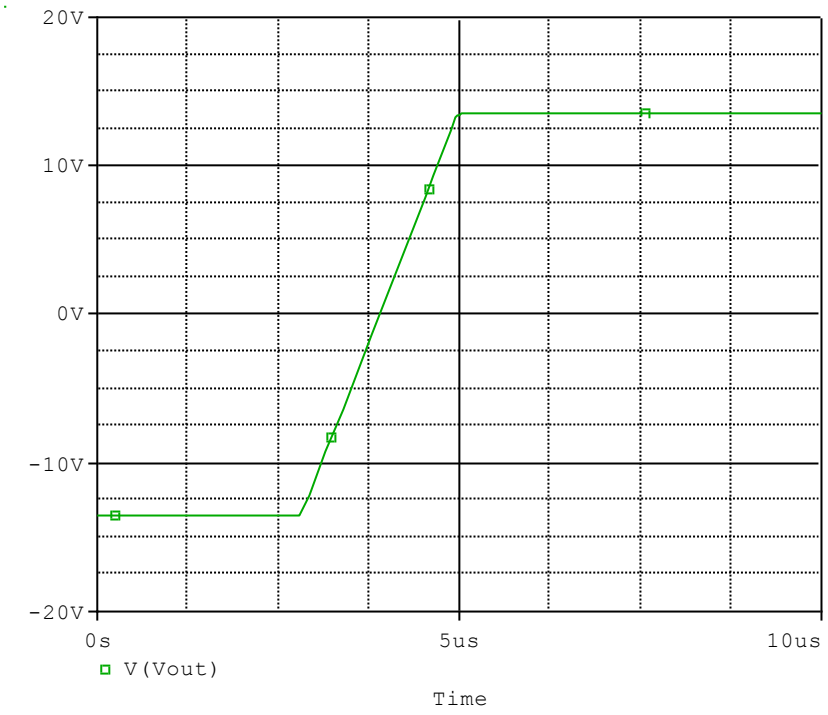

## Evaluation circuit



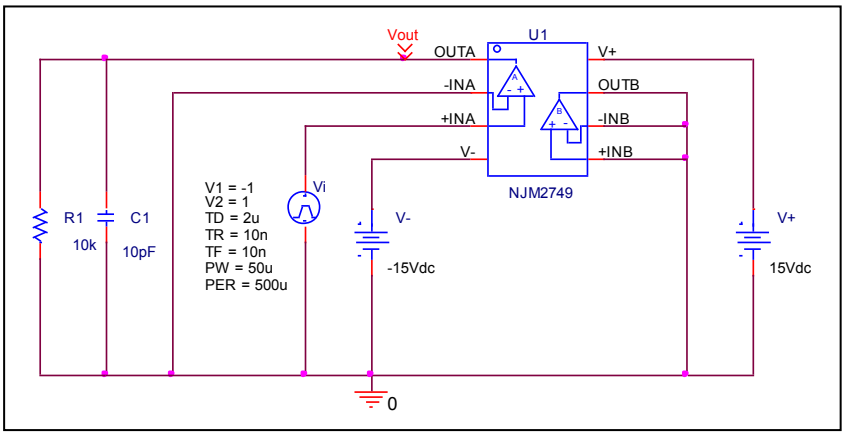

| Vos | Measurement | | Simulation | | Error | |
|---|---|---|---|---|---|---|
| | 0.800 | mV | 0.797 | mV | -0.380 | % |

## Slew Rate

Simulation result



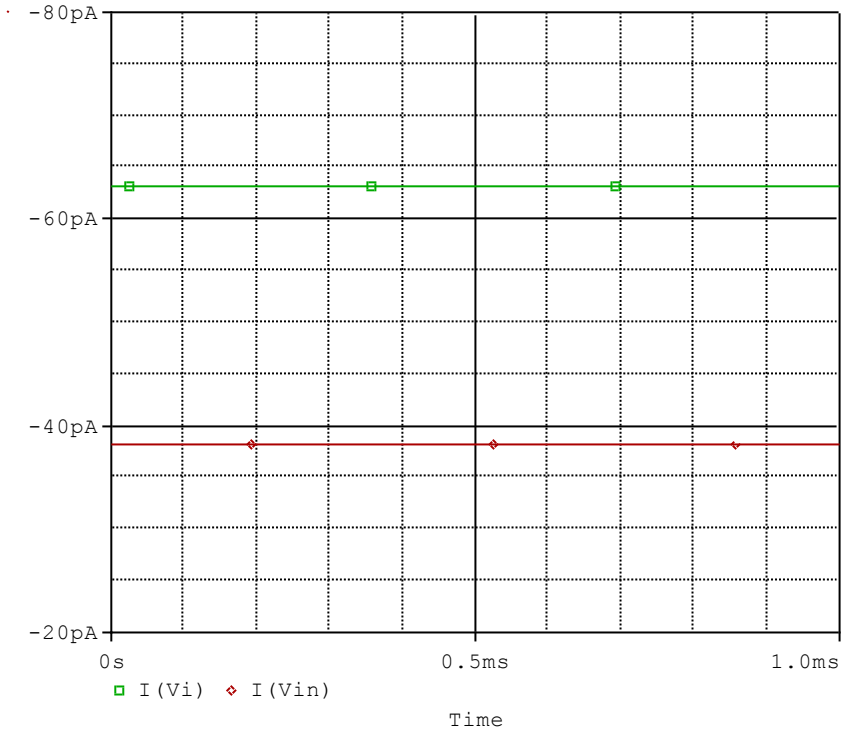

Evaluation circuit



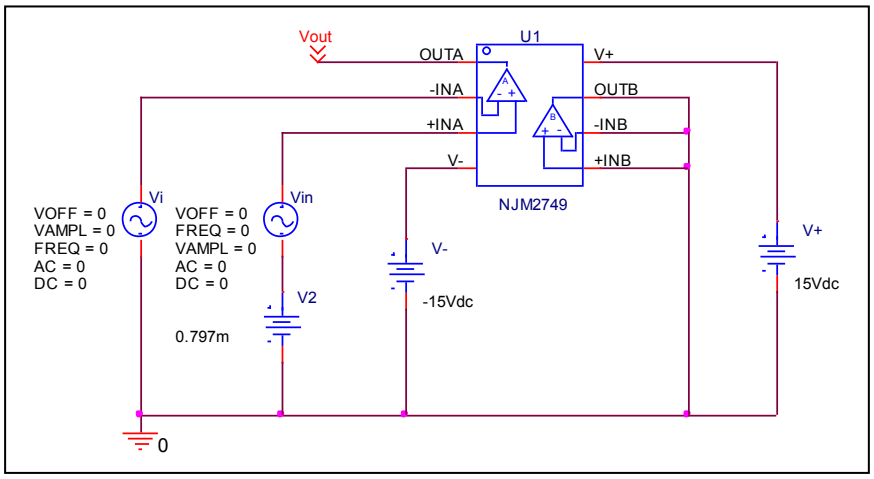

| Slew Rate(v/us) | Measurement | Simulation | %Error |
|---|---|---|---|
| | 13.000 | 12.538 | -3.550 |

# Input current Ib, Ibos

## Simulation result



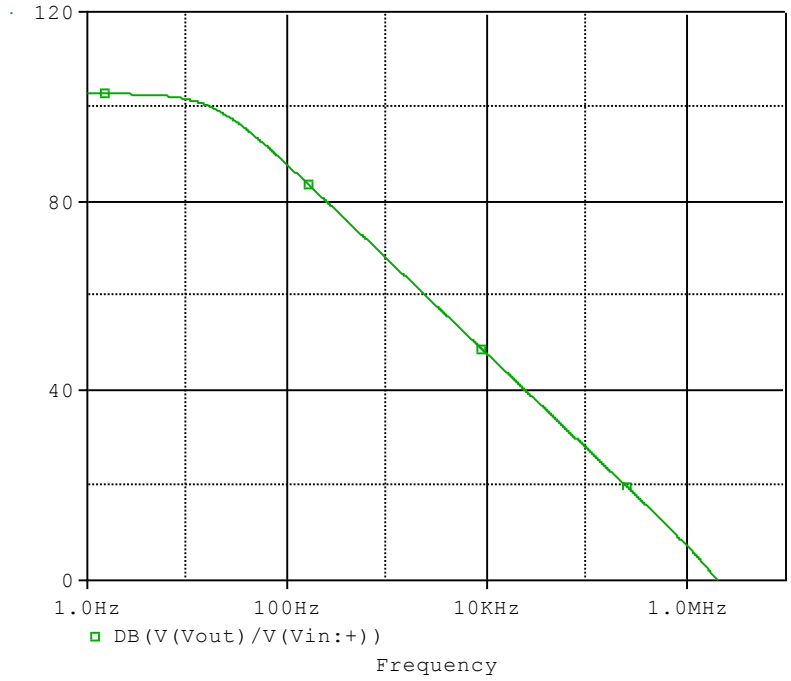

## Evaluation circuit



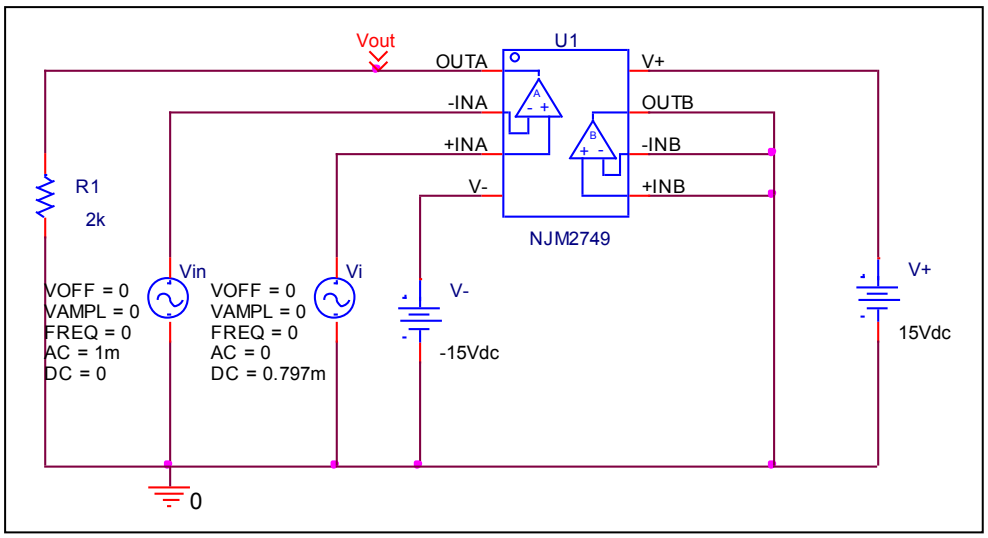

| | Measurement | Simulation | %Error |
|---|---|---|---|
| Ib(nA) | 50.000 | 50.599 | 1.200 |
| Ibos(nA) | 25.000 | 24.989 | -0.040 |

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

Simulation result



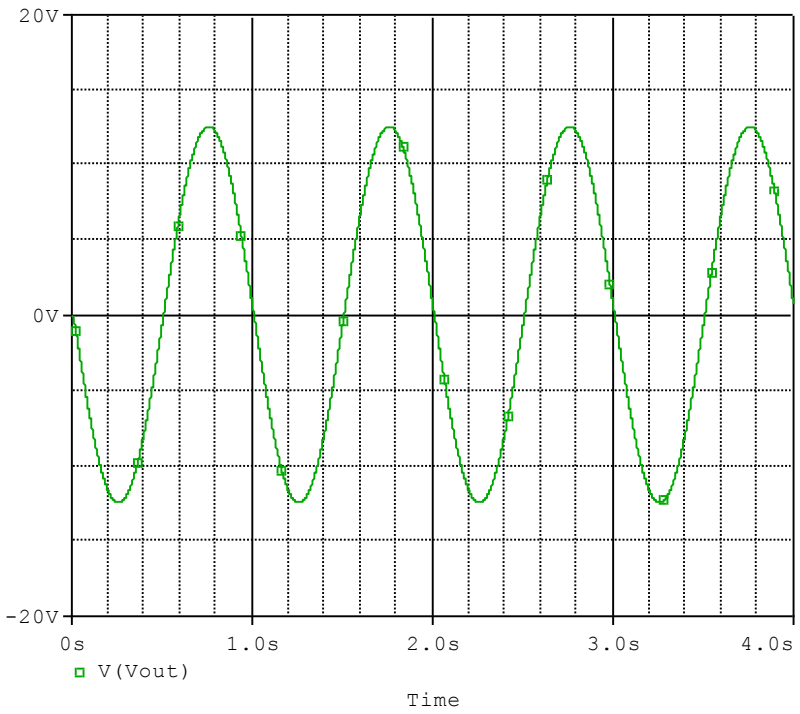

Evaluation circuit



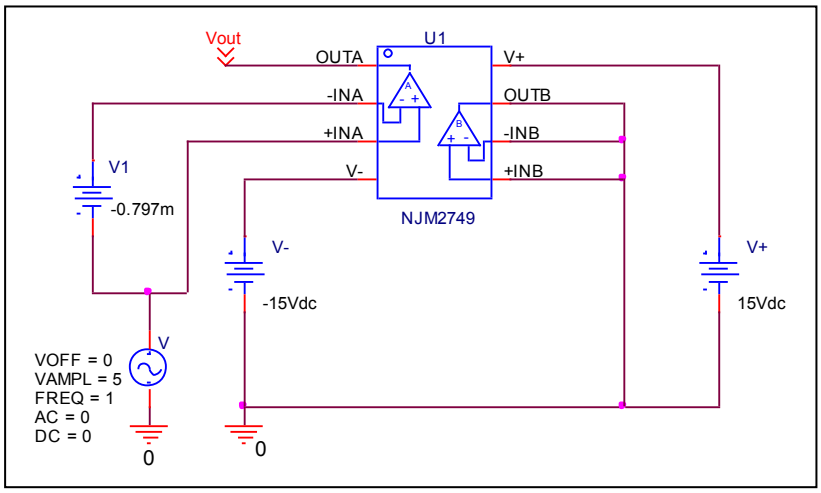

| | Measurement | Simulation | %Error |
|---|---|---|---|
| f-0dB(MHz) | 2.000 | 2.070 | 3.500 |
| Av-dc(dB) | 100.000 | 102.675 | 2.680 |

## Common-Mode Rejection Voltage gain

Simulation result




Evaluation circuit




CMRR=20*LOG(136066.1197/(25.019/10)) = 94.709 dB

| CMRR (dB) | Measurement | Simulation | %Error |
|---|---|---|---|
| | 92.000 | 94.709 | 2.940 |