

# Device Modeling Report

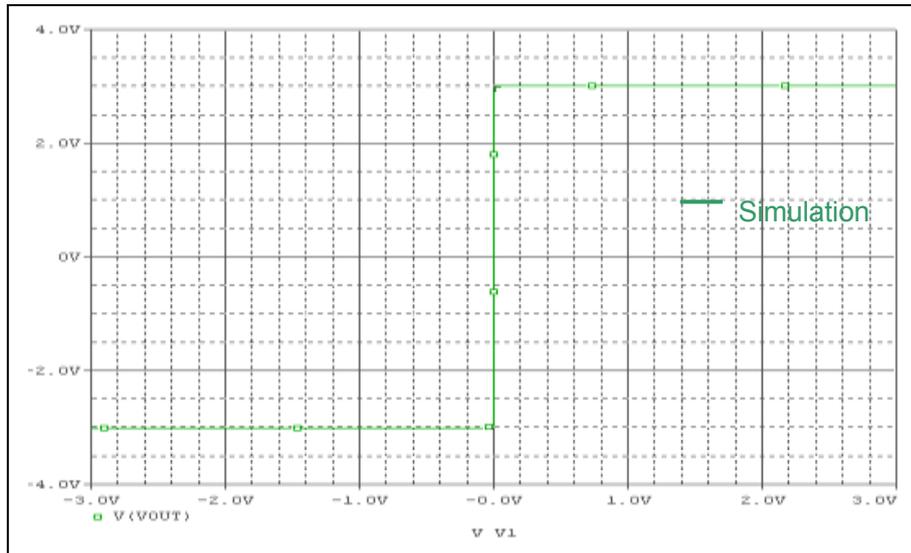
COMPONENTS : OPERATIONAL AMPLIFIER  
PART NUMBER : OPA2652  
MANUFACTURER: BURR BROWN CORPORATION



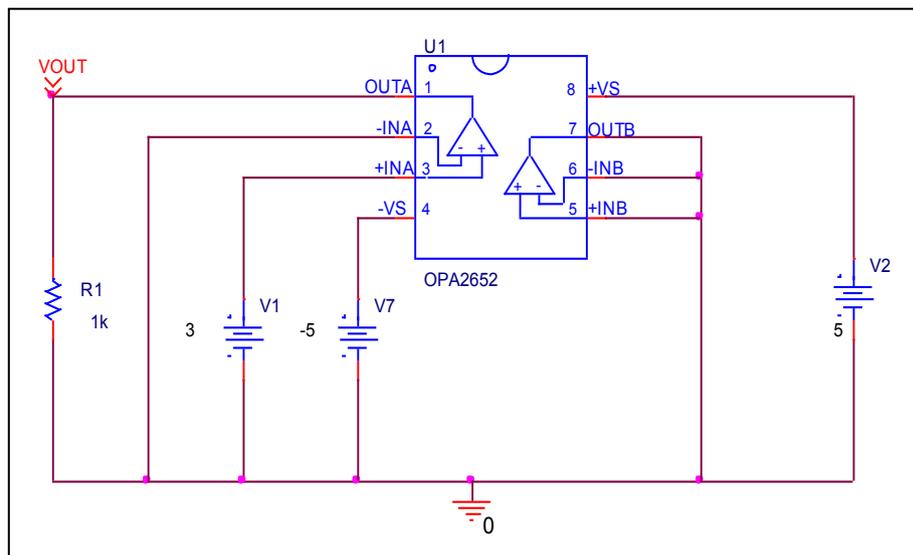
**Bee Technologies Inc.**

# Output Voltage Swing

## Simulation result



## Evaluation circuit

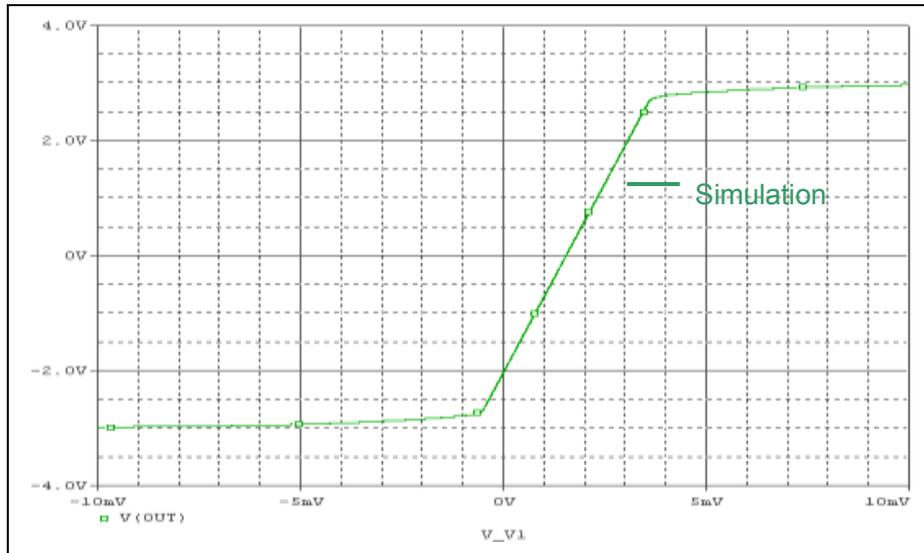


## Comparison Table

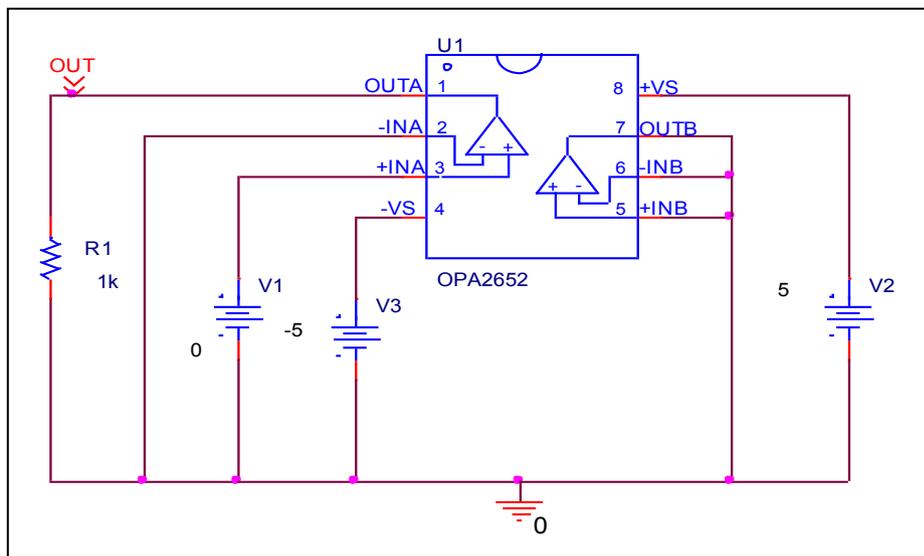
Output Voltage Swing	Measurement	Simulation	%Error
$\pm V_{OUT}$ (V)	$\pm 3$	$\pm 3$	0

# Input Offset Voltage

## Simulation result



## Evaluation Circuit

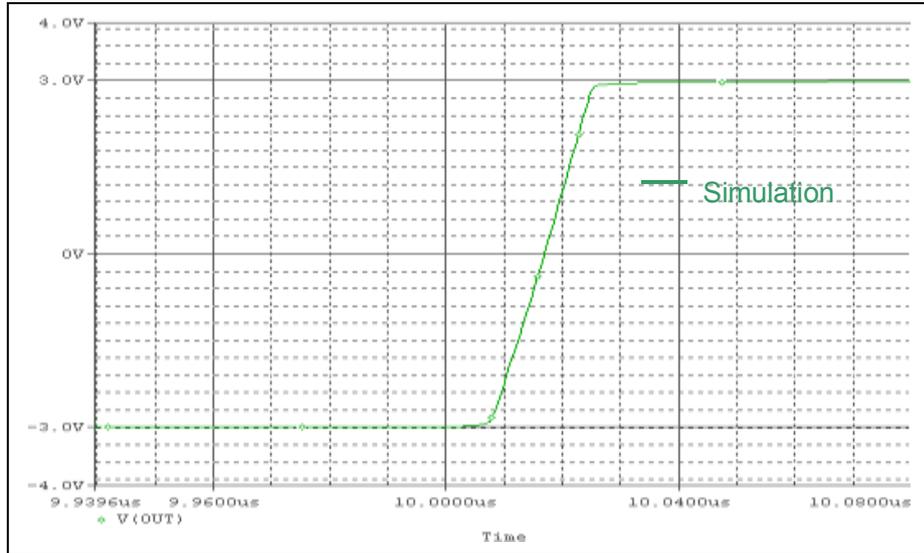


## Comparison Table

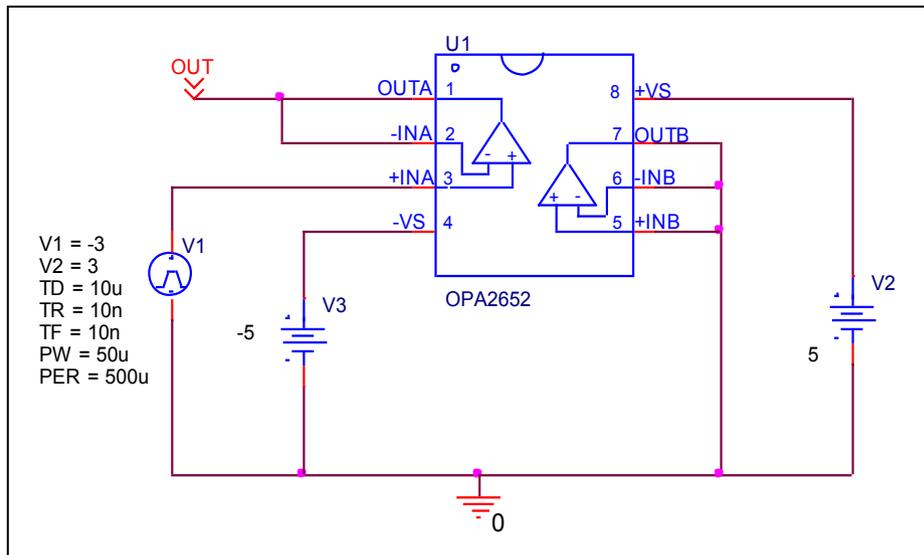
Input offset Voltage	Measurement	Simulation	%Error
$V_{os}$ (mV)	1.5	1.5499	3.327

# Slew Rate

## Simulation result



## Evaluation Circuit

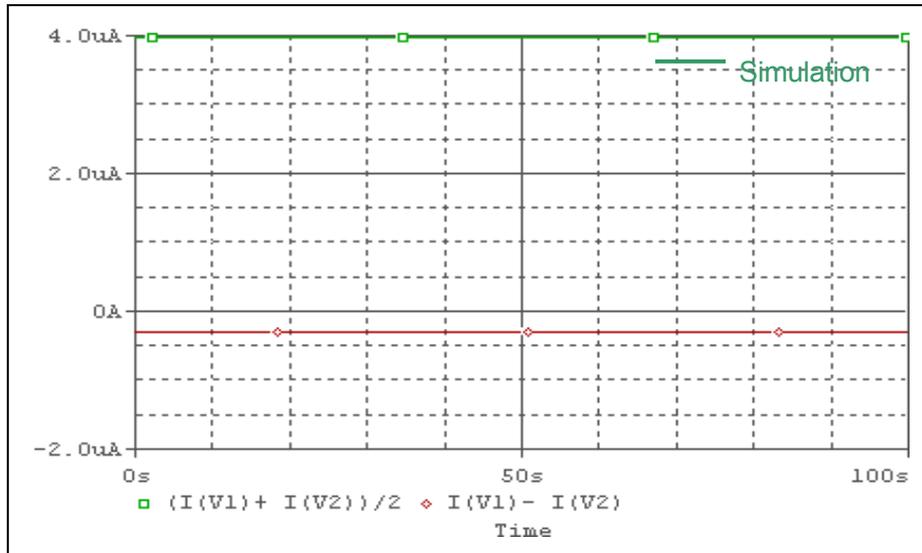


## Comparison Table

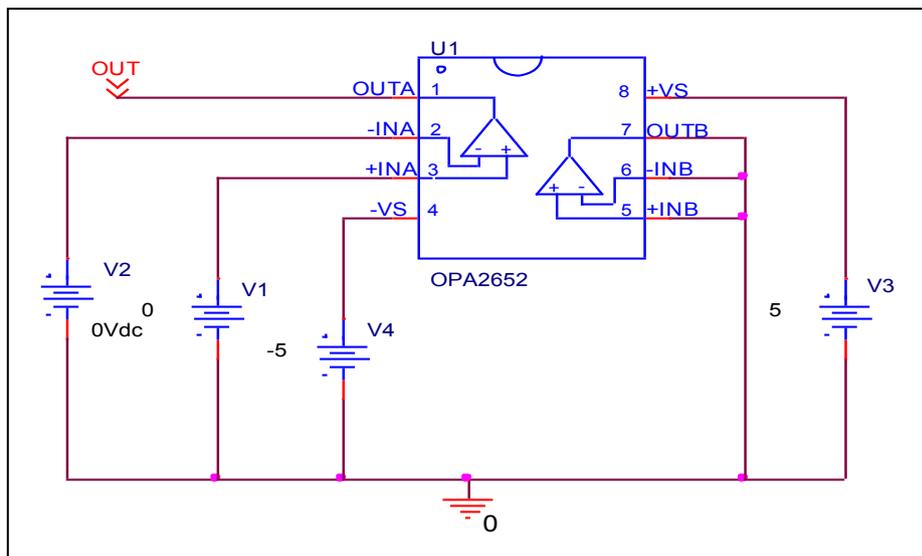
Slew Rate	Measurement	Simulation	%Error
SR (V/us)	335	334.33	-0.2

# Input Current

## Simulation result



## Evaluation Circuit

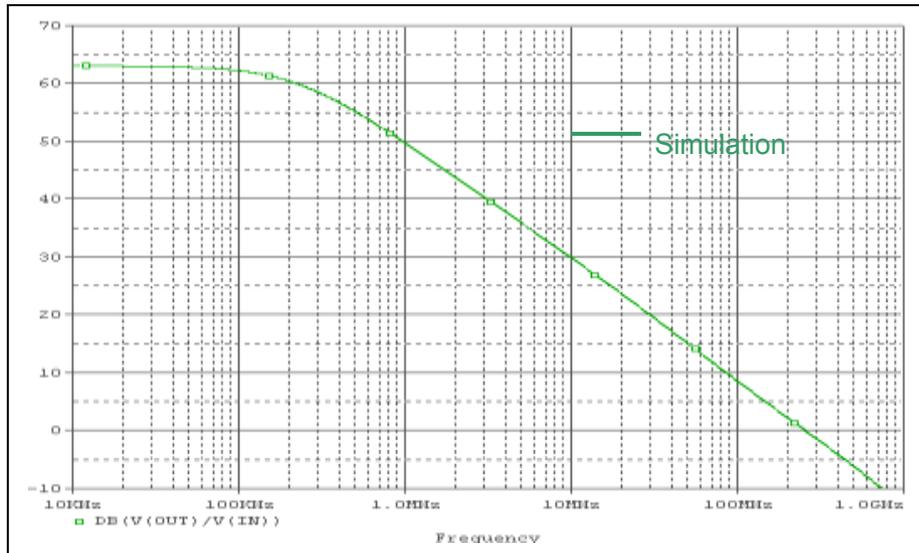


## Comparison Table

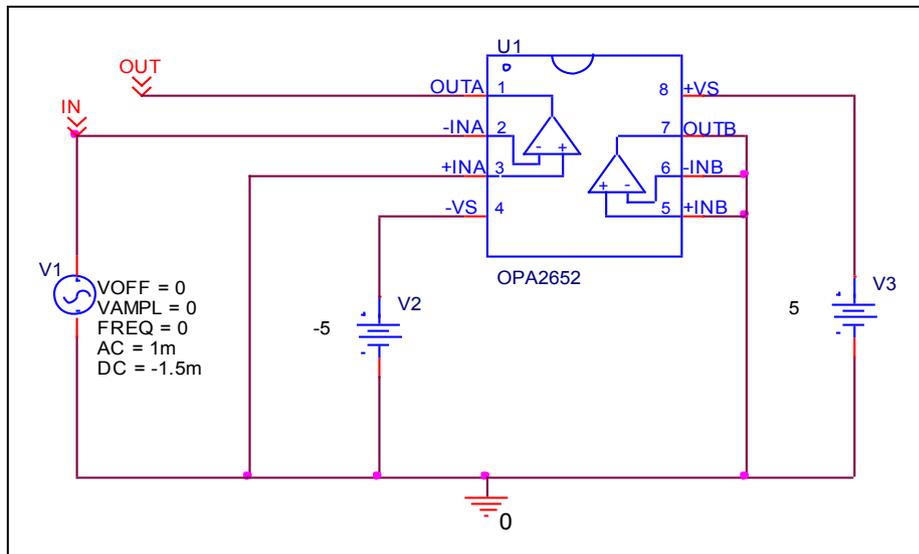
Input Current	Measurement	Simulation	% Error
$I_b$ (uA)	4	3.9855	-0.362
$I_{bos}$ (uA)	-0.3	-0.312406	4.135

# Open loop Voltage Gain

## Simulation result



## Evaluation Circuit

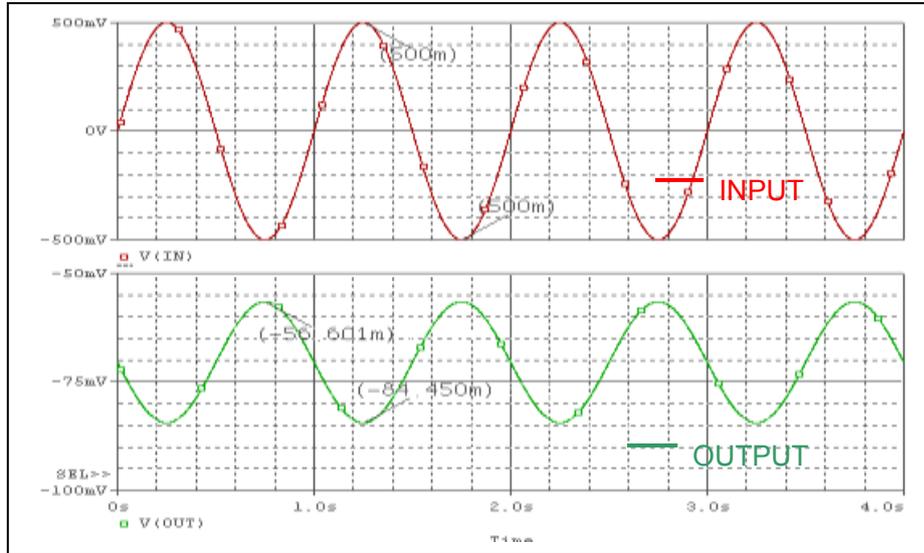


## Comparison Table

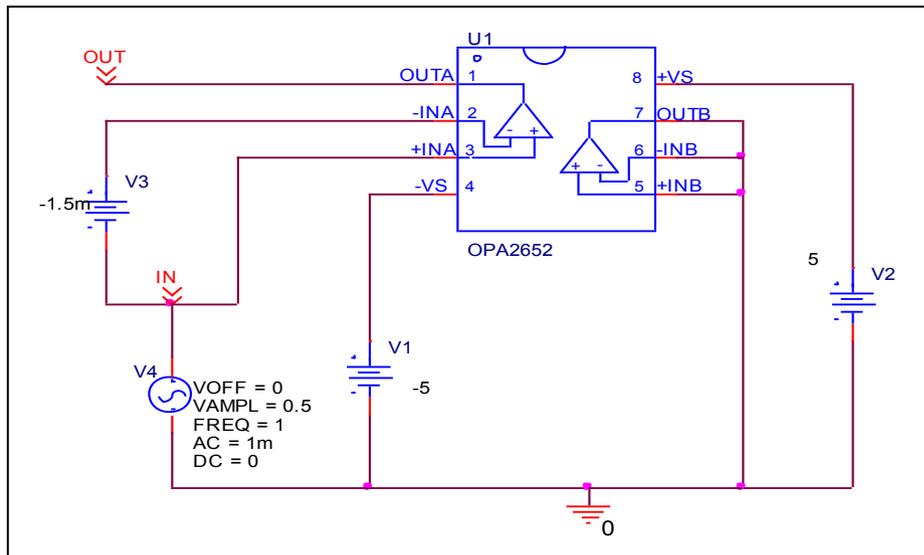
	Measurement	Simulation	% Error
<b>Av (dB)</b>	63	62.997	-0.005
<b>f-0dB(MHz)</b>	250	256.38	2.552

# Common-Mode Rejection Ratio

## Simulation result



## Evaluation Circuit



$$\begin{aligned}
 \text{CMRR} &= AV/ACM \\
 &= 1412/(27.849\text{m}/1)
 \end{aligned}$$

## Comparison Table

	Measurement	Simulation	% Error
<b>CMRR (dB)</b>	95	94.1	-0.947