**TITLE OF EXPERIMENT - AC VOLTAGE FOLLOWER**
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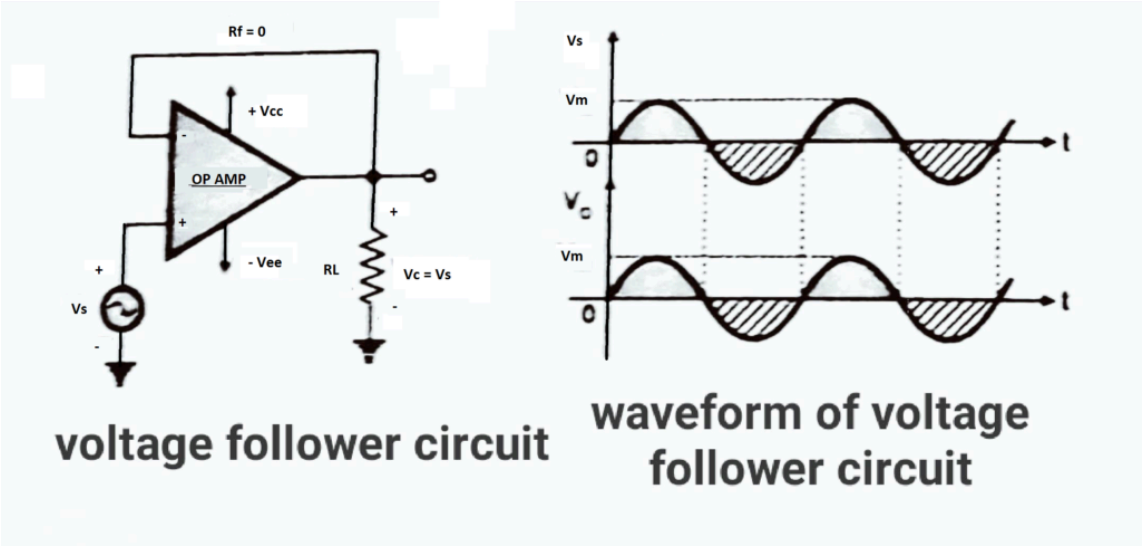
## ABSTRACT

An AC voltage follower, also known as a unity-gain buffer or voltage buffer, is a fundamental electronic circuit used to isolate input and output impedances while maintaining the same voltage level as the input. It essentially mimics the input voltage at its output without amplifying or attenuating it. This circuit consists of an operational amplifier (op-amp) with its non-inverting input connected directly to the input voltage source and its output connected to its inverting input through a feedback resistor.

The primary function of an AC voltage follower is impedance matching, which ensures minimal signal loss and distortion when interfacing different electronic components. It presents a high input impedance to the source and a low output impedance to the load, effectively preventing signal degradation due to impedance mismatch.

In practical applications, AC voltage followers are commonly employed in audio equipment, instrumentation, and signal conditioning circuits. They facilitate signal transmission between stages with varying impedance characteristics, ensuring fidelity and integrity of the signal throughout the system. Additionally, they serve as impedance buffers, preventing loading effects that could affect the performance of preceding stages.

## CIRCUIT DIAGRAM



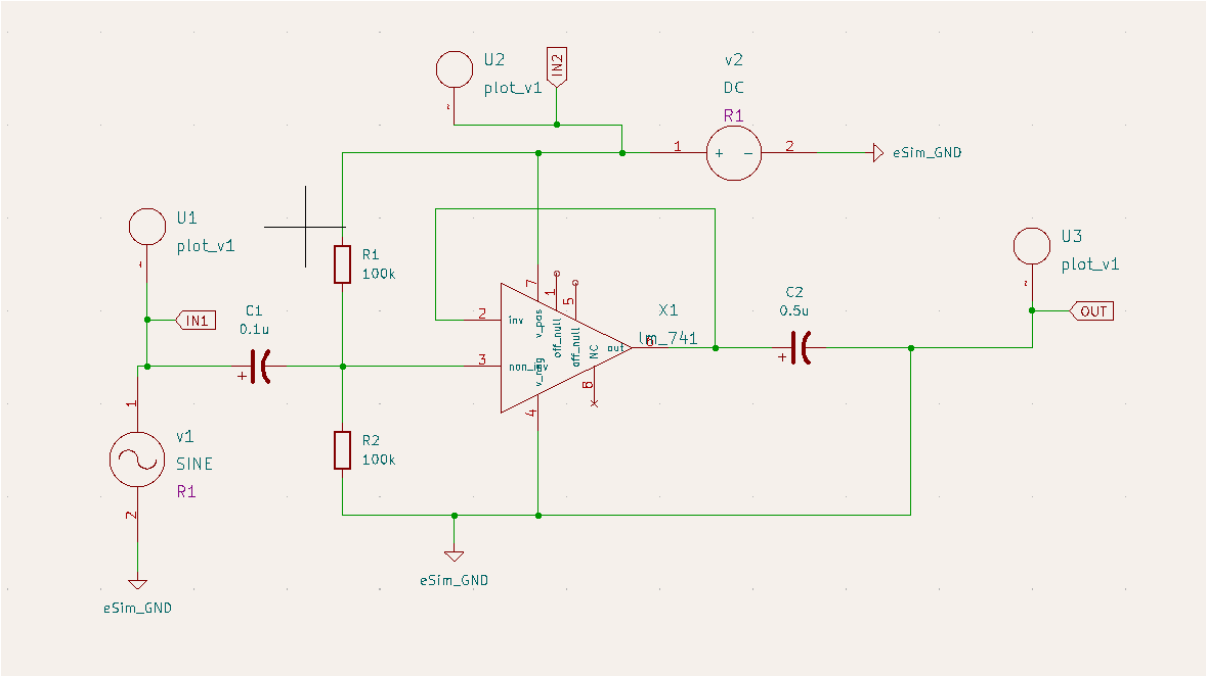

voltage follower circuit

waveform of voltage follower circuit

**eSIM REQUIRED COMPONENTS:**

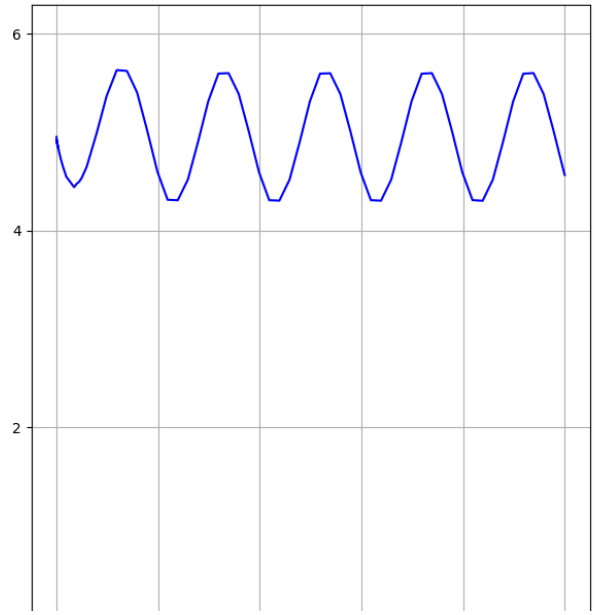
| COMPONENT | TYPE |
|---|---|
| LM 741 | OP-AMP |
| V1 (VOLTAGE SOURCE 1) | AC SOURCE |
| V2 (VOLTAGE SOURCE 2) | DC SOURCE |
| RESISTOR | 100k OHM |
| CAPACITOR | 0.1uF, 0.5uF |

**eSIM CIRCUIT:**

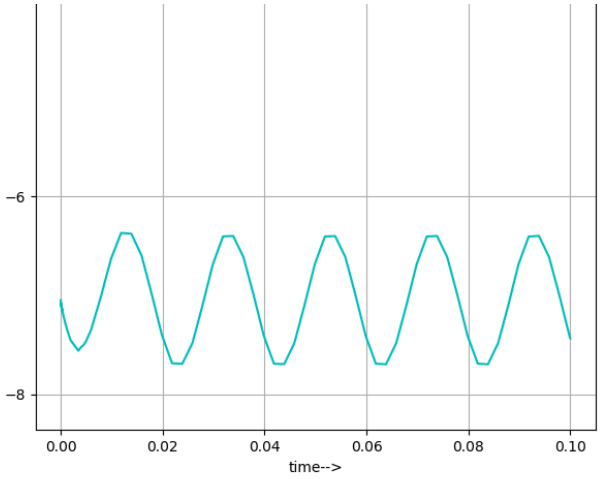


**OUTPUT**

**INPUT WAVEFORM:**




**OUTPUT WAVEFORM:**




**REFERENCES:**

https://hackatronic.com/opamp-voltage-follower-or-buffer-amplifier/