# Title of the Experiment

MOSFET based Class B Push Pull Amplifier

# Theory

Push-pull amplifiers employ a pair of "complementary," or matching, transistors, one of which is an NPN type and the other a PNP type. The input signal that both power transistors receive is the same, with the same amplitude but opposite phase. Therefore, the "two-halves" that are produced are put back together at the output terminal, with one transistor amplifying just half, or 180o, of the input waveform cycle, and the second transistor amplifying the remaining half, or 180o, of the input waveform cycle. This kind of amplifier circuit's conduction angle is therefore just 180 degrees, or 50% of the input signal. The clever term "push-pull" refers to the pushing and pulling action of the transistors' alternate half cycles.

# Schematic Diagram

The circuit schematic of the Class B Push-Pull Amplifier in eSim is as shown below

A diagram of a circuit

Description automatically generated

**Figure 1: Schematic Diagram of Class B Amplifier**

# Simulation Results

## NGSpice

A graph with green lines

Description automatically generated

**Figure 2: Input Signal given to the Class B Amplifier**

A graph with green lines

Description automatically generated

**Figure 3: Output Signal given from the Class B Amplifier**

## Python Plot

## A graph with red lines Description automatically generated

**Figure 4: Input Signal given to the Class B Amplifier**A graph with blue lines

Description automatically generated **Figure 5: Output Signal given from the Class B Amplifier**

A graph with red and blue lines

Description automatically generated

**Figure 6: Transient Analysis of Class B Amplifier**

# Conclusion

Therefore , we have successfully verified the transient analysis of the Class B Push Pull Amplifier and achieved the appropriate waveforms.

# References

<https://www.electronics-tutorials.ws/amplifier/amp_6.html>

<https://www.tutorialspoint.com/amplifiers/class_b_power_amplifier.htm>

<https://www.elprocus.com/class-b-amplifier/>

<https://www.allaboutcircuits.com/technical-articles/introduction-to-class-b-power-amplifiers/>