Abstract

This paper identifies a conventional flipped voltage follower (FVF) for high performance, low-voltage and low-power applications. This basic circuit is used as a voltage buffer, impedance matching and a level shifter. It presents more suppleness in contrast to the basic voltage follower as dc voltage level can be amended by varying aspect ratio of the MOS transistors. However, gain of the flipped voltage follower can be altered by scaling the aspect ratio (W/L) ratio of the transistors. This circuit is an essential building block for the analog circuits as it replicates the input voltage and voltage accuracy is a vital factor for high performance circuits. In this paper, proposed circuit has been designed and simulated on 45nm channel length technology. Simulated results for varying aspect ratio, W/L of 1, 2 and 3 are shown in the results with the help of input and output voltage graphs. The output voltage comes to be 95%, 90% and 85% of input voltage for W/L ratio of 1, 2 and 3 respectively.

References

Index Terms

Computer Science    Circuits and Systems

Keywords

Analog circuits, Aspect ratio, Flipped voltage follower, NMOS Source follower, Output impedance, PMOS Source follower