

Stabilization Technique for Multi-Inputs Voltage Sense Amplifiers in Node Sharing Converters

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Abstract : This paper discusses the undesirable charge transfer through the parasitic capacitances of the input transistors in a multi-inputs voltage sense amplifier. Its intrinsic rail-to-rail voltage transitions at the output nodes inevitably disturb the input sides through the capacitive coupling between the outputs and inputs. Then, it can possibly degrade the stabilities of the reference voltage levels. Moreover, it becomes more serious in multi-channel systems by altering them for other channels, and so degrades the linearity of the overall systems. In order to alleviate the internal node voltage transition, the internal node stabilization techniques are proposed. It achieves 45% and 40% improvements for node stabilization and input referred disturbance, respectively.

Keywords : voltage sense amplifier, multi-inputs, voltage transition, node stabilization, biasing circuits

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