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Internal Node Stabilization for Voltage Sense Amplifiers in Multi-Channel Systems

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Abstract : This paper discusses the undesirable charge transfer by the parasitic capacitances of the input transistors in a voltage sense amplifier. Due to its intrinsic rail-to-rail voltage transition, the input sides are inevitably disturbed. It can possible disturb the stabilities of the reference voltage levels. Moreover, it becomes serious in multi-channel systems by altering them for other channels, and so degrades the linearity of the systems. In order to alleviate the internal node voltage transition, the internal node stabilization technique is proposed by utilizing an additional biasing circuit. It achieves 47% and 43% improvements for node stabilization and input referred disturbance, respectively.

Keywords : voltage sense amplifier, voltage transition, node stabilization, biasing circuits
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