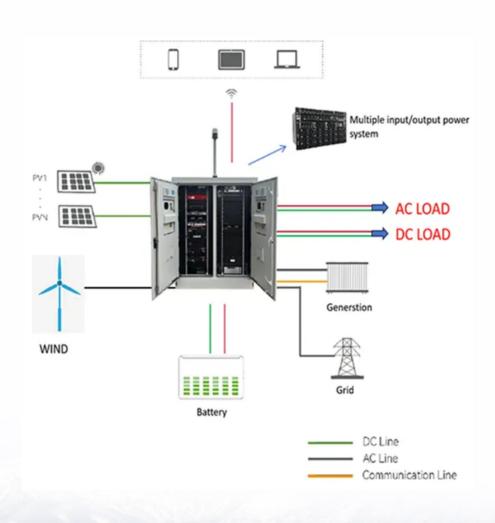


SolarInvert Energy Solutions

Low voltage and low power inverter design





Overview

Can double tail comparator be used in regenerative inverter?

In this paper, an approach of double tail comparator with a technique of regenerative inverter is introduce which is importantly basic component of ADCs, the result is confirmed by the 180 nm CMOS Technology post layout simulation. The supply low voltage at 0.8V and sampling frequency GHz are taken under consideration.

Can adiabatic logic be used to implement low power circuits?

The technique can also be used to implement low power circuits using TFETs on lower supply voltages. Shinghal D, Saxena A, Noor A (2013) Adiabatic logic circuits: a retrospect. MIT Int J Electron Commun Eng 3 (2):108–114 Singh R, Mehra R (2013) Power efficient design of multiplexer using adiabatic logic. Int J Adv Eng Technol 6 (1):246.

Which logic style dissipates least power?

The proposed circuit dissipates least power as compared to other power saving logic styles. A comparative analysis of all the three logic styles has been presented for better understanding. The circuits are implemented and simulated on Tanner V.13 using 90 nm technology.

Does a double tail dynamic comparator reduce the delay in low-voltage supplies?

the post-layout simulation results of the delay and the energy per conversion of the mentioned dynamic comparators versus supply voltage variation. As shown in Fig. 9(a), in comparison with the other two structures, the delay of the proposed double- tail dynamic comparator is significantly reduced in low-voltage supplies.

Why is CMOS preferred if power dissipation is low?

CMOS is preferred where least power dissipation is required. Although the



power dissipation in CMOS is low compared to other logic families, it still dissipates a considerable amount of power during switching events in the form of heat. Voltage scaling is one of the solutions suggested to decrease the power dissipation of circuits.

What is a basic operational transconductance amplifier based on an inverter?

Inverter-based OTA A basic operational transconductance amplifier (OTA) based on an inverter, named OTA-A, is shown in Fig. 1. In a simple inverter consisting of NMOS and PMOS transistors, the aspect ratio of the PMOS transistors is typically chosen to be 4 times that of the NMOS transistors to compensate for the difference in charge mobility .



Low voltage and low power inverter design



Low Voltage, Low Power, Inverter-Based Switched-Capacitor ...

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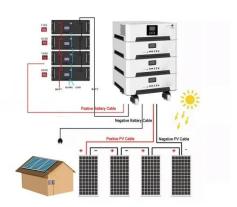
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