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Inverter ultra low voltage

Overview

What is a simple inverter?

As we can see in Figure 1, a simple inverter is equivalent to a differential amplifier with the non-inverting input permanently connected to the constant voltage Vinv (1 + 1 /Ainv). The voltage Vinv represents the inverter switching voltage, i.e., the input value which produces Vout = Vin = Vinv; Ainv is the magnitude of the amplifier gain.

What is ultra-low voltage (ULV) design?

Values such as these are usually close to the threshold voltage of regular MOSFETs: The use of particular sizing and topologies becomes mandatory in ultra-low voltage (ULV) design. A very popular approach to ULV design is the use of inverter-like amplifiers .

Are ultra-low supply voltages prone to PVT variations?

With ultra-low supply voltages, circuits are more prone to suffer from PVT variations. Therefore, we verified the robustness of our proposed amplifier by means of temperature sweep and corner analysis.

Is a pseudo-differential inverter-based amplifier suitable for ULV applications?

In this work, we present a pseudo-differential, single-stage, inverter-based amplifier for ULV applications with a novel common-mode stabilization loop (CMSL). The proposed circuit has been designed with the UMC 0.18 µm CMOS process and its effectiveness has been verified by means of electrical simulations.

Inverter ultra low voltage

Ultra Low Voltage High Speed Differential CMOS Inverter

In this paper we demonstrate and analyse how the differential ultra low voltage inverter can be designed in order to achieve the most beneficial conditions concerning speed, stability and EDP.

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ULTRA-LOW POWER SUBTHRESHOLD CMOS INVERTER ...

Ultra low-power CMOS inverters are classified as the sub threshold circuits in which exponential reduction in power with respect to the supply voltage takes place.

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Ultra-Low-Voltage Inverter-Based Amplifier with Novel ...

This work presents a single-stage, inverter-based, pseudo-differential amplifier that can work with ultra-low supply voltages.

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A Novel Technique to Design Ultra-Low Voltage and Ultra-Low ...

In this work a novel technique to design ultra-low voltage (ULV), ultra-low power (ULP), inverter-based OTAs is presented. The proposal consists in utilizing a replica bias ...

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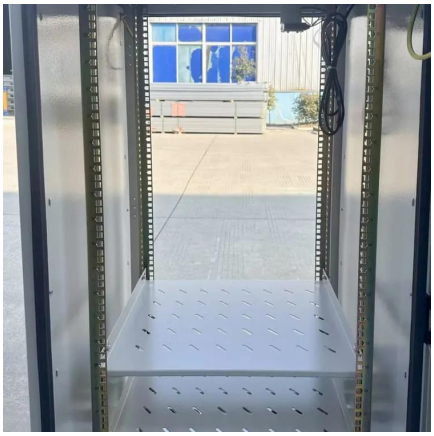

A Novel 0.62 nW Inverter Based Digital-OTA

In this paper, we present a novel ultra-low voltage (ULV) operational transconductance amplifier (OTA) topology inspired by the DIG-OTA. The proposed amplifier ...

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An Ultra-Low-Voltage Approach to Accurately ...

An approach to design analog building blocks based on digital standard cells is presented in this work. By ensuring that every CMOS inverter from a standard-cell library operates with a well-defined quiescent ...

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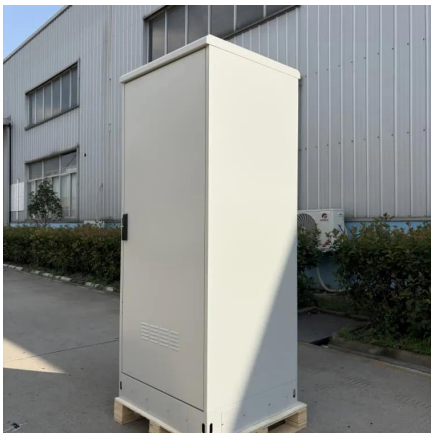

Ultra-Low-Voltage Inverter-Based Amplifier with Novel

This work presents a single-stage, inverter-based, pseudo-differential amplifier that can work with ultra-low supply voltages. A novel common-mode stabilization loop allows ...

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An Ultra-Low-Voltage Approach to Accurately Set the ...

An Ultra-Low-Voltage Approach to Accurately Set the Quiescent Current of Digital Standard Cells Used for Analog Design and Its Application on an Inverter-Based Operational ...

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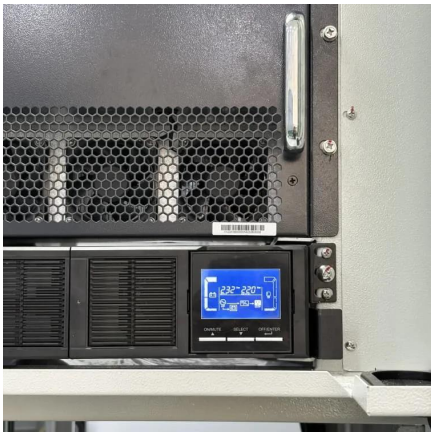

On the design of an ultra-low-power ultra-low-voltage inverter ...

In this paper, an inverter-based Operational Transconductance Amplifier (OTA) is introduced. This design is tailored for applications demanding ultra-low power consumption ...

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An Ultra-Low-Voltage Approach to Accurately Set the ...

An approach to design analog building blocks based on digital standard cells is presented in this work. By ensuring that every CMOS inverter from a standard-cell library ...

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Ultra-Low-Voltage Inverter-Based Amplifier with Novel ...

Ultra-Low-Voltage Inverter-Based Amplifier with Novel Common-Mode Stabilization Loop Giuseppe Manfredini 1,*, Alessandro Catania 1, Lorenzo Benvenuti 1, ...

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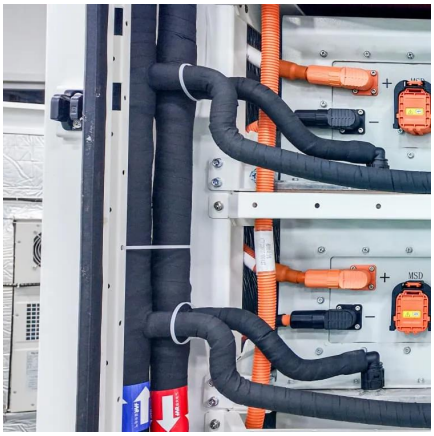

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