

What is CMOS

Core structure & working principle

This is a free preview page.

Full version includes more chapters & cases.

What is CMOS

Definition

Complementary MOS pairs nMOS + pMOS for near-zero static power; foundation of modern digital ICs.

Core structure

p-substrate, n-well / p-well, gate (poly/metal), source/drain; oxide isolates, channel forms under gate bias.

How it works

Inverter: one transistor ON, the other OFF → no static current; logic built from CMOS gates.

Why dominant?

Near-zero static power, scalable, high noise margin, mature and low-cost process.

Full version: fabrication flow, scaling history, FinFET / GAA evolution.