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# COS/MOS Integrated Circuits Manual



COS/MOS (Complementary-Symmetry Metal-Oxide Semiconductor) devices were developed at the RCA David Sarnoff Research Laboratories in Princeton, New Jersey, in the early 1960's. The first commercial series of integrated COS/MOS circuits was announced by the RCA Solid State Division in 1968.

COS/MOS made possible orders-of-magnitude reduction in the power consumption of digital logic circuits. Perhaps the most dramatic demonstration of the potential of this new technology was the development, in 1970, of a totally new consumer product - the digital wrist watch. Battery-powered and quartz-crystal-controlled, this watch was an achievement in accuracy and compactness made possible only by COS/MOS integrated-circuit technology.

Today, the original series of COS/MOS integrated circuits has been expanded with increasingly complex designs, so that virtually any digital logic system can be implemented with commercially available packaged units. This Manual is intended as a guide to COS/MOS integrated circuits for the systems engineer and logic designer. It discusses the basic principles involved in the design and application of COS/MOS digital integrated circuits, and describes many of the circuit building blocks, ranging from basic NOR and NAND gates to complex phase-locked loops and rate multipliers.

Although this Manual is intended primarily for circuit and system designers working with solid-state circuits, it will also be useful to educators, students, radio amateurs, hobbyists, and others interested in the use of semiconductor devices and circuits.

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