

THE ART OF  
ELECTRONICS

PAUL HOROWITZ  
WINFIELD HILL

THIRD  
EDITION

# The Art of Electronics

## Third Edition

At long last, here is the thoroughly revised and updated, and long-anticipated, third edition of the hugely successful *The Art of Electronics*. Widely accepted as the best single authoritative text and reference on electronic circuit design, both analog and digital, the first two editions were translated into eight languages, and sold more than a million copies worldwide. The art of electronics is explained by stressing the methods actually used by circuit designers – a combination of some basic laws, rules of thumb, and a nonmathematical treatment that encourages understanding why and how a circuit works.

Paul Horowitz is a Research Professor of Physics and of Electrical Engineering at Harvard University, where in 1974 he originated the Laboratory Electronics course from which emerged *The Art of Electronics*. In addition to his work in circuit design and electronic instrumentation, his research interests have included observational astrophysics, x-ray and particle microscopy, and optical interferometry. He is one of the pioneers of the search for intelligent life beyond Earth (SETI). He is the author of some 200 scientific articles and reports, has consulted widely for industry and government, and is the designer of numerous scientific and photographic instruments.

Winfield Hill is by inclination an electronics circuit-design guru. After dropping out of the Chemical Physics graduate program at Harvard University, and obtaining an E.E. degree, he began his engineering career at Harvard's Electronics Design Center. After 7 years of learning electronics at Harvard he founded Sea Data Corporation, where he spent 16 years designing instruments for Physical Oceanography. In 1988 he was recruited by Edwin Land to join the Rowland Institute for Science. The institute subsequently merged with Harvard University in 2003. As director of the institute's Electronics Engineering Lab he has designed some 500 scientific instruments. Recent interests include high-voltage RF (to 15 kV), high-current pulsed electronics (to 1200 A), low-noise amplifiers (to sub-nV and pA), and MOSFET pulse generators.

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Third Edition

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*To Vida and Ava*

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*In Memoriam: Jim Williams, 1948–2011*

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