

Copyright © 2010 by the Institute of Electrical and Electronics Engineers, Inc. All rights reserved.

Published by John Wiley & Sons, Inc., Hoboken, New Jersey.
Published simultaneously in Canada.

No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, scanning, or otherwise, except as permitted under Section 107 or 108 of the 1976 United States Copyright Act, without either the prior written permission of the Publisher, or authorization through payment of the appropriate per-copy fee to the Copyright Clearance Center, Inc., 222 Rosewood Drive, Danvers, MA 01923, (978) 750-8400, fax (978) 750-4470, or on the web at www.copyright.com. Requests to the Publisher for permission should be addressed to the Permissions Department, John Wiley & Sons, Inc., 111 River Street, Hoboken, NJ 07030, (201) 748-6011, fax (201) 748-6008, or online at <http://www.wiley.com/go/permission>.

Limit of Liability/Disclaimer of Warranty: While the publisher and author have used their best efforts in preparing this book, they make no representations or warranties with respect to the accuracy or completeness of the contents of this book and specifically disclaim any implied warranties of merchantability or fitness for a particular purpose. No warranty may be created or extended by sales representatives or written sales materials. The advice and strategies contained herein may not be suitable for your situation. You should consult with a professional where appropriate. Neither the publisher nor author shall be liable for any loss of profit or any other commercial damages, including but not limited to special, incidental, consequential, or other damages.

For general information on our other products and services or for technical support, please contact our Customer Care Department within the United States at (800) 762-2974, outside the United States at (317) 572-3993 or fax (317) 572-4002.

Wiley also publishes its books in a variety of electronic formats. Some content that appears in print may not be available in electronic format. For information about Wiley products, visit our web site at www.wiley.com.

Library of Congress Cataloging-in-Publication Data:

Baker, R. Jacob, 1964-
CMOS : circuit design, layout, and simulation / Jake Baker. — 3rd ed.
p. cm.

Summary: "The third edition of CMOS: Circuit Design, Layout, and Simulation continues to cover the practical design of both analog and digital integrated circuits, offering a vital, contemporary view of a wide range of analog/digital circuit blocks, the BSIM model, data converter architectures, and much more. The 3rd edition completes the revised 2nd edition by adding one more chapter (chapter 30) at the end, which describes on implementing the data converter topologies discussed in Chapter 29. This additional, practical information should make the book even more useful as an academic text and companion for the working design engineer. Images, data presented throughout the book were updated, and more practical examples, problems are presented in this new edition to enhance the practicality of the book"— Provided by publisher.

Summary: "The third edition of CMOS: Circuit Design, Layout, and Simulation continues to cover the practical design of both analog and digital integrated circuits, offering a vital, contemporary view of a wide range of analog/digital circuit blocks, the BSIM model, data converter architectures, and much more"— Provided by publisher.

ISBN 978-0-470-88132-3 (hardback)

1. Metal oxide semiconductors, Complementary—Design and construction. 2. Integrated circuits—Design and construction. 3. Metal oxide semiconductor field-effect transistors. I. Title.

TK7871.99.M44B35 2010

621.39'732—dc22

2010016630

Printed in the United States of America.

10 9 8 7 6 5 4

 Indicates fourth printing