

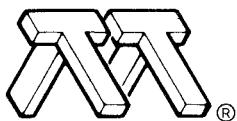
**IEEE 1983 MICROWAVE AND MILLIMETER-WAVE  
MONOLITHIC CIRCUITS  
SYMPOSIUM  
DIGEST OF PAPERS**

**Editor: B. E. Spielman**

**Sponsored by**  
**THE IEEE MICROWAVE THEORY AND TECHNIQUES SOCIETY**  
**Cooperatively Sponsored by**  
**THE IEEE ELECTRON DEVICES SOCIETY**



83CH1875-4



Copies available from:

IEEE Service Center  
445 Hoes Lane  
Piscataway, NJ 08854

IEEE Catalog No. 83CH1875-4  
Library of Congress Catalog No. 83-80408

**Copyright and Reprint Permissions:** Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limits of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through the Copyright Clearance Center, 21 Congress St., Salem, MA 01970. Instructors are permitted to photocopy isolated articles for noncommercial classroom use without fee. For other copying, reprint or republication permission, write to Director, Publishing Services, IEEE, 345 E. 47 St., New York, NY 10017. All rights reserved. Copyright © 1983 by The Institute of Electrical and Electronics Engineers, Inc.