

Table of Contents

Preface

Matching Physical and Electrical Measurements (OBIC) to Simulation (FEM) on High Voltage Bipolar Diodes

D. Planson, C. Sonnevile, P. Bevilacqua, P. Brosselard, M. Lazar, S. Scharnholz, B. Vergne and H. Morel

1

Cost-Effective Design and Optimization of a 3300-V Semi-Superjunction 4H-SiC MOSFET Device

K. Melnyk, M. Boccarossa, A.B. Renz, Q. Cao, P.M. Gammon, V.A. Shah, L. Maresca, A. Irace and M. Antoniou

7

A Physics-Based SPICE Model for a SiC Vertical Power MOSFET

J.H. Lim, A.U. Rashid, B. Brooks and S.H. Ryu

13

A Novel 'Ladder' Design for Improved Channel Density for 1.2kV 4H-SiC MOSFETs

S. de Boer, D.C.Y.B.Y. Mudiyanse, S.Y. Jang, A. Morgan and W.J. Sung

21

Single-Event-Burnout in 1.2kV 4H-SiC Lateral RESURF Power MOSFET

Z.W. He, W. Ji and T.P. Chow

29

Investigation of Advanced Hexagonal Layouts for 650 V SiC MOSFETs

J.H. Park, S. Sundaresan, A. Agarwal, V. Mulpuri, S. Dail, Y. Dong and N. Walsh

39

A Novel Design of SiC High-Voltage Lateral PiN Diode for IC Application

X. Ma, M. Ekström and C.M. Zetterling

47

Design and Simulation of Improved Future Generation 4H-SiC JFET-R Integrated Circuits for Prolonged 500 °C Operation

P.G. Neudeck, C.M. Adams, M.J. Krasowski, D.J. Spry and N.F. Prokop

53

Optimizing Short Channel Designs in 1700 V 4H-SiC VDMOSFET

S. Rathi, L. Laborie, Y. Qi, A. Murphy, M. Bell, R. Young and D.T. Clark

59

Fast High Current Sensing SMD Resistor Network Layout for Low Inductance Insertion

A. Arrizabalaga and J. Oliver

65