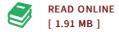


Laser Voltage Probing for Electronic Devices

By Ulrike Kindereit

Südwestdeutscher Verlag Für Hochschulschriften AG Co. KG Mai 2014, 2014. Taschenbuch. Book Condition: Neu. 222x152x23 mm. This item is printed on demand - Print on Demand Neuware - The ongoing integration density increase changes the demands on failure analysis methods for ICs drastically. Laser Voltage Probing (LVP) is an all-optical laser-based technique that acquires waveforms through the silicon backside. Although widely used in failure analysis labs, the knowledge about LVP signal origin is still very low. A detailed investigation of the signal origin is presented, using a modified LVP setup, which employed a 1319 or 1064 nm CW laser. Three new measurement methods were introduced, extracting frequency-information with a spectrum analyzer in opposition to the standard time-domain waveform acquisition with an oscilloscope. Signal-to-voltage correlations and modulation amplitude and sign maps were performed for a broad spectrum of MOSFETs: from 10 μ m (to study signal sources) to 65 nm gates (effects on structures with decreased dimensions). These low-noise frequency-domain measurement methods enabled very short signal acquisition times (seconds to minutes). A concise model, describing the interaction of laser light and device activity, was built, explaining the signal sources and enabling the forecast of signal levels for future technologies and scaling. 176...



Reviews

A new electronic book with a new point of view. it was writtern extremely completely and beneficial. Its been written in an extremely straightforward way in fact it is simply following i finished reading this publication through which really altered me, alter the way i really believe. -- Dr. Florian Runte

Complete guideline! Its such a excellent read. This really is for all who statte there had not been a worth studying. It is extremely difficult to leave it before concluding, once you begin to read the book. -- Timothy Lynch