



A New Method for the Extraction of Diode Parameters Using a Single Exponential Model

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A new method for extracting junction parameters of the single diode model is presented. A least squares method approach considers the deviation $\Delta V=f(I)$ between the experimental current-voltage (I-V) characteristic and a theoretical arbitrary characteristic. A specific case—the ΔV graph reducing to a straight line—is identified and the knowledge of the slope and of the intercept with the ordinate axis leads to the determination of the junction parameters. The method is applied to the characterization of the emitter-base junction of transistors and the results are discussed.

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