Abstracts

Full Nonlinear Analysis of Detector Using Ritz-Galerkin Theory Circuits

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The Ritz-Galerkin method provides an algebraic approach to the large-signal analysis of exponential-diode detector circuits that avoids the limitations imposed by truncated series approximations. The resulting closed-form algebraic expressions account for the details of operation in both the square-law and linear regions, and are consistent with numerical simulations. At high signal levels the results agree with the predictions of a piecewise-linear analysis.

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