16IC057 Threshold estimation for impedance spectroscopy in equivalent circuit identification

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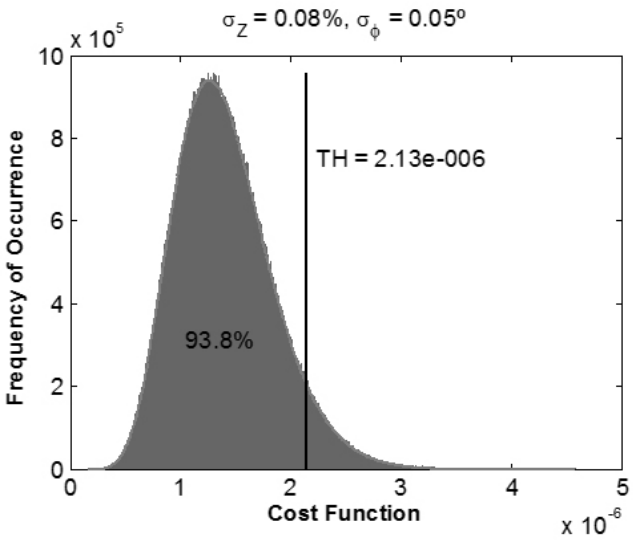
In equivalent circuit identification through impedance spectroscopy, a threshold must be defined to decide when an equivalent circuit that fits the measured impedance response has been found. However, this threshold depends on the uncertainty of the measurements. In this paper, the cost function PDF (probability density function) is analyzed to obtain a closed-form expression for the estimation of this threshold.



Histogram of the cost function for with both magnitude and phase uncertainty. Red line corresponds to the estimated distributions.

16IC089 A New Peak Detector Based on Usage of CCCIIs

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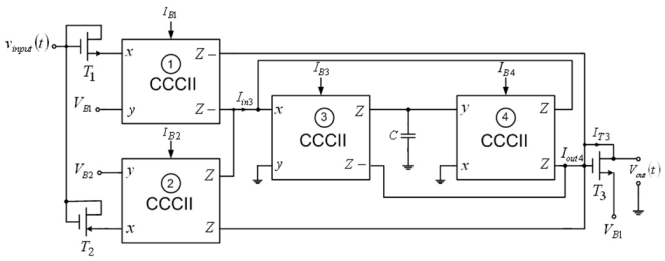
In this paper an electronically tuneable current-mode peak detector has been presented. It is easy to fabricate in IC form to use in battery-powered or portable electronics equipments such as wireless devices. The circuit provides linear variation of the DC output voltage with the input voltage, with the output voltage amplitude being almost the same as the peak input voltage. The simulation results confirm the theory well. The ripple and THD of the output voltage of the proposed circuit is much lower than in previously realized rectifiers. The proposed circuit has high precision, wide bandwidth, and high accuracy.



The proposed circuit of the peak detector