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Four point probe geometry modified correction factor for determining resistivity

Abstract

The four-point probe technique is well known for its use in determining sheet resistance and resistivity (or effective resistivity) of thin films. Using a standard four-point probe setup, relatively large area samples are required. The convention is that the distance from any probe in the probe arrangement should be at least ten times the probe spacing from the sample boundary in order to use the fixed correction factor. In this paper we show, using computer modelling, how accurate measurements can be made using appropriate correction factors for samples that are either small or of any thickness. For the significant extent of variations used, the correction factor does not vary significantly.

Keywords — Resistivity, sheet resistance, test structure