Study of the Thermal Stability of Copper Contact Junctions in Si/SiO2 Substrates

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Abstract: The results of a comprehensive study of the structural-morphological and thermodynamic characteristics of the electrochemical precipitation of Cu in transition holes with a barrier layer of TiN in Si/SiO2 substrates by scanning electron microscopy (SEM) and differential thermal analysis (DTA) are presented. The temperature range that determines the heat resistance of copper (up to 750°C) and the temperature range (up to 886°C) that determines the thermal stability of the composite as a whole, as well as the ability to maintain the chemical composition and ordered structure at elevated temperatures, are found.

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