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# Characteristics of low-resistance path in silicon suboxide thin films

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*MOS-structure's current-voltage characteristic analysis for different temperatures has been carried out. The paper focuses on low-resistance conductive path in the non-stoichiometric silicon oxide. By means of various scale drawing, it has been identified that Schottky effect limits the electrical current. The potential barrier is calculated by temperature dependence of current-voltage characteristic and is 0.12 eV. It is shown that increase of the sample temperature by 200K results in essential decrease of the effective permittivity of the low-resistive path's substance. It indicates that the orientation polarization takes place. We believe such behavior to be caused by high concentration of charged traps in the silicon suboxide matrix. Being three-coordinated silicon atoms, these traps can be oriented more easily in the electric field as compared with four-coordinated ones.*

**Keywords:** *MOS-structure, non-stoichiometric silicon oxide, Schottky effect, permittivity.*

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