

Surface Properties of Proton and Gamma Irradiated End-Cap Strip Mini Sensors

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The electrical characteristics of different types of end-cap miniature silicon strip sensors, ATLAS12A, were evaluated before and after proton and gamma irradiation. We report on the bulk damage aspects, including the increase of leakage current and evaluation of the full depletion voltage as well as the surface damage, including the decrease of inter-strip resistance, changes in inter-strip capacitance and the effectiveness of punch-through protection structure. It was verified that different geometries of end-cap sensors do not influence their stability; the sensors should provide acceptable strip isolation and new gate PTP structure functions well, even at the highest tested proton fluence $2E15$ neq/cm².

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