

## THE INFLUENCE OF X-RAY IRRADIATION ON SILICON MOS-TRANSISTORS

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### S u m m a r y

The X-ray induced effects in silicon n-channel MOS-transistors with the 4 ... 10  $\mu\text{m}$  channel length are studied with application of the method of subthreshold-current curves. It is found that the X-ray induced charge  $Q_{0t}$  in undergate  $\text{SiO}_2$  dielectric has the dominant influence on a shift of the threshold voltage. The radiation sensibility rises with application of a positive potential to the gate during irradiation of the transistor. The obtained results are interpreted in the framework of the model of radiation-induced charges  $Q_{0t}$  in undergate dielectric and  $Q_{it}$  in surface states of the Si-SiO<sub>2</sub> interface. It is supposed that hydrogen atoms are responsible for the creation of these charges.