

Study of radiation hardness of linear voltage regulator

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Received 17.07.2023; revised 28.08.2023; accepted 6.10.2023

In the present work, the experimental estimation of the effect of the electrical modes of operation of the integrated circuit of a linear positive voltage regulator (KREMNY EL GROUP) with nominal output voltage $V_{out} = 9\text{ V}$ on the total ionizing dose radiation hardness using the developed hardware-software complex based on the RIK-0401 X-ray equipment was carried out. It has been experimentally established that the most sensitive parameters of the voltage regulator to the effects of the total ionizing dose are the output voltage and the minimal voltage drop. Analytical dependences of the main parameters of the voltage regulator on the value of the total ionization dose during radiation exposure have been obtained.

Keywords: voltage regulator, electrical characteristics, integrated circuit, total ionizing dose effects.

DOI: 10.51368/2307-4469-2023-11-5-446-454

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