
Major factors of operational reliability of powerful transferring installations

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The authors present research results, major factors of operational reliability of radioelectronic devices, the phenomena and processes of elements of technical devices occurring in materials depending on the variables' factors. Influence of these processes on the change of material properties and parameters of the elements, on their durability and reliability is considered. Acquisition ways of information on reliability of the radioelectronic blocks aimed at reliability increase by means of specifying calculation method, of design perfection, manufacturing techniques and service regulations, functioning and repair control are offered. In order to obtain reliability data on radio components, elements and devices as a whole the article presents analytical calculations of durability, bench and control fail-safe tests, results of operation. Calculations to determine minimum necessary number of observations of the block prefailure life are carried out. Fundamentals of the theory of mathematical statistics are epitomized. A considerable attention is given to the issues of ensuring reliability of the elements used in radio electronics. The checking procedure of the elements' modes by parameters which have overload capacity is described. Calculation examples are given. A detailed description is offered on measures of reliability growth of the equipment in the course of its designing and manufacturing. Issues of reliability preservation are also considered.

Keywords: *reliability, refusal, the forecast, the theory, distribution function, operating time, failure rate, the radio-electronic equipment, durability, the mathematical statistics.*

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