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INCREASING OF THE EFFICIENCY OF POWER ELECTRONICS DEVICES BY THE CONTROL OF CHARGING TIME OF THE CAPACITORS IN THEIR CIRCUITS

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Abstract

A method for controlling the output parameters (voltage and amplitude of pulses) of devices of power electronics by controlling the charging time or recharging of capacitors included in these devices and using the chains of their capacitive filters is proposed. Controlled rectifiers based on combining the Gretz and Latour circuits and a magnetic - semiconductor high-voltage pulse generator with such a rectifier at its input are considered. It is shown that the application of the proposed control method makes it possible to increase the rectified voltage by almost two times without using a transformer and to obtain a "hard" external characteristic of the rectifier. It has been proved possible to obtain any ratedl value of rectified voltage in the range from 300 to 600 V with a single-phase 220 V supply, which extends the capabilities of developers of converter devices. References 5, figures 4, table 1.

Key words: Latour-Grets rectifier, secondary power supply, external characteristic, voltage stabilization, magnetic-semiconductor pulse generator MSGP.

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