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Micro-inverter for photovoltaic modules

Vladimir Berzan, Iurie Ermurachi, Sveatoslav Postoroncă, Cociu Radu

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Abstract

A new architecture of a microinverter for the direct junction of photovoltaic modules to the electric network at industrial frequency has been presented in the paper. The conversion of the energy generated by the photovoltaic module into the alternating current is performed in a single stage. It has been achieved the yield of the microinverter equal to 97%, which was experimentally determined. The parameters of the experimental sample of the microinverter are the following: input voltage 48V, output voltage 230V at the frequency of 50 Hz, nominal power 300 W. The switching frequency of power semiconductor device is 100 kHz.

Keywords: power semiconductor devices, capacitors, voltage control, frequency, inverters, junctions

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