

BUCK REGULATOR CIRCUITABSTRACT OF THE DISCLOSURE

A buck regulator circuit provides a low voltage, e.g., about 15V, power source, directly from a variable high-voltage dc bus voltage that varies from 250V to about 450V. A monolithic gate driver circuit is used to drive the switching device, e.g., a MOSgate transistor, which delivers the high voltage dc to the load output node via a charging inductor for controlled time periods. The control principle for controlling the on and off times of the transistor (with the monolithic gate driver circuit) relies on turning on the transistor for fixed time periods that are equal to the intrinsic delay of the gate driver circuit. In contrast, the off period of the switching device is varied to regulate and maintain the output voltage at a constant value, independent of the input dc bus voltage or of the output current.

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