INDUCTIVE ENERGY STORAGE PULSE CIRCUIT

Can inductive energy storage be used to generate high-current pulses? The application of inductive energy storage in the generation of high-current pulseshas attracted considerable attention during recent years. In this article,

How does a pulse forming circuit work? Using an inductive storage technology and pulse forming circuits, a shorter pulse current rising time is obtained. The inductor energy is fed back to the input source not discharged to the load, resulting in a fast pulse trailing edge and energy saving.

What is a switched mode multiphase interleaved pulsed power supply topology? This paper proposed a switched mode multiphase interleaved pulsed power supply topology with energy recovery and inductive storagebased on the interleaved buck converter and pulse forming concept. The proposed topology was configured as a hybrid combination of interleaved buck topology and multiple switches,which connected to the load.

Why is pulse current response faster than conventional Buck driver? The inductor energy is fed back to the input source not discharged to the load, resulting in a fast pulse trailing edge and energy saving. Thus the pulse current response observed when using this proposed technique is found to be much faster when compared to the conventional interleaved buck driver.

What is pulse power supply (PPS)? The development of laser power , has enhanced the demand for pulse power supply (PPS). Being one of the critical technologies of a laser system, the stability, pulse rise time, eficiency, and power density of the PPS affect the overall performance of a laser system. Therefore, the PPS has to be carefully considered.

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Does inductor energy feedback occur? Fig. 10(c) shows that there is no inductor energy feedback,the inductor energy is discharged through the load,and with time constant ?? = L???RL,the simulation falling time is approximately 119.4 ? 1/4 s which is much larger than the time of current falling edge when energy feedback occurs.

A compact inductive energy storage (IES) pulsed-power generator that is driven by a novel 13 kV silicon carbide (SiC)-MOSFET is developed and molded into a compact modified TO-268. In this article, the switching ???

Yu Liang, Sugai Taichi, Tokuchi Akira, et al. Repetitive pulsed power generator based on inductive-energy-storage pulse forming line[J]. High Power Laser and Particle Beams, 2018, 30: 025006. doi: ???

The circuit simulations, utilizing an inductive energy storage pulse circuit, confirm the feasibility of the magnetic crowbar technique in improving trailing edge generation. The ???

The solid-state Marx pulse generator is widely used in various fields such as biomedical electroporation, food processing, and plasma material modification. In this paper, an inductor is chosen as an isolation device and by ???

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Abstract: Pulsed power has been generated by using either capacitive energy storage (CES) or inductive energy storage (IES). In this article, the combination of CES and IES, which is called ???

FIGURE 1. A laser-diode driver uses inductive energy storage with a hysteretic, current-mode, buck regulator (top). Schematic block labeled "I Sensor" is the low-bandwidth current sensor used to monitor the current in the ???

High-voltage square-wave nanosecond pulse generator has a broad application prospect in the fields of atmosphericn low-temperature plasma, biomedicine and power equipment detection. ???

Currently, pulsed adders are used as pulsed voltage sources maturely. However, their use as pulsed current sources is significantly limited due to circuit impedance and the characteristics of power devices. This paper ???

A comprehensive circuit analysis of basic inductive energy pulsed power systems has been conducted. In most practical systems, the inductive energy is stored in a lumped inductor by a ???

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Figure 4 shows (a) the circuit diagram and (b) the typical output voltage of the inductive energy storage system pulsed power generator used to drive non-thermal plasma reactors. The electrical

By adopting a simple inductive energy storage (IES) circuit [7] and the "triggerless" ignition method [8], the mass of the propulsion system can be decreased to less than 200 g, ???