

Title: Solid State Marx Modulator with Blumlein Stack for Bipolar Pulse Generation

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Abstract: Sub-nanosecond bipolar high voltage pulses are a very important tool for food processing, medical treatment, waste water and exhaust gas processing. A Hybrid Modulator for sub-microsecond bipolar pulse generation, comprising an unipolar solid-state Marx generator connected to a load through a stack Blumlein system that produces bipolar pulses and further multiplies the pulse voltage amplitude, is presented. Experimental results from an assembled prototype show the generation of 1000 V amplitude bipolar pulses with 100 ns of pulse width and 1 kHz repetition rate.

Author Keywords: Sub-Microsecond Bipolar Pulses; Pulsed Power; Solid-State Marx Generator; Blumlein Stack Line

KeyWords Plus: Design; Power

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