

SolarInnovate Energy Solutions

Pulse generator energy storage



Overview

What makes a pulse generator portable?

To achieve the pulse generator that has portable features, it must be designed in a compact size. Since the pulse generator needs a high voltage to operate, it must be equipped with a high-voltage source where a transformer is commonly employed. This, however, will cause the pulse generator to be heavy, bulky, and consume space.

What is high-voltage square-wave nanosecond pulse generator?

Abstract: High-voltage square-wave nanosecond pulse generator has a broad application prospect in the fields of atmospheric low-temperature plasma, biomedicine and power equipment detection. Pulse forming line is an effective way to realize high-voltage square-wave nanosecond pulse output.

How can a high voltage pulse generator be reliable?

To have a reliable high-voltage pulse generator, a technique of capacitor discharge was employed. Four units of capacitor rated $100\ \mu\text{F}$ $1.2\ \text{kV}$ were connected in series to produce $25\ \mu\text{F}$ $4.8\ \text{kV}$ which were used to store the energy of approximately 200J .

What are the advantages of nanosecond pulse generator based on capacitive energy storage?

The common nanosecond pulse generator is based on capacitive energy storage. Compared with the nanosecond pulse generator based on capacitive energy storage, the inductive energy storage has outstanding advantages in energy storage density, miniaturization of the device, and less influence of loop inductance.

Which applications require a high-voltage pulse generator?

1. Introduction Cell electroporation therapy (EPT), genetic therapy, ultrasonic cleaning, chemical-free bacterial decontamination, and medical imaging are

the examples of vast applications that require a high-voltage pulse generator which can provide pulse width in a scale of a nanosecond, microsecond, and millisecond [1 – 11].

Can a compact high-voltage pulse generator be used as an electroporator?

This indicates that the concept that is trying to be proven has been successfully achieved. Therefore, the compact high-voltage pulse generator that has been developed in this study is ready to perform as an electroporator for PEF applications.

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