

What is a portable DC power supply?

Such a system requires portable DC power supplies providing voltages up to 50 kV but with the feed from low-voltage batteries. Taking into account these requirements, a portable DC power supply has been developed on the basis of silicon carbide (SiC) power device technology.

What is a high voltage DC power supply?

The design scheme of high-voltage DC power supply is experimentally verified, and the results show that the single-module output voltage is 50 kV, and the output power is about 800W, which can meet the high-power input requirements by stacking multiple modules.

Does a power supply need a DC-DC converter?

For products designed to work from mains power, the power supply must convert from AC mains to a DC output voltage - using an AC-DC power supply. Within some applications, more than one DC voltage might exist, so further power conversion is required - using a DC-DC power converter.

What is a low voltage DC power supply?

Electronics-based products and applications generally operate on low voltage DC supplies. For products designed to work from mains power, the power supply must convert from AC mains to a DC output voltage - using an AC-DC power supply.

What is the difference between a portable DC supply and a generator?

The portable DC supply offers a very high voltage gain: input voltage is 24 V, while the generator requires supply voltages up to 50 kV. Thus, the system contains two stages designed on the basis of SiC power devices operating with frequencies up to 100 kHz.

What is a portable DC generator?

This generator is developed to be a part of an electromagnetic cannon providing very high voltage and current pulses aiming at the destruction of electronics equipment in a specific area. The portable DC supply offers a very high voltage gain: input voltage is 24 V, while the generator requires supply voltages up to 50 kV.

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The paper describes major issues related to the design of a portable SiC-based DC supply developed for evaluation of a high-voltage Marx generator. This generator is developed ...

An in-depth guide to power supply design. Explore the build or buy decision, the different topologies, design requirements and power supply standards.

The following sections, present the fundamentals and design considerations of various portable DC-DC conversion topologies including Buck, Boost, non-inverting Buck-Boost, Flyback and ...

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