

High voltage power supply for novel pulsed field ablation system

INDUSTRY

Electrosurgery

SOLUTION

UltraVolt® High Power C Series, UltraVolt® AA Series

EQUIPMENT

Pulsed Field Ablation

CHALLENGE

A major medical device company seeks to design a novel Pulsed Field Ablation System utilizing a non-thermal energy source with proprietary high voltage electric fields to overcome challenges of traditional temperature-based ablation modalities. They require a high voltage DC/DC converter for a capacitor charging application. The customer seeks a vendor with strong technical support to rapidly develop highly reliable high voltage solutions.

SOLUTION

Advanced Energy's recommended solution was the UltraVolt® High Power C series of high voltage regulated DC-to-DC converters.

Requiring up to 2000V of tightly regulated output power, the 2C24-P250 (providing up to +2000V/250W) was provided as a sample.

This power supply met the customer's technical requirements, including suitability for high-energy pulsers, amplifiers, and discharge devices with large capacitance, fast repetition rates, and high current loads. The customer was extremely satisfied with the performance but requested a control connector that can



Fig. 1. UltraVolt® High Power C series 2C24-P250

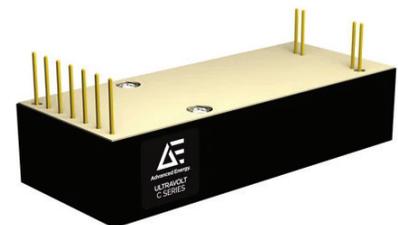


Fig. 2. UltraVolt® AA series 1/16AA24-P20

be secured with screws and was concerned with cooling the unit. To address these requirements, Advanced Energy added the - DA option (DB15 d-sub connector) and -H (finned heatsink) option. A new sample with -DA and -H was provided in less than 20 business days.

After the customer qualified the 2C24-P250, they required a low power, adjustable voltage DC-DC converter. Advanced Energy engineers recommended a standard UltraVolt AA series 1/16AA24-P20 (+62V/20W) solution. It is an off the shelf, well regulated, adjustable 0-62V power supply, with low ripple and good stability.

AE provides the following advantages:

- World-class service and consulting from technical experts
- Reduced lead-time for initial samples
- Willingness and ability to collaborate on future requirements
- Fanless solutions protect sensitive system electronics from vibration and air disturbances

RESULT

By choosing Advanced Energy's UltraVolt® AA and UltraVolt® High Power C Series, the customer satisfied their requirements for highly reliable HVPS stability, with high power density and low ripple. As a result of the exceptional technical support and fast turnaround of samples, the customer was able to accelerate their develop cycle and gain FDA approval.

CONCLUSION

Advanced Energy's UltraVolt® High Power C Series is designed to meet the fast rise time required by novel pulsed field ablation applications utilizing state-of-the-art power conversion topology. Designed and built utilizing state-of-the-art power-conversion topology, the AA Series DC-DC modules offer indefinite output short-circuit protection and more than 1.25M hour MTBF at 65°C in a fixed-frequency, low-stored-energy design.

The short lead time and exceptional technical support enabled an accelerated development cycle and improved speed to market. With Advanced Energy's broad portfolio of medical solutions, we are well equipped to meet all your high and low voltage application requirements.



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