

High voltage power supply required for use in shockwave-based lithotripsy system

INDUSTRY

Medical Treatments – Shockwave Therapy

SOLUTION

UltraVolt High Power C series

EQUIPMENT

Shockwave Lithotripter

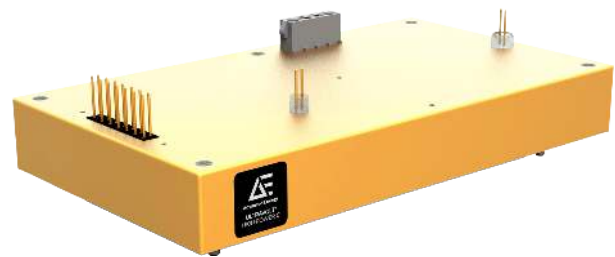
CHALLENGE

A leader in shockwave-based systems for urology, cardiovascular, and orthopedic applications is developing a versatile, easy-to-use device to break-up calcium deposits in patients. The system uses a sparkplug-like electrode that is submerged in water to produce an ultrasonic shockwave that can be targeted at calcified stones. The system requires a high voltage DC-DC power supply to charge a capacitor that discharged into the sparkplug like electrode at 100 cycles per second. Additionally, the power supply needed to withstand the high EMP produced when the sparkplug like electrode was fired.

SOLUTION

Powering the system required a pair of 250 W 25 k VDC power supplies (used in parallel) to charge the capacitor within the system. Working closely with the customer and utilizing Advanced Energy's expert knowledge of high voltage and cap charging applications, the team was able to satisfy all of the customer's requirements to bring their device through testing and FDA approvals.

Additional protection features were implemented to withstand the constant high current discharges. Advanced Energy's Ultravolt® High Power C series provides extensive protection and reliability designed to withstand the punishing requirements of the capacitor charging system. This solution also provided the lowest total cost of ownership for the customer.



Additional features of the UltraVolt High Power C series:

- Output volt ranges from 125 V to 60k VDC maximum
- Choice of 60, 125, or 250 W maximum power
- Factory-configured performance, control and integration options
- UL/cUL recognized, IEC-60950-1, CE-Mark (LVD and RoHS)

RESULT

Advanced Energy's Ultravolt High Power C series was able to provide the customer with the reliability needed in their application. Using a partnership approach, the customer was able to bring their system through testing trials at an accelerated pace.

CONCLUSION

The UltraVolt High Power C series can support a variety of medical high voltage and capacitor charging applications. Advanced Energy's communication with the customer throughout development allowed them to bring their systems through testing and certification processes faster.

In addition to modifying the power supply to protect it against any high-current discharges experienced in the customer's system, we also provided the customer with alternate output lead options as well as reverse enable logic. These modifications allowed them to fit our solution seamlessly into their system, thereby permitting accelerated testing trials which translated into favourable product positioning status within the ever-growing medical equipment market.



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