

High Voltage Power Supply Enables EHD System Performance

INDUSTRY**Printing****SOLUTION****UltraVolt HVA Series****APPLICATION****Electrohydrodynamic (iEHD) Jet Printing****CHALLENGE**

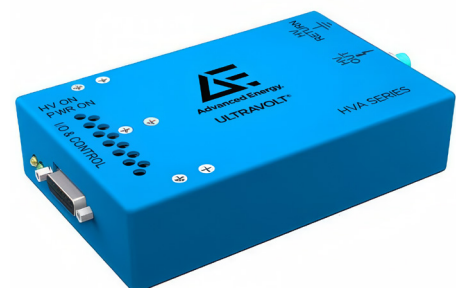
A cutting-edge semiconductor company has developed an innovative solution for high resolution & ultra-fine printing technology, based on electrohydrodynamic fluid control. iEHD jet printing is a near-field jet printing and patented technology using electrostatic principles. Compared with the conventional EHD jet printing technology, iEHD allows more stable and reliable liquid ejection and dispensing for ultra-fine patterns. Their requirement was for a precision, rapid-reversing, low-wattage 4kV HVPS. The power supply was required to be capable of slewing from +4 kV to -4 kV and swinging cleanly through zero volts. This demanded a high voltage amplifier. The customer also requested that we attempt to reduce the output ripple, as excessive ripple would have a deleterious effect on the integrity of the droplet size and patterns. Finally, the customer's end user is a global, high-visibility manufacturer of smart phones, so on-time delivery was extremely critical to keep pace with their ongoing product release schedule.

SOLUTION

Ultravolt's HVA series (P/N 4HVA24-BP-F) was selected. The bipolar nature of this power supply provided the +/-4 kV output voltage swing their application required, and the addition of the "Ripple Stripper" option (-F suffix) further reduced the output ripple.

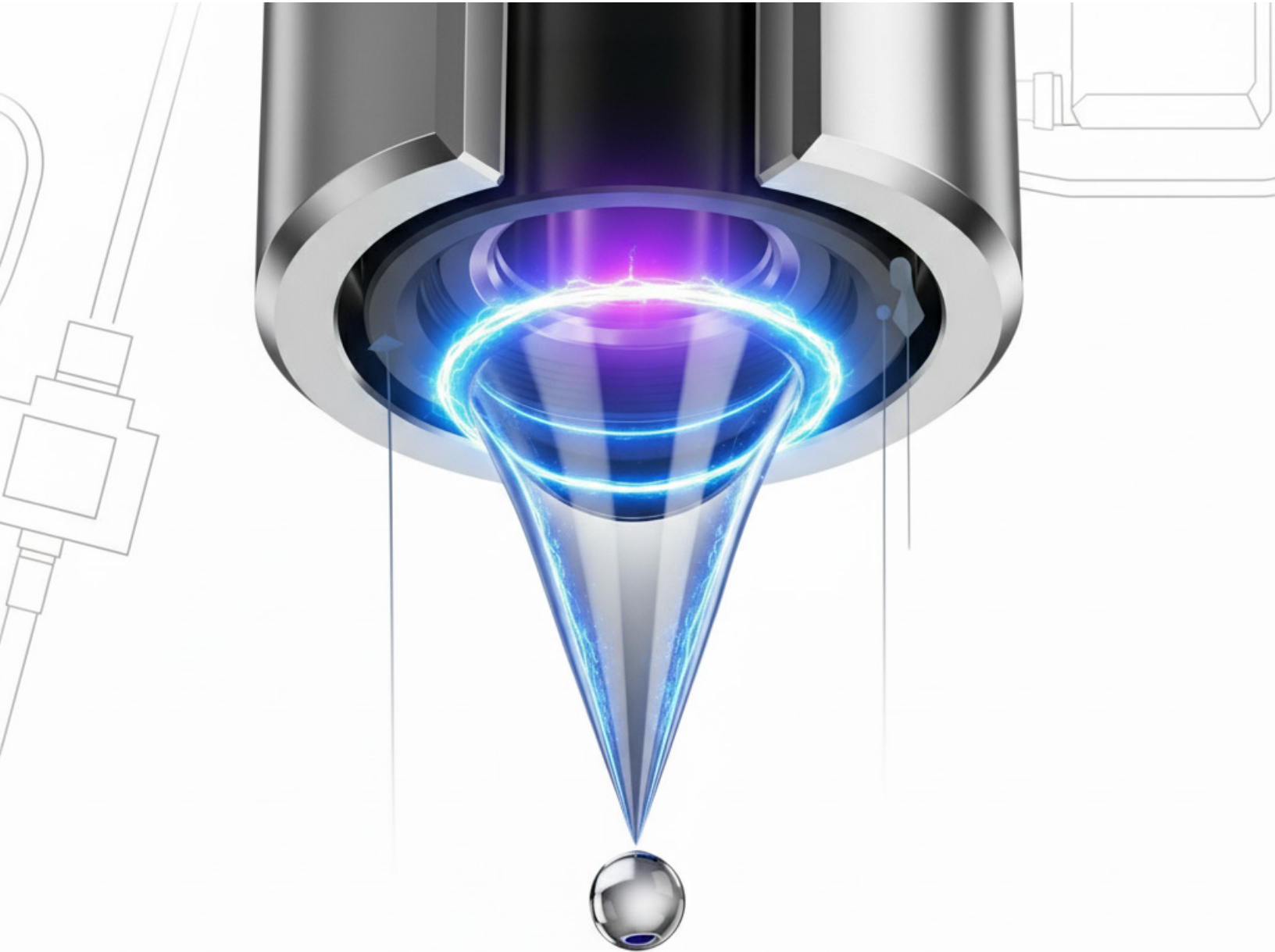
Among the customers' most valued attributes of the HVA Series:

- AE's expertise to equip the power supply with a ripple-reduction feature
- The ability to precisely and rapidly slew over an 8000 V range with no zero-switching noise.
- Ppm-level line & load regulation
- The HVA series' excellent dynamic response during the EHD printing process
- AE's skill to modify this complex product within relatively short lead-times



RESULT / CONCLUSION

The HVA series enabled this customer to take advantage of their machine's capabilities by powering it with a precision HV product, allowing them to fully achieve their goals of developing the most advanced ultra-fine printing tool available. Along with AE's excellent customer support and technical expertise, this customer has increased confidence in AE's capabilities as a renowned supplier of precision high voltage power. They have also agreed to work with AE on future developments which may require higher-power versions of the same power supply.



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