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High Density Capacitors for Pulsed Power Applications

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In our continued effort to reduce the size, weight, and power (SWAP) of high density capacitors we have purchased and tested two experimental capacitor designs from two different vendors. These are critical components for energy storage for a variety of applications. These are paper/foil capacitors with high discharge current capability which are used in Marx bank configurations, and metalized-film energy-storage capacitors which are much more compact but have limited current capability. Tests have included lifetime testing at expected operational current and voltage, testing of some versions at low temperature, and high-current/low-voltage testing of metalized film capacitors, looking for evidence to predict capacitor life time at full voltage. We describe and summarize tests of both types of these capacitors from both vendors.

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