



Eaton supercapacitors provide power delivery for smart metering

The rise in “smart” metering has ushered in a new era for utility companies. Smart meters enable gas, water and electricity utilities to monitor consumers’ consumption more precisely, providing insight for technology and pricing decisions and empowering their customers to make informed choices in home energy use. These digital meters also can inform a company of a power outage or remotely switch electricity services on or off. In times of power or equipment failure, supercapacitors provide enough backup power to “push” critical consumer usage data to utilities, potentially saving companies significant revenue.

Making sure this technology is powered efficiently and reliably is critical, and Eaton supercapacitors play an

important role in keeping the lights, gas and water on.

Eaton supercapacitors are high-reliability, high-power, ultra-high capacitance energy storage devices that are ideal for smart metering. Utilizing electric double-layer capacitor (EDLC) construction, combined with proprietary materials and processes, allows Eaton to offer a wide variety of capacitor solutions tailored to applications for backup power, pulse power and hybrid power systems. These supercapacitors can be applied as the sole energy storage or in combination with batteries to optimize cost, lifetime and run time.

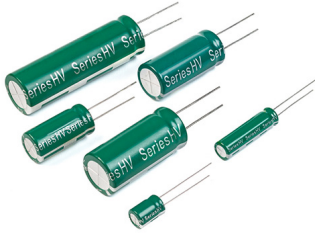
The product lines feature an ultra-low ESR for high power density with environmentally friendly materials for a green power solution. Supercapacitors

can withstand most indoor and outdoor environments with operating temperatures of -40 °C to +85 °C. They help reduce maintenance requirements and provide a long life and cost-effective energy storage option.

Thanks to supercapacitors such as Eaton’s, today’s utility companies and consumers are making smarter, more responsible and cost-saving decisions on energy use. Most importantly, everyone benefits from consistent and reliable delivery of gas, water, and electricity.

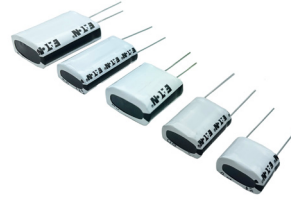
www.eaton.com/supercapacitors

Suggested products



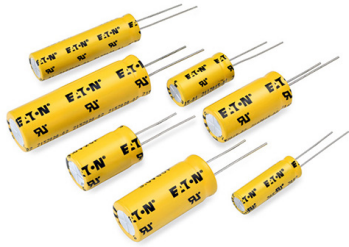
HV supercapacitors

Eaton's HV family offers high power capability in compact package sizes. The high capacitance of 1 F to 100 F enables long-term power backup and high peak current capability. These supercapacitors offer an ultra-low ESR (levels as low as 12 mΩ) that ensures minimal voltage drop during peak current demand, increasing the amount of power that can be delivered to the load. The HV supercapacitors are configurable in series and parallel, increasing the voltage rating and energy storage capability.



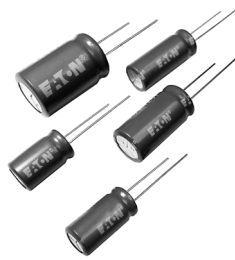
PHVL supercapacitors

Eaton's PHVL offers 3.9 V operating voltage and 5.0 V surge voltage with ultra-low self-discharge, low leakage current (10-20% of Eaton PHV product) and high power density with eco-friendly materials for a green power solution. For smart meters operating on a primary battery, the PHVL solution extends the battery life over PHV solutions. Likewise, in low-power applications, PHVL provides a 20% longer backup time than battery-only solutions. In emergency power applications that could be disconnected from a charging source, these solutions can also extend the backup time.



TV supercapacitors

Eaton's 3-volt TV supercapacitors enable higher performance, longer operating life or lower cost designs for many smart meters. The TV products offer a 20 percent increase in stored energy and peak power density by increasing the operating voltage and lowering the ESR. As a result, the usable energy can increase up to 70 percent. The TV family provides energy storage for backup power, ride-through, RF radio transmissions and other pulse power requirements.



Hybrid supercapacitors

Eaton's HS / HSL / HSH hybrid supercapacitors are compact-footprint, high-power energy storage devices. Each supercapacitor has two electrodes, one similar to that of a battery, and the other, a standard supercapacitor electrode. Consequently, their energy densities are closer to those of batteries and up to 10 times higher than standard supercapacitors.

The HS / HSL hybrid cylindrical cells offer capacitance values between 5 F and 220 F, while the HSH offers higher capacitances from 3.0 F to 1400 F. Both products have a maximum working voltage of 3.8 V, an operating temperature range from -25 °C to +70 °C / +85°C (3.5V), and ultra-low ESR. HS / HSL / HSH supercapacitors can be utilized as sole energy storage or combined with batteries to optimize system cost, lifetime, and runtime. While HSL / HSH supercapacitors are optimized for lower temperatures, down to -25 °C, HS supercapacitors have an extended range to +85 °C and are optimized for higher temperatures.

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Printed in USA
Publication No. 10738 BU-ELX22396
April 2025

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