

Supercapacitors Deliver High Performance For Battery-Powered Products

[AVX's](#) SCP series PrizmaCap standard and custom supercapacitors are said to have the widest operating temperature range of any supercapacitor technology currently available on the market (-55°C to +90°C), and also the highest capacitance (3.5 F to 15 F) and energy density (1.14 to 2.43 Wh/kg) of any small form factor (SFF), prismatic, electric double-layer capacitor (EDLC) rated for more than 1 F currently available on the market. In addition to these benefits, the SCP series supercaps feature a very lightweight (< 2 g) and low-profile form factor (0.8 mm to 2 mm) based on propylene carbonate electrolyte technology, which has been proven safe and effective in energy storage applications including lithium-ion batteries (see the figure).

The supercapacitors can be used alone or in conjunction with primary or secondary batteries to extend backup time, improve battery life, and provide instantaneous power pulses in energy storage, energy and power holdup, pulse power handling, and battery assist applications within a range of consumer, commercial, and industrial electronics that prioritize size, weight, and power (SWaP) optimization. The series is especially well suited for use in end products such as wearable and handheld devices, industrial equipment, wireless keyboards, power peripherals, tablets, and e-readers.

The SCP series supercapacitors are currently available in three standard form factors with a 48-mm x 45-mm footprint, and one of three ultralow height profiles of 0.8 mm, 1.3 mm, or 2.0 mm. They also come in two fixed-position, surface-mount terminals compatible with hand soldering or—for more reliable connections—AVX Interconnect's economical and ultralow-profile 70-9159 series STRIPT two-piece, single contacts.

The three standard solutions (SCPB08A355SNA, SCPB13A855SNA, and SCPB20A156SNA) are rated for up to 15 F capacitance, 2.1-V electrical potential from -55°C to +65°C, 8.63-A peak current, and 2.43-Wh/kg energy density. These devices operate over the previously mentioned -55°C to +90°C range with appropriate derating to 1.1 V.

They are also rated for maximum DCL as low as 50 μ A after 72 hours of operation, maximum ESR as low as 30 m Ω at 1 kHz and 55 m Ω at dc, and up to 2,582-W/kg power density and 0.0092-Wh maximum energy. Additional off-the-shelf solutions with standard footprints and capacitance values will be released as they are qualified. Meanwhile, custom SCP series supercapacitors are available with customer-specified footprints and capacitance values spanning 1 F to 500 F.

Currently made in the U.S., the SCP Series PrizmaCap supercapacitors are fully tested for life cycle, high-temperature load life, temperature characteristics, vibration resistance, and humidity characteristics prior to being packaged and shipped in trays to ensure optimal performance. For more information, see the PrizmaCap-SCP Series | SuperCapacitors [page](#). For immediate availability, visit Mouser Electronics. For all other inquiries, email inquiry@avx.com.



Figure. The SCP series PrizmaCap supercapacitors are said to have the widest operating temperature range of any supercapacitor technology, the highest capacitance and energy density of any small form factor, prismatic, EDLC >1F, and an extremely lightweight and ultralow-profile package. These supercapacitors feature a 48-mm x 45-mm footprint, and one of three ultralow height profiles of 0.8 mm, 1.3 mm, or 2.0 mm.