

AVAX[®]

PRIZMACAP RELEASE

2021



PRIZMACAP™

SCP Series

- Propylene carbonate (PC) based electrolyte technology
- Initial standard capacitance offerings: 3.5F to 15F
 - Qualifying more sizes and capacitance values
- Operating temp range: -55°C to +90°C
- Rated voltage: 2.1V up to +65°C, 1.1V derating for extended temperature performance up to +90°C
- ESR as low as 30mΩ at 1 kHz, 55mΩ at DC
- Leakage current ratings ~50μA
- Low profile starting from 0.8mm and ultra-light weight from <2 grams
- Customizable footprint a function of necessary tooling/potential NRE associated
- Utilize AVX Interconnect Single 2 Piece Contacts: BTB, 70-9159 Series connectors instead of hand soldering
 - Exact AVX PN: 709159001402006



- Standard offered part numbers so far:
 - SCPB08A355SNA
 - SCPB13A855SNA
 - SCPB20A156SNA
- Key selling points:
 - Extremely low profile starting from 0.8mm max thickness and lightweight from <2 grams
 - Widest operating temperature range of any supercapacitor technology: -55°C to +90°C
 - Highest capacitance (energy density) offering in prismatic form factor in the market with no direct competition
- Datasheet link (subject to be updated regularly):
 - <https://datasheets.avx.com/AVX-SCP-Series.pdf>

RATINGS & PART NUMBER REFERENCE

AVX Part Number	Length (mm)	Width (mm)	Max Thickness (mm)	Rated Capacitance (F)	Capacitance Tolerance	Rated Voltage (V)	Rated Temp. (°C)	DCL Max @ 72 Hrs (µA)	ESR Max @ 1 kHz (mΩ)	ESR Max @ DC (mΩ)	Peak Current (A)	Power Density (W/kg)	Max Energy (Wh)	Energy Density (Wh/kg)
SCPB08A355SNA	48	45	0.8	3.5	+30%/-10%	2.1/1.1*	65/90*	50	110	200	2.16	1413	0.0021	1.14
SCPB13A855SNA	48	45	1.3	8.5	+30%/-10%	2.1/1.1*	65/90*	80	50	80	5.31	2380	0.0052	1.87
SCPB20A156SNA	48	45	2.0	15	+30%/-10%	2.1/1.1*	65/90*	110	30	55	8.63	2582	0.0092	2.43

*with appropriate voltage derating operating temperature can be extended to 90°C

QUALIFICATION TEST SUMMARY

Test	Test Method	Parameter	Limits
Life Cycle	Capacitors are cycled between rated voltage and half-rated voltage under constant current at +25°C for 500,000 cycles	Capacitance Change ESR Appearance	≤30% of spec value ≤200% of spec value No remarkable defects
High Temperature Load Life	Temperature: +65°C Voltage: Rated Voltage Test Duration: 2,000 hours	Capacitance Change ESR Appearance	≤30% of spec value ≤200% of spec value No remarkable defects
Storage Temperature Characteristics	Storage Duration: 1 year No Load Temperature: +25°C	Capacitance Change ESR Appearance	≤30% of spec value ≤200% of spec value No remarkable defects
Vibration Resistance	Amplitude: 1.5mm Frequency: 10 ~ 55Hz Direction: X, Y, Z for 2 hours each	Capacitance Change ESR Appearance	≤30% of spec value ≤200% of spec value No remarkable defects
Humidity	Voltage: Rated Voltage RH: 90% Temperature: +60°C Test Duration: 1,000 hours	Capacitance Change ESR Appearance	≤30% of spec value ≤200% of spec value No remarkable defects

- Wearables
- Handheld Scanners/Wireless Electronics
- High Temp Industrial
- Bluetooth Keyboard
- Battery Assist
- Power Peripherals
- Tablet/E-Reader
- High Reliability
- Space Constrained/Lightweight Designs

SAME TYPICAL APPLICATIONS AS OUR OTHER SUPERCAP OFFERINGS, COUPLED WITH A PRIMARY OR SECONDARY BATTERY

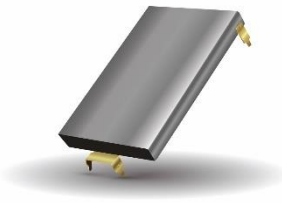
This technology has been teased in the past as very customizable, and yes that is still possible, but...

- We only have ability to manufacture approximately three defined form factors today
 - Standard offerings will have much shorter leadtime
 - Currently in the datasheet you will only see 48X45mm product and that's because we are qualifying the other form factors that will require 1-2 qtrs before release into the market
- Custom requests will be considered based on manufacturing feasibility and opportunity size
 - NRE/tooling fees TBD based on the design and opportunity size
 - Requires approximately 2 months to design and purchase required tooling
 - Could take up to another 2 months to manufacture initial samples and qualify the product for reliability

BESTCAP®

BZ Series

- BestCap® is a very low ESR pulse SuperCapacitor based on its non-hazardous proton activated polymer system
- Capacitance Range: 4.7mF to 1000mF (1F)
- Voltage Range: 2.0V to 20V
- Operating Temp Range: -20°C to +70°C (select values offer -40°C to +75°C)
- ESR: 25mΩ to 600mΩ
- BestCap® has the most “capacitor-like” frequency response of all SuperCaps and has low ESR and low profile characteristics
- **NOT RECOMMENDED FOR NEW DESIGNS**



SCC SERIES

Cylindrical SuperCaps

- Acetonitrile (ACN) based electrolyte technology
- Provide extended back-up time, longer battery life, and provide instantaneous power pulses as needed
- Capacitance Range: 1F to 3000F
- 2.7V and 3.0V rated parts
- Operating Temp Range: -40°C to +85°C
- Can offer bent leads on radial leaded offerings per customer request
- SCC LE Series that offer special low ESR products
- Qualifying automotive grade series



SCM SERIES

Series-Connected Modules

- Feature very high capacitance, low ESR, and low leakage current
- Capacitance Range: 0.33F to 500F
- Voltage Range: 5.0V to 48V+
- Operating Temp Range: -40°C to +85°C
- Offer High Reliability SCM Series parts featuring moisture ingress resistance for longer lifetime performance
- Large & custom module design capability for markets such as large industrial, automotive, wind, grid, etc.



PRIZMACAP™

SCP Series

- Propylene carbonate (PC) based electrolyte technology
- Capacitance Range: 3.5F to 15F (and more to come)
- Operating Temp Range: -55°C to +90°C
- Rated Voltage: 2.1V up to +65°C, derating to 1.1V for temp extension up to +90°C operation
- ESR as low as 30mΩ at 1 kHz, 55mΩ at DC
- Leakage current ratings ~50μA
- Low profile starting from 0.8mm and ultra-lightweight from <2 grams
- Customizable form factor
- Utilize AVX Interconnect Single 2 Piece Contacts: BTB, 70-9159 Series connectors instead of hand soldering

