Solutions Across the Board

SuperCapacitors
Enabling Remote IoT Applications

IoT allows for the remote monitoring of anything 24/7. A design challenge for engineers, is to provide power to remote IoT modules for a length of time that makes it cost effective.

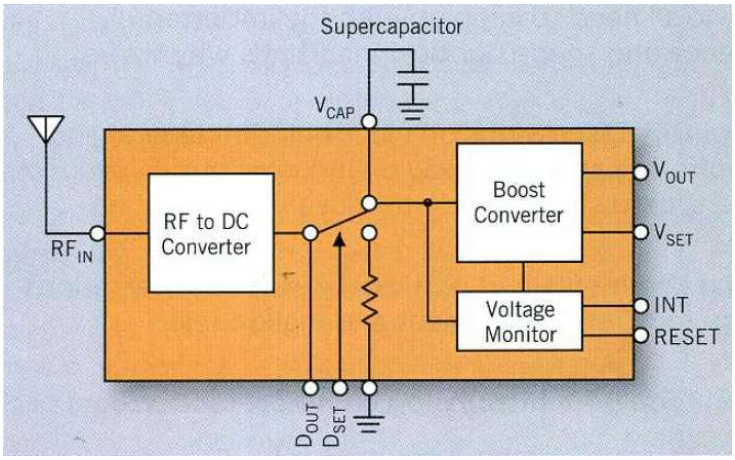
The reduced efficiency of battery swapping/charging make the "remote" aspect of the IoT module, less attractive. Batteries do have very high energy density, but can be large, and their lifetime is reduced by harsh conditions or by frequent peak power demands, such as transmitting an RF signal.

Supercapacitors have much higher power handling capability than that of batteries. This unique property of super capacitors can extend battery life, increase RF range, and increase the efficiency of an energy harvesting module that is charging a remote IoT battery.

Although not as energy dense as batteries, in some instances, an energy harvesting module implementing supercapacitors can completely replace a battery system.

Features and Benefits

- Low ESR
- Low Leakage Current
- High Reliability Options
- High Charge/Discharge Cycles
- Custom Modules Available
- Multiple Terminations
- High Pulse Power Capability
- Large Energy Density
- Wider Op. Temp. Range VS Batteries
- +2x extended lifetime of battery systems



RF Energy Harvester Implementing AVX Super Capacitor

About the Technology

AVX SuperCapacitors are electrochemical double layer capacitors (EDLC). Two layers of activated carbon and ionic charge carriers provide the massive capacitance available. Recent developments of low ESR, low leakage current have drastically increased the viability of this technology in the industry. They are a great compromise between batteries and electrolytic capacitors.

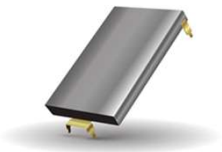
AVX SuperCapacitor Series	Capacitance Range (F)	Voltage Range (V)	Temperature Range (°C)	Design Registerable
SCC	1 – 3000	2.3 – 2.7	-40 to 85	Yes
SCM	0.33 – 500	5 – 48	-40 to 85	Yes
BZ	4.7mF – 1F	3.6 – 20	-20 to 70	Yes

SCC	R	12	B	105	P	R	B	–
Series SuperCap Cylindrical	**Diameter** Q = 6.3mm R = 8mm S = 10mm T = 12.5mm U = 16mm V = 18mm W = 22mm X = 30mm Y = 35mm Z = 60mm	**Case Length** Two digits represent case length in mm, with the exception of the following: 1A = 120mm 1E = 138mm	**Voltage Code** B = 2.7V	**Capacitance Code** 1st two digits represent significant figures 3rd digit represents multiplier (number of zeros to follow)	**Tolerance** P = +100%/-0% S = +30%/-10%	**Lead Format** R = Radial S = Solder Pin C = Cylindrical	**Package** B = Bulk T = Tray*	**Custom Code** A1= 4mm Bent Leads* C1 = 2mm Bent Leads*

*Inquire about availability

SCM	R	14	C	474	P	R	B	A	0
Series SuperCap Module	**Diameter** Q = 6.3mm R = 8mm / 9.5mm** S = 10mm T = 12.5mm U = 16mm	**Case Length** Two digits represent case length in mm	**Voltage Code** C = 5.0V D = 5.4V F = 5.5V G = 7.5V H = 6.0V J = 8.1V L = 9.0V	**Capacitance Code** 1st two digits represent significant figures 3rd digit represents multiplier (number of zeros to follow)	**Tolerance** P = +100%/-0% S = +30%/-10%	**Package/Lead Format** R = Shrink Wrap/Radial S = Plastic/Radial	**Package** B = Bulk T = Tray*	**Balancing** A = Unbalanced B = Passive Balanced	**Lead Orientation** 0 = Straight Leads 1 = Bent Leads*

*Inquire about availability
**Plastic/Radial version



BZ	0	1	5	A	503	Z	A	B	XX
BestCap®	**Standard** 0 = Standard 1 = High Cap	**Case Size** 1 = 28mmx17mm 2 = 48mmx30mm 5 = 20mmx15mm 9 = 17mmx15mm	**Rated Voltage** 3 = 3.6V 4 = 4.5V 5 = 5.5V 9 = 9.0V C = 12.0V F = 15.0V G = 16.0V K = 20.0V	**Series** A = Maximum Capacitance B = Low Profile	**Capacitance Code (Farad Code)**	**Capacitance Tolerance** Z = (+80/-20)% 8 = (+50/-20)% P = (+100/-0)% N = (+30/-30)%	**Lead Format** A, H, L, N, S or W	**Packaging** B = Bulk	**Not Used For Standard Product (Consult Factory For Special Requirements)**

AVX PRIZMACAP™ Coming Soon: 1F-500F, 1.1V-2.1V, -55°C to 90°C
- Low profile design, as thin as 0.5 mm!