

# 4.0V Low Leakage Lithium Hybrid Supercapacitors



**AHCR-S04R0S**

Request Samples



Check Inventory



Various Sizes

RoHS/RoHS II Compliant

MSL Level = 1

## Features

- High Energy density of over 50Wh/Kg
- Low Leakage Current as small as 1 $\mu$ A
- Low Self-discharge rate, 72 hours @ discharge <5%
- Excellent cycle life of >50K cycles
- Green, meet RoHS requirements.

## Applications

- Power Assist Circuits
- Power Backup
- Micro Energy Storage
- IoT Energy Harvesting
- SSD applications
- DDR power back up
- RTC System power transfer to battery backup

## Electrical Specifications

Part Number	Operating Voltage (U <sub>R</sub> )	Capacitance	Tolerance	DC ESR (Max)	Continuous Current (Max)	Peak Current (Max)	Leakage Current	Stored Energy (Max)	Gravimetric Energy Density
AHCR-S04R0S	DC(V)	Farads	-10% / +30%	m $\Omega$	A	A	mA	Wh	Wh/kg
AHCR-S04R0SA106Q	4.0V	10	Q	1000	0.04	0.21	0.001	0.022	22.22
AHCR-S04R0SA206Q	4.0V	20	Q	600	0.08	0.42	0.002	0.044	29.63
AHCR-S04R0SA306Q	4.0V	30	Q	500	0.13	0.63	0.003	0.067	38.10
AHCR-S04R0SA406Q	4.0V	40	Q	400	0.17	0.83	0.003	0.089	44.44
AHCR-S04R0SA506Q	4.0V	50	Q	360	0.21	1.04	0.003	0.111	44.44
AHCR-S04R0SA806Q	4.0V	80	Q	300	0.33	1.67	0.004	0.178	61.30
AHCR-S04R0SA107Q	4.0V	100	Q	240	0.42	2.08	0.004	0.222	55.56
AHCR-S04R0SA127Q	4.0V	120	Q	200	0.50	2.50	0.005	0.267	53.33
AHCR-S04R0SA187Q	4.0V	180	Q	140	0.75	3.75	0.006	0.400	64.52
AHCR-S04R0SA227Q	4.0V	220	Q	100	0.92	4.58	0.006	0.489	65.19
AHCR-S04R0SA307Q	4.0V	300	Q	90	1.25	6.25	0.007	0.667	74.07
AHCR-S04R0SA387Q	4.0V	380	Q	80	1.58	7.92	0.008	0.844	73.43
AHCR-S04R0SA457Q	4.0V	450	Q	70	1.88	9.38	0.009	1.000	71.43
AHCR-S04R0SA757Q	4.0V	750	Q	50	3.12	15.62	0.012	1.667	79.37
AHCR-S04R0SA857Q	4.0V	850	Q	40	3.54	17.71	0.013	1.889	80.38
AHCR-S04R0SA128Q	4.0V	1200	Q	35	6.00	20.00	0.015	2.667	124.03

**Operating Temperature:** -20°C to +65°C

**Storage:** Temperature -20°C to +50°C, RH<60%, Max. Humidity <85% RH

**Test Conditions:** +25°C

All parameters are measured according to the IEC 62813 standard.

Capacitance and ESR are measured with  $I(\text{mA}) = 4(C \cdot U_R)$

**Continuous Current:** 10C

**Peak Current (Max.):** 50C

**Leakage Current:** Measured after 72h at U<sub>R</sub>

**Maximum Charging Voltage:** 4.2V

**Lower Voltage Threshold:** 2.5V



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Bee Cave, TX 78738

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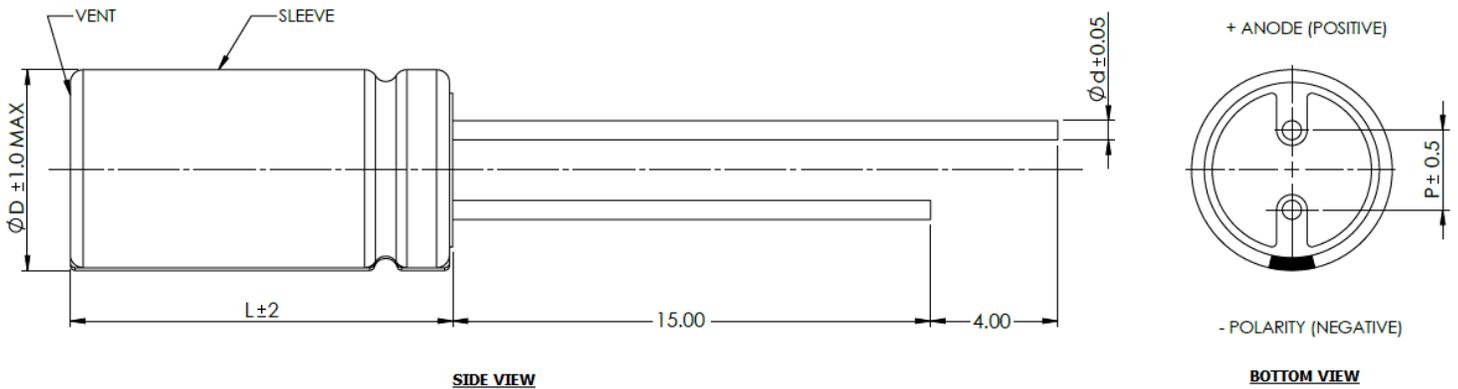


Various Sizes

RoHS/RoHS II Compliant

MSL Level = 1

## Mechanical Specifications



Dimensions	D	L	P	d
AHCR-S04R0SA106Q	6.3±1.0	12.0	2.5±0.5	0.6±0.05
AHCR-S04R0SA206Q	8.0±1.0	12.0	3.5±0.5	0.6±0.05
AHCR-S04R0SA306Q	8.0±1.0	16.0	3.5±0.5	0.6±0.05
AHCR-S04R0SA406Q	8.0±1.0	20.0	3.5±0.5	0.6±0.05
AHCR-S04R0SA506Q	8.0±1.0	25.0	3.5±0.5	0.6±0.05
AHCR-S04R0SA806Q	10.0±1.0	20.0	5.0±0.5	0.7±0.05
AHCR-S04R0SA107Q	10.0±1.0	25.0	5.0±0.5	0.7±0.05
AHCR-S04R0SA127Q	12.5±1.0	20.0	5.0±0.5	0.7±0.05
AHCR-S04R0SA187Q	12.5±1.0	25.0	5.0±0.5	0.7±0.05
AHCR-S04R0SA227Q	12.5±1.0	30.0	5.0±0.5	0.7±0.05
AHCR-S04R0SA307Q	16.0±1.0	25.0	7.5±0.5	0.8±0.05
AHCR-S04R0SA387Q	16.0±1.0	30.0	7.5±0.5	0.8±0.05
AHCR-S04R0SA457Q	16.0±1.0	35.0	7.5±0.5	0.8±0.05
AHCR-S04R0SA757Q	18.0±1.0	40.0	7.5±0.5	0.8±0.05
AHCR-S04R0SA857Q	18.0±1.0	45.0	7.5±0.5	0.8±0.05
AHCR-S04R0SA128Q	18.0±1.0	40.0	7.5±0.5	0.8±0.05

Dimensions: mm



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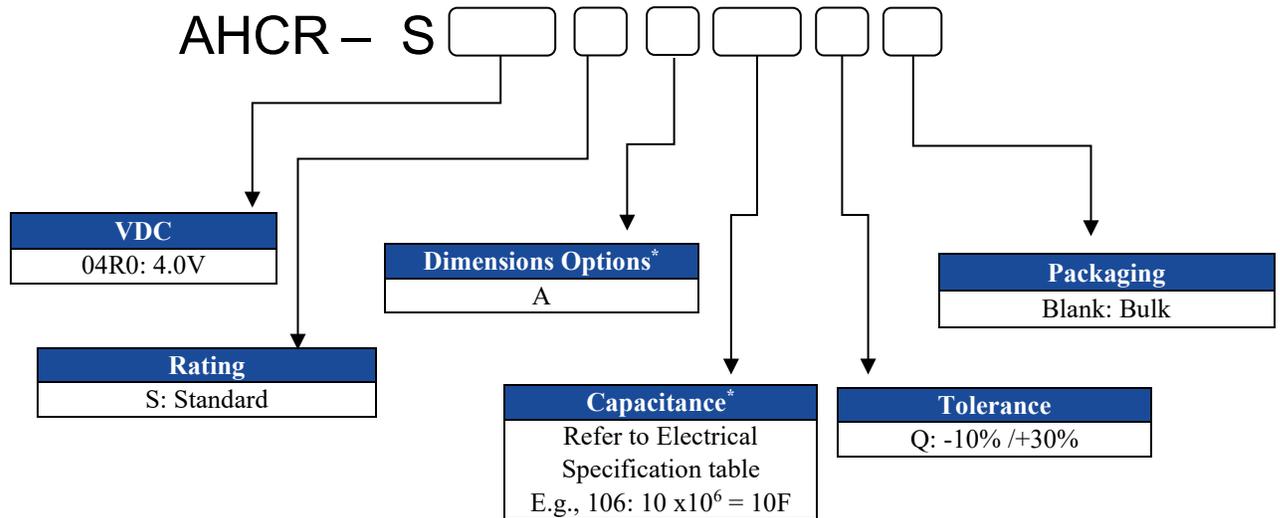


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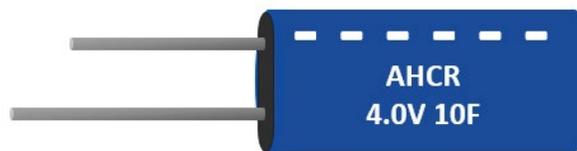
MSL Level = 1

## Part Number Identification



\*Only part numbers listed in the Electrical Specs table are available. For custom builds, please contact us.

## Part Marking



Example of the Markings of a 10.0F 4.0V capacitor

- Capacitance (F)
- Rated Voltage (V)
- Polarity (negative bar on the sleeve to indicate the cathode)



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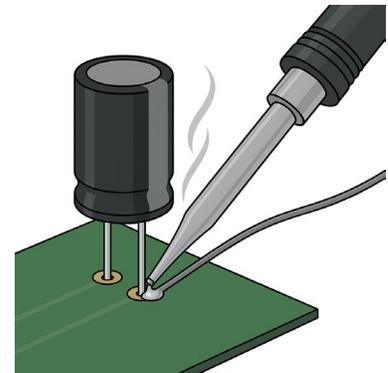
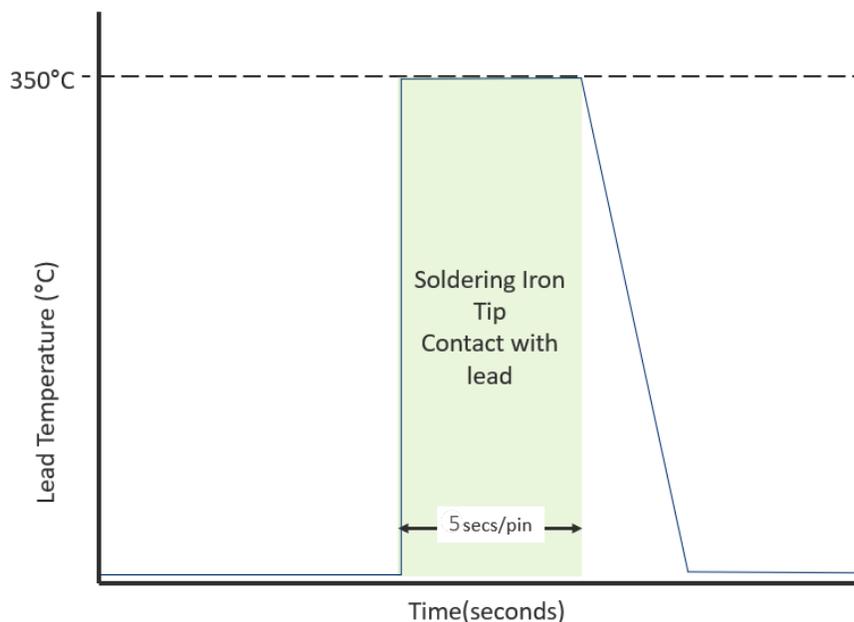
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## Soldering Precautions

The AHCR-S04R0S series are lithium hybrid supercapacitors and are shipped with a charge. Therefore, care must be taken not to short the leads during the soldering process.

- Reflow soldering, for example, Infrared, convection or forced air are **not recommended** due to the pre-heating temperature and duration of the process.
- Wave soldering is **not recommended** due to solder bath providing an electrical short between the components leads.

Hand/manual soldering is the safest option for assembly. The recommended tip temperature is **260–350°C**, depending on the thickness of the PCB and the number of layers, with a **max. contact time of 5 sec.**



Washing or submerging components in any type of detergent or cleaning solution is prohibited. If flux is used, Abracon recommends using no-clean or mildly activated rosin flux.

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## Packaging

The product is packaged in a carton containing multiple inner boxes, each containing several trays.

Part Number	SPQ	Pcs/Carton
AHCR-S04R0SA106Q	1050	4200
AHCR-S04R0SA206Q	600	2400
AHCR-S04R0SA306Q	600	2400
AHCR-S04R0SA406Q	600	2400
AHCR-S04R0SA506Q	720	2880
AHCR-S04R0SA806Q	700	2800
AHCR-S04R0SA107Q	520	2080
AHCR-S04R0SA127Q	520	2080
AHCR-S04R0SA187Q	440	1760
AHCR-S04R0SA227Q	440	1760
AHCR-S04R0SA307Q	320	1280
AHCR-S04R0SA387Q	320	1280
AHCR-S04R0SA457Q	320	1280
AHCR-S04R0SA757Q	280	1120
AHCR-S04R0SA857Q	210	840
AHCR-S04R0SA128Q	210	840

The AHCR family are hybrid supercapacitors and must be shipped with a small charge. The contacts must not touch other capacitors, or possible damage may occur. If the order quantity is less than 1 full tray, the tray must be cut to accommodate the order quantity while maintaining each capacitor within its own cavity. Do not place in bag.

## Transport of Product

This product is not subject to US DOT or IATA regulations UN3499 since maximum stored energy is below 10Wh and can be considered Non-Hazardous Goods.

**ATTENTION:** Abracon LLC's products are Commercial-Off-The-Shelf (COTS), which are designed, intended and validated for use in commercial, industrial and automotive applications. The customer is responsible for testing and verifying the performance of an Abracon solution to meet their system-level requirements.



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