

#### ADCV-S05R5S

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Various Sizes **RoHS/RoHS II Compliant** MSL Level = 1

#### **Features**

- Coin Type Supercapacitor
- Vertical Configuration
- High power density
- Minimal discharge rate, 72 hours @ discharge<20%
- Excellent cycle life
- 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      | Nominal<br>Voltage<br>(U <sub>R</sub> ) |        | Tol.       | ESR<br>(Max) | Nominal<br>Current | Peak<br>Current<br>(Max) | Leakage<br>Current<br>(Max) | Stored<br>Energy<br>(Max) | Gravimetric<br>Energy<br>Density | Volumetric<br>Energy<br>Density |
|------------------|---|--------|------------|--------------|--------------------|--------------------------|-----------------------------|---------------------------|----------------------------------|---------------------------------|
| ADCV-S05R5S      | DC(V)                                   | Farads | ±%         | Ω            | Α                  | Α                        | uA                          | mWh                       | Wh/kg                            | Wh/L                            |
| ADCV-S05R5SA473W | 5.5V                                    | 0.047  | -20%/ 100% | 120          | 0.010              | 0.014                    | 3                           | 0.197                     | 0.156                            | 0.380                           |
| ADCV-S05R5SA104X | 5.5V                                    | 0.1    | -20%/ 150% | 50           | 0.022              | 0.032                    | 3                           | 0.420                     | 0.303                            | 0.809                           |
| ADCV-S05R5SA224W | 5.5V                                    | 0.22   | -20%/ 100% | 40           | 0.033              | 0.043                    | 4                           | 0.924                     | 0.707                            | 1.780                           |
| ADCV-S05R5SA334Z | 5.5V                                    | 0.33   | -20%/ 80%  | 40           | 0.037              | 0.044                    | 5                           | 1.386                     | 0.998                            | 2.670                           |
| ADCV-S05R5SA474Q | 5.5V                                    | 0.47   | -10%/ 30%  | 40           | 0.039              | 0.044                    | 6                           | 1.975                     | 1.412                            | 3.802                           |
| ADCV-S05R5SA105R | 5.5V                                    | 1      | 0/+30%     | 15           | 0.100              | 0.117                    | 8                           | 4.201                     | 1.004                            | 2.833                           |
| ADCV-S05R5SA155R | 5.5V                                    | 1.5    | 0/+30%     | 10           | 0.150              | 0.176                    | 12                          | 6.302                     | 1.488                            | 4.249                           |

**Operating Temperature: -25°C to +70°C** 

Storage Temperature: -30°C to +50°C, RH<60%, Max. Humidity <85% RH

**Test Conditions:** 

All parameters are measured according to the IEC 62391-1 standard.

**Ambient Temperature:** +25°C

Capacitance: measured with  $I(mA) = 4(C * U_R)$ .

**ESR:** Measured at 1KHz.

Nominal Current: 5 Seconds to discharge from U<sub>R</sub> to 1/2U<sub>R</sub>. Peak Current (Max.): 1 second to discharge to U<sub>R</sub> to 1/2U<sub>R</sub>.

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

**Life Cycles:** 500,000 cycles with less than 30% change in capacitance.





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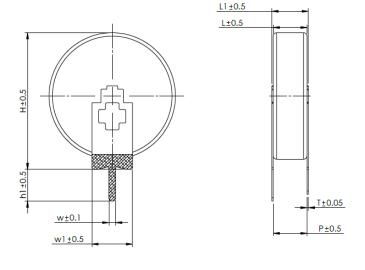


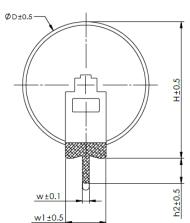
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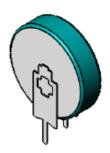


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### **Mechanical Specifications**









| ABRACON PART#    | SIZE<br>D x L x H | TOTAL<br>THICKNESS<br>L1 | PIN<br>SPACING<br>P | PIN WIDTH<br>w/w1 | PIN LENGTH<br>h1/h2 | LEAD THICKNESS<br>T |
|------------------|-------------------|--------------------------|---------------------|-------------------|---------------------|---------------------|
| ADCV-S05R5SA473W | 11.5 x 4.6 x 12.3 | 5.0                      | 4.7                 | 1/3.0             | 4.7/3.7             | 0.2                 |
| ADCV-S05R5SA104X | 11.5 x 4.6 x 12.3 | 5.0                      | 4.7                 | 1/3.0             | 4.7/3.7             | 0.2                 |
| ADCV-S05R5SA224W | 11.5 x 4.6 x 12.3 | 5.0                      | 4.7                 | 1/3.0             | 4.7/3.7             | 0.2                 |
| ADCV-S05R5SA334Z | 11.5 x 4.6 x 12.3 | 5.0                      | 4.7                 | 1/3.0             | 4.7/3.7             | 0.2                 |
| ADCV-S05R5SA474Q | 11.5 x 4.6 x 12.3 | 5.0                      | 4.7                 | 1/3.0             | 4.7/3.7             | 0.2                 |
| ADCV-S05R5SA105R | 18.7 x 5.0 x 20.2 | 5.4                      | 5.0                 | 1/6.0             | 4.7/3.7             | 0.2                 |
| ADCV-S05R5SA155R | 18.7 x 5.0 x 20.2 | 5.4                      | 5.0                 | 1/6.0             | 4.7/3.7             | 0.2                 |

**Dimensions: mm** 





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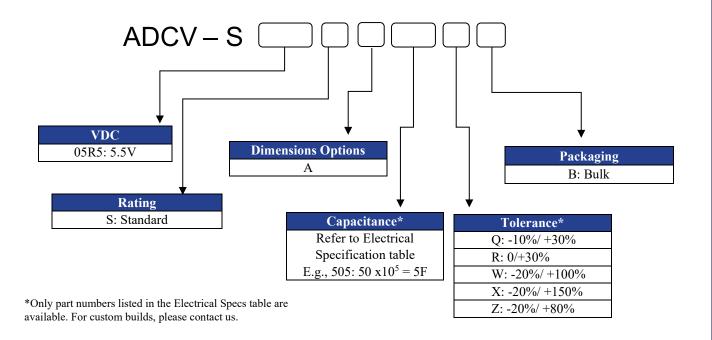


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#### **Part Number Identification**



### **Part Marking**



Example of the Markings of a 5.5V 0.1F supercapacitor

Capacitance (F) Rated Voltage (V)

Polarity (negative bar on the sleeve to indicate the cathode). (The bar might look slightly different for 1.0F and 1.5F parts)





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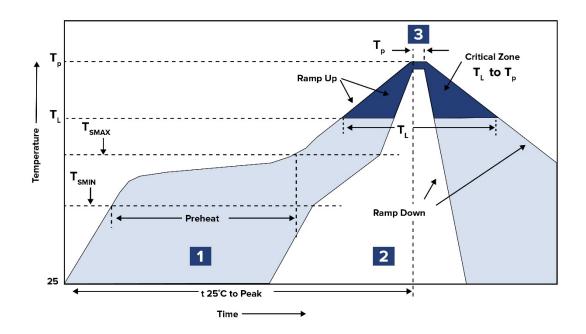


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### **Reflow Profile**



| Zone | Description | Temperature  | Times                      |  |  |
|------|-------------|--|----------------------------|--|--|
| 1    | Preheat     | $\begin{split} T_{SMIN} \sim T_{SMAX} \\ 100^{\circ}C \sim 150^{\circ}C \end{split}$ | $60 \sim 120 \text{ sec.}$ |  |  |
| 2    | Reflow      | T <sub>L</sub><br>200°C  | 30 ∼ 40 sec.               |  |  |
| 3    | Peak heat   | Т <sub>Р</sub><br>240°С±5°С  | 5 sec. MAX                 |  |  |





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### **Packaging**

| Part Number       | Quantity<br>(PCS/Box) |
|-------------------|-----------------------|
| ADCV-S05R5SA473WB | 1456                  |
| ADCV-S05R5SA104XB | 1456                  |
| ADCV-S05R5SA224WB | 1232                  |
| ADCV-S05R5SA334ZB | 1232                  |
| ADCV-S05R5SA474QB | 1204                  |
| ADCV-S05R5SA105RB | 1134                  |
| ADCV-S05R5SA155RB | 1134                  |

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