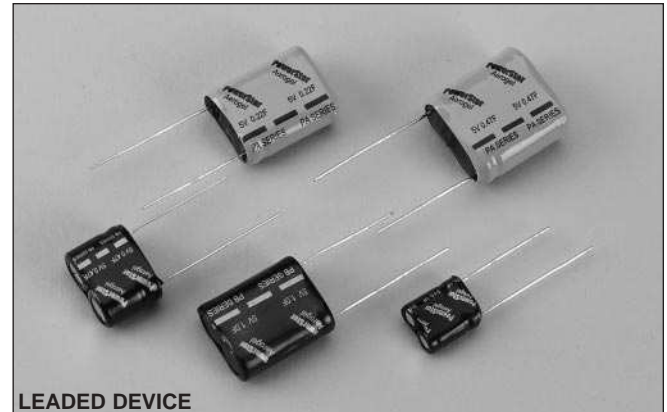


### Description

The PowerStor Aerogel Capacitor is a unique, ultra-high capacitance device based on a novel type of carbon foam, known as carbon aerogel. Aerogel capacitors are similar to supercapacitors, ultracapacitors and electrochemical double layer capacitors (EDLCs) with the added benefit of low ESR (Equivalent Series Resistance).

The P Series is available in an ultra-low ESR version, PA or a low ESR but higher energy density version, PB.



| SERIES | FEATURES AND BENEFITS                                       |                                    | APPLICATIONS   |
|--------|---|------------------------------------|--|
|        | Generic   | Specific                           |  |
| PA     | 5.0 volts<br>Low ESR  | Ultra-low ESR                      | Pulse power<br>Bridge or hold up power                       |
| PB     | High capacitance<br>Long cycle life<br>Low leakage currents | Low ESR with higher energy density | Bridge or hold up power<br>Memory backup<br>Battery swap out |

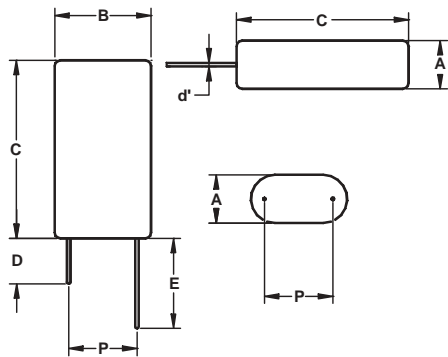
| SPECIFICATIONS              |                     |
|-----------------------------|---------------------|
| Working Voltage             | 5.0 volts           |
| Surge Voltage               | 6.0 volts           |
| Nominal Capacitance Range   | 0.1 to 1.0 F        |
| Capacitance Tolerance       | -20% to +80% (20°C) |
| Operating Temperature Range | -25°C to 70°C       |

| STANDARD PRODUCTS         |             |  |                       |
|---------------------------|-------------|--|-----------------------|
| LOW ESR (PB SERIES)       |             |  |                       |
| Nominal Capacitance (F)   | Part Number | Nominal ESR (Equivalent Series Resistance) Measured @ 1kHz (Ω) | Nominal Dimensions    |
| 0.1                       | PB-5R0V104  | 10   | 5.5 x 10.8 x 12.5 mm  |
|                           | PB-5R0H104  |  |                       |
| 0.47                      | PB-5R0V474  | 2  | 8.5 x 16.8 x 14.0 mm  |
|                           | PB-5R0H474  |  |                       |
| 1.0                       | PB-5R0V105  | 1  | 8.5 x 16.8 x 21.5 mm  |
|                           | PB-5R0H105  |  |                       |
| ULTRA-LOW ESR (PA SERIES) |             |  |                       |
| 0.22                      | PA-5R0V224  | 0.30   | 8.5 x 16.8 x 21.5 mm  |
|                           | PA-5R0H224  |  |                       |
| 0.47                      | PA-5R0V474  | 0.20   | 10.5 x 20.8 x 22.5 mm |
|                           | PA-5R0H474  |  |                       |

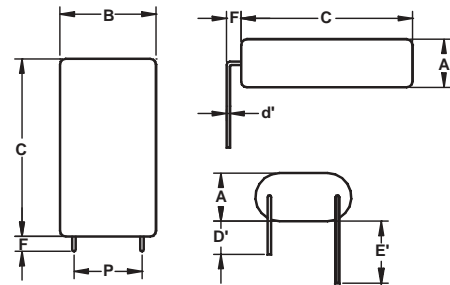
| PERFORMANCE  |  |                                    |
|--|--|------------------------------------|
| Parameter  | Capacitance Change (% of initial measured value) | ESR (% of initial specified value) |
| Life (1000 hrs @ 70°C @ 5.0 volts DC)                          | ≤ 30   | ≤ 300                              |
| Storage - Low and High Temperature (1000 hrs @ -25°C and 70°C) | ≤ 30   | ≤ 300                              |

| DIMENSIONS (mm)          |         |      |      |        |         |    |    |    |       |      |
|--------------------------|---------|------|------|--------|---------|----|----|----|-------|------|
| Part Number              | A       | B    | C    | d'     | D       | D' | E  | E' | F     | P    |
| PB-5R0V104<br>PB-5R0H104 | 6.0     | 11.3 | 13.0 | 0.5    | 20      | 15 | 25 | 20 | 2.0   | 7.3  |
| PB-5R0V474<br>PB-5R0H474 | 9.0     | 17.3 | 14.5 | 0.5    | 20      | 15 | 25 | 20 | 2.0   | 11.8 |
| PB-5R0V105<br>PB-5R0H105 | 9.0     | 17.3 | 22.0 | 0.5    | 20      | 15 | 25 | 20 | 2.0   | 11.8 |
| PA-5R0V224<br>PA-5R0H224 | 9.0     | 17.3 | 22.0 | 0.5    | 20      | 15 | 25 | 20 | 2.0   | 11.8 |
| PA-5R0V474<br>PA-5R0H474 | 11.0    | 21.3 | 23.0 | 0.6    | 20      | 15 | 25 | 20 | 2.0   | 5.3  |
| <b>Tolerances</b>        | Maximum |      |      | ± 0.02 | Minimum |    |    |    | ± 0.5 |      |

Note: Longer lead is positive



**VERTICAL**



**HORIZONTAL**

| PART NUMBERING SYSTEM |   |   |                             |          |                                |  |  |
|-----------------------|---|---|-----------------------------|----------|--------------------------------|--|--|
| <b>P</b>              |   | - | <b>5</b>                    | <b>R</b> | <b>0</b>                       |  | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| Series Code           | Version                                   |   | Voltage (V)<br>R is decimal |          | Configuration                  | Capacitance (µF)                                     |  |
| P = Pack              | A = Ultra-low ESR<br>B = High Capacitance |   | 5R0 = 5.0V                  |          | V = Vertical<br>H = Horizontal | Value  | Multiplier   |
|                       |   |   |                             |          |                                | Example:<br>474 = 47 x 10 <sup>4</sup> µ F or 0.47 F |  |

**PACKAGING INFORMATION**

Standard packaging: Bulk, 100 units per package.  
 Larger bulk packages available upon request.

**PART MARKING**

Manufacturer  
 Capacitance (F)  
 Max. Operating Voltage (V)  
 Polarity Marking